Planning Panels Victoria

Casey Planning Scheme Amendment C225:
Rezoning of 860 Ballarto Road, Botanic Ridge

Expert Witness Evidence

Andrew Stephens, Bushfire and Ecological Consultant

5 October 2017
1. Qualifications and Experience of Andrew Stephens

1.1. I have a Bachelor’s Degree in Conservation Biology and Ecology from La Trobe University majoring in botany and genetics which was completed in 2002. I have also completed a Graduate Diploma in Humanities and Social Sciences at La Trobe in 2006. In 2010 I undertook the University of Technology Sydney’s short course in Development and Building in Bushfire Prone Areas and in 2013 completed the inaugural Postgraduate Certificate in Bushfire Management and Planning at University of Melbourne in 2013. I have continued with that stream of study under a Master Degree, and have completed all subjects associated with the Postgraduate Diploma in Bushfire Management and Planning and will complete the Master Degree in 2017. I am an accredited Level 2 Bushfire and Planning Design Practitioner with the Fire Protection Association of Australia.

1.2. I began working for Practical Ecology in 2003 and have over ten years’ experience as an ecological and bushfire consultant. As well as undertaking further studies since initially joining Practical Ecology, I have spent time working as a sole trader undertaking ecological restoration and travelled. As an ecological and bushfire consultant I have undertaken many dozens of ecological and bushfire projects and reports, including dozens of flora and fauna assessments, bushfire assessments and management statements and associated land and offset management plans. I have undertaken such projects for single dwellings, subdivisions, re-zonings and precinct structure plans.

1.3. In addition to planning scheme related projects I have undertaken many projects to support the ecological and bushfire risk management of private and public managers and authorities such as Parks Victoria, Department of Environment and Primary Industries, Melbourne Water and other water authorities, Department of Planning and many local government authorities including Macedon Ranges, Frankston, Casey, Cardinia, Yarra Ranges, Nillumbik, Whittlesea, Melton and Wyndham.

1.4. In summary, my expertise is in reconciling ecological and bushfire management while fulfilling associated objectives of land-use planning. Over time I have developed extensive knowledge of ecology, bushfire and the planning system through training and experience. A summarised CV is attached at the end of the statement.
2. Instructions from the proponent

2.1. I was requested to prepare a statement of evidence and appear as an expert witness for the owners of 860 Ballarto Road (860 Ballarto Road Pty Ltd) in this proceeding. I was instructed to:

i. adopt the bushfire hazard assessment report prepared by Practical Ecology in August 2015, making any necessary changes;

ii. address any issues raised in submissions or by Council which are relevant to your area of expertise;

iii. to the extent that it is relevant to your assessment, comment on the indicative subdivisional layout for Precinct 1; and

iv. express your opinion on the appropriateness of the Amendment:
   - within the scope of your expertise:
   - using your own judgement and experience; and
   - addressing any other matter which you regard as relevant to the formulation of your opinion, stating clearly the basis of your views.

3. Documents and other materials considered:

3.1. Practical Ecology previously prepared a Bushfire Hazard Assessment in August 2015 which reviews the bushfire matters relating to this planning scheme amendment. I attach this report as part of evidence, with some modifications/considerations as outlined in this submission (e.g. consideration of proposed vegetation along Ballarto Road; refined mapping of vegetation on Settlers Run Golf Course).

3.2. In additional to the relevant sections of the Planning Scheme I have reviewed the following documentation for bushfire matters relating to the amendment:

- Exhibited Planning Scheme Amendment C225 documents including:
  - Zoning Maps
  - Overlay Maps
  - Proposed schedule 23 to the Development Plan Overlay
  - Proposed schedule 3 to the Bushfire Management Overlay
  - Proposed schedule to Clause 52.01

- Planning Scheme Amendment Report prepared by KLM Spatial dated 10/9/2015

- Submissions made to the exhibited amendment and a table summary with council’s responses

- Revised proposed schedule 23 to the Development Plan Overlay
Witness Evidence of Andrew Stephens: Amendment C225

- Letters from KLM Spatial to City of Casey dated 28/4/2017 and 23 May 2017 in response to submission and amendments to C225
- Proponents Concept Plan of Subdivision (ref 3885.02 CP01, Version 1 dated 25/09/2017)
- City of Casey Submission to the Planning Panel.

3.3. Other general reference material is listed in the references section towards the end of this report.

4. Proposed amendment and relevant bushfire planning considerations

4.1. In addition to rezoning 860 Ballarto Road (Precinct 1) from Farming Zone – Schedule 2 to the General Residential Zone, the Amendment seeks to:
- introduce Schedule 23 to the Development Plan Overlay (DPO23) and apply it to all land in the Botanic Ridge Stage 4 area (Precincts 1 and 2)
- introduce Schedule 3 to the Bushfire Management Overlay (BMO3) to part of the land in Precinct 1.

4.2. The focus of my submission is 860 Ballarto Road. It is currently zoned Farming Zone and not subject to any planning scheme overlays. It is however identified as a Bushfire Prone Area as per the Victorian Interim Building Regulations 2017.

4.3. The key planning legislation this documents seeks to respond to includes:
- Ministerial Direction Number 11 – Strategic assessment of amendments
- Clause 13.05–1 Bushfire Planning Strategies and Principles, which provides a broad framework to assist and strengthen community resilience to bushfire
- Clause 44.06 Bushfire Management Overlay and associated Clause 52.47 Planning for Bushfire
- And the proposed amendments to the planning scheme that will affect the site:
  - Schedule 23 to the Development Plan Overlay (DPO23)
  - Schedule 3 to the Bushfire Management Overlay (BMO3)

5. Strategic assessment of the amendment

5.1. The purpose of Direction No. 11 Strategic Assessment of Amendments is to ensure a comprehensive strategic evaluation of a planning scheme amendment which includes consideration as to how the amendment addresses any relevant bushfire risk.

5.2. Clause 13.05 of the Victorian Planning Provisions has the objective of assisting to strengthen community resilience to bushfire. The overarching strategies are to:
- prioritise the protection of human life over other policy considerations in planning and decision–making in areas at risk from bushfire,
• apply the precautionary principle to planning and decision-making when assessing the risk to life, property and community infrastructure from bushfire.

5.3. Clause 13.05 provides strategic and settlement strategies and a key tenant of these are that when planning to create or expand a settlement in an area at risk from bushfire the risk to future residents, property and community infrastructure is reduced to an acceptable level. Development control strategies include to only permit new development where:

• The risk to human life, property and community infrastructure from bushfire can be reduced to an acceptable level.
• Bushfire protection measures, including the siting, design and construction of buildings, vegetation management, water supply and access and egress can be readily implemented and managed within the property.
• The risk to existing residents, property and community infrastructure from bushfire is not increased.

5.4. Appendix 1 to this statement presents the landscape context in which the development occurs. It can be seen the subject land is surrounded by residential development and grassland areas in most directions. The major area of bushland is associated with the adjoining land to the south-east, which includes SBI Cranbourne Quarries and the Royal Botanic Gardens Cranbourne. There are also some scattered areas of bushland in the Settlers Run Golf Course to the south.

5.5. Fire associated with bushfires in Victoria are most associated with north-west wind; a south-westerly cool change can follow and it is these directions from which bushfire is most likely to travel. There is little opportunity for bushfire to approach the site from these directions given the existing development and land management. The bushland vegetation to the southwest is highly unlikely to result in a bushfire that threatens the site and in a bushfire on this land will most likely be traveling away from the subject site. As such the subject site sits within an area of low bushfire risk.

5.6. Planning Practice Note 65 (DTPLI 2014) provides a typology of bushfire landscapes to help with assessing bushfire risk from a broader perspective. These are summarised in Table 1 below. The landscape around the subject site is probably best placed between type 1 and type 2.
5.7. The landscape bushfire risk at the site is low in the context of Victorian conditions. The main fuel hazard occurs to the south–east of the site, which is the direction of least bushfire risk. The bushfire risk can easily be reduced to an acceptable level through appropriate measures at the site level. For these reasons re–zoning the land for residential purposes is consistent with the strategic management of bushfire risk as specified in the planning scheme.

6. Measures to address the bushfire risk

6.1. The amendment proposes two main mechanisms to address the bushfire risk. These being the expansion of the BMO onto 860 Ballarto Road and the introduction of an associated schedule 3; and the introduction of a Development Plan Overlay that requires consideration of the bushfire risk. It is understood these schedules have been developed in consultation with and approval by the CFA.

6.2. Firstly, I will consider the Bushfire Management Overlay. The BMO and a new schedule 3 (BMO3) is to be applied to the eastern portion of the site that is within 150m of bushland as shown in Figure 1 below. I support its application to these areas which is consistent with Planning Practice Note 64 Local planning for bushfire protection September 2015.
Figure 1. The BMO is proposed to apply to the eastern portion of the site that is within 150m of bushland.

6.3. The proposed schedule 3 to the BMO will exempt the need for the construction of a dwelling where the DPO23 applies and conditions are met including the construction of a dwelling to BAL 12.5 and the provision of a suitable water supply and vehicle access.

6.4. I recommend that the wording of the first dot point condition in section 2.0 of the proposed schedule BMO3 be changed as follows:

*The dwelling or extension to a dwelling is constructed to a minimum Bushfire Attack Level (BAL) of 12.5 and meets the requirements of the Building Act 1993 and Australian Standard 3959 Construction of Building in bushfire prone areas.*
6.5. The reference to the Australian Standard 3959 (AS3959) should be removed. The reason for this being that AS3959 is only one deemed–to–satisfy solution for construction to achieve the required BAL as specified in the National Construction Code (as required by the Victorian Building Act 1993). There are other methods including the application of the NASH Standard – Steel Framed Construction in Bushfire Areas. The current wording unnecessarily limits the construction methods available to be used.

6.6. The other main measure that requires consideration under the BMO is the requirement for defendable space. This is addressed in the BMO3 by only exempting permits for land within DPO23. DPO23 requires residential development to be set back 33m from the current eastern boundary of 860 Ballarto Road and this area is to be managed as defendable space (show as the inner zone in Figure 1 above, which is Map 2 of DPO23).

6.7. The main role of the Bushfire Hazard Assessment (BHA) provided by Practical Ecology in 2015 was to provide a Bushfire Attack Level (BAL) assessment for the subject site. This detailed a number of options for the provision of defendable space. Given that the bushland vegetation is of limited size, is considerably fragmented by the quarry and occurs to the south–east, the assumptions within AS3959 for undertaking a BAL assessment are not consistent with the subject site. AS3959 details the required setback distances to achieve an identified BAL from a fully developed bushfire that is not limited by the length of run or width of fuel. It also assumes this takes place under an FDI of 100; which essentially does not occur under easterly wind conditions in Victoria. These considerations are provided in detail in Table 3 of the 2015 Bushfire Hazard Assessment.

6.8. The 33m setback for BAL12.5 is the setback required for Woodland vegetation. The 2015 Bushfire Hazard Assessment identifies that the bushland vegetation is classified as Forest or Woodland depending on the location. While much of the vegetation meets the criteria for Forest (e.g. an understorey containing elevated fuel consisting of shrubs and Austral Bracken) in some areas, a more detailed look at the fuel levels as shown in the 2015 report (e.g. Table 2) indicates they are representative of the fuel loads expected in Woodland. Hence, the adoption of Woodland fuel loads is a more accurate assessment of the adjacent bushland.

6.9. The 2015 Bushfire Hazard Assessment uses the fuel loads equivalent for Woodland in the method 2 assessment. It also goes on to further consider a range of other factors that would limit the bushfire behaviour affecting the site, these are summarised in Table 2 below.
### Table 2. Summary of 2015 BAL assessment results

<table>
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<tr>
<th></th>
<th>Method 1</th>
<th>Method 2</th>
<th>Alternative assessment – Scenario 1</th>
<th>Alternative assessment – Scenario 2</th>
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<td>Fuel loads</td>
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<td>Adjusted Accelerating ROS based on limited distance of east–west fire run</td>
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<td>x</td>
<td>✓</td>
<td>n/a</td>
<td>✓</td>
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<tr>
<td>Adjusted Accelerating ROS based on limited distance of north–south fire run</td>
<td>x</td>
<td>x</td>
<td>n/a</td>
<td>✓</td>
<td>n/a</td>
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<tr>
<td>Reduced FFDI from 100 to 80</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓</td>
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<td>Required setback for BAL–29 dwelling from eastern boundary</td>
<td>Minimum of 25 m</td>
<td>Minimum of 16 m</td>
<td>Minimum of 12.3 m</td>
<td>Minimum of 12.3</td>
<td>Minimum of 10.9</td>
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<tr>
<td>Required setback for BAL–19 dwelling from eastern boundary</td>
<td>Minimum of 35 m</td>
<td>Minimum of 24 m</td>
<td>Minimum of 19 m</td>
<td>Minimum of 20 m</td>
<td>Minimum of 17</td>
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<tr>
<td>Required setback for BAL–12.5 dwelling from eastern boundary</td>
<td>Minimum of 48 m</td>
<td>Minimum of 33 m</td>
<td>Minimum of 26 m</td>
<td>Minimum of 26 m</td>
<td>n/a</td>
</tr>
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</table>

6.10. Practice Note 64 outlines that a schedule to the BMO may be suited when "A local analysis of bushfire behaviour demonstrates how an area varies from the ‘assumed’ bushfire behaviour supporting the state-wide measures". As outlined above this is the case at the subject site. DPO23 looks to provide the BAL 12.5 defendable space required for Woodland; the 2015 report suggest this is a very conservative assessment of the conditions at the site.

6.11. Through Clause 52.47–2.4 (AM5.2) the BMO requires that for subdivisions that create 10 or more lots defendable space for BAL 12.5 or BAL 19 is to be provided. Hence, in this regard the proposed DPO23 has taken a more conservative approach than is usually required under the BMO. A 24m setback to provide BAL 19 would also be an acceptable approach under the BMO.

6.12. Other provisions in DPO23 that respond to measures in the BMO include the requirement for a perimeter road along the eastern boundary and the implementation of vegetation management standards for any lots within the BMO. Vegetation within the 33m defendable space buffer must also be managed for defendable space, but explicit standards are not provided.

6.13. The vegetation management standards proposed within DPO23 for private lots are generally consistent with the current version of Clause 52.47. However, the defendable space for tree canopy separation is not particularly clear and easily applicable to standard residential allotments. If canopy separation is applied to each individual tree this requirement is coarse, excessive, and may increase rather than decrease bushfire risk, as trees reduce wind, provide shielding from radiant heat and capture of embers. There is also additional amenity, environmental and aesthetic values that trees provide. Hence there needs to be a balance achieved between providing these benefits and ensuring they do not contribute to fire behaviour or other risk associated with fires (e.g. falling). There is merit in providing an initial break in the canopy near the unmanaged fuel (i.e. within the 33m of public land
6.14. In standard residential allotments there are generally limited options and space for planting trees. Given this, I believe the 2m canopy separation is not required nor does it do anything to reduce or address the bushfire risk. Rather it potentially reduces the amenity values trees may provide and also provides the potential for future conflict amongst landowners protesting that neighbouring trees are violating the 2m canopy separation requirements and impinging on their right to have a tree. In summary I believe it to be an impractical measure to implement within the residential allotments. Hence it is recommended that the condition stipulating that “The canopy of trees should be separated by at least 2 metres” is removed from the management of defendable space requirements provided on page 5 of DPO23.

6.15. The guidelines for street trees in DPO23 do not require the canopy separation but rather provide measures to ensure they are not a fire risk in their own right and provide clear separation between the canopy and the ground. Guidelines for the management of the defendable space on public land would provide further clarity as to how this area is to be managed; including assurance that tree canopy separation is provided in this area. This could be provided within the approved development plan in the form of a landscape plan or a list of points similar to that provided in DPO23.

6.16. Beyond the defendable space setback required in the eastern and north-eastern section of the site there are no provisions in DPO23 for defendable space elsewhere. DPO23 does however include for the provision of a 20m wide vegetated buffer along Ballarto road and an adjacent parallel loop road (refer to Figure 1 of DPO23). The 2015 Bushfire Hazard assessment does not consider the vegetation along Ballarto Road to be a hazard however, depending on the type of vegetation a 20m wide strip of vegetation may require consideration from a bushfire risk perspective. Furthermore this 20m vegetated strip will need to ensure it allows for the provision of defendable space in the north–east corner of the site. Hence as DPO23 has two objectives for this area, consideration will be required as to how the bushfire risk is addressed; this may be detailed in the development plan and at the subdivision stage.

6.17. Along the southern border, there is no defendable space separation detailed as the adjacent land is managed as Settlers Run Golf Course. There is also a government road reserve along this boundary that is currently within the existing 860 Ballarto Road property fences and kept in a low fuel state by horse grazing. I have provided an update bushfire hazard site assessment map (Appendix 1) which details areas of the golf course that are not currently managed in a fuel reduced state; consideration should be given at the time of subdivision design to ensure adequate separation is provided from these areas. The proposed Concept Plan appears to generally provide open space next to the closest areas of classified vegetation, which is a suitable outcome.

6.18. It is also understood that the Government Road along the south of the site that is currently grazed pasture is identified as “Potential Off Road Trail O/S” in Council’s Equestrian Strategy (https://www.casey.vic.gov.au/arts-leisure/sport-leisure/paths-
6.19. Finally as the subject site is with a bushfire-prone area all residential lots will need to be provided with a BAL assessment to enable dwelling construction, not just lots covered by the BMO. Providing this assessment at the stage of the subdivision design ensures that proposed lots are provided with an appropriate BAL. If the BAL is included within the permit this also avoids shifting the burden to each future landowner to investigate bushfire risk and also provides assurance that the management of bushfire risk associated with the buffer strip along Ballarto Road, Settlers Run Golf Course and the unmade Government Road have been addressed at the subdivision design stage.

7. Issues raised in submissions

7.1. A local resident has raised concerns that there is a significant bushfire risk in the area and that evacuation measures have not been considered. The measures within the schedules to the BMO and the DPO adequately address the bushfire risk at this site. Any fire event in the area would be of local scale and whole-site evacuation measures are not required. It will be safe to stay within the subject land during periods of high fire risk and refuge from radiant heat during a fire event will be able to be sought within the development. Some residents with existing health complications, young children or the elderly may choose to leave the area; especially if susceptible to smoke and/or ambient heat from the associated weather.

8. Consideration of concept plan

8.1. I have been asked to comment on the indicative subdivision layout provided in Appendix 2. It is understood the subdivision layout adopts the 33m setback required as specified in DPO23. However as DPO23 requires some of this area to be defendable space and also a 20m wide vegetated buffer strip for Ballarto Road consideration will be necessary to ensure both objectives are achieved. This may be addressed through ensure the design of the buffer is in accordance with defendable space standards and suitable subdivision layout to ensure the provision of defendable space.

8.2. Similar considerations will need to be made along the length of the 20m wide buffer strip along Ballarto road. The provision for a loop road and 3m wide shared path would provide ample separation from the tree buffer if dense vegetation is provided. If the vegetation along this strip is not particularly dense a smaller setback could be appropriate.

8.3. To the south where the proposed residential land abuts the Government Road and then Settlers Run Golf Course, utilisation of the as an “Off Road Trail O/S” as identified in Council’s Equestrian Strategy (https://www.casey.vic.gov.au/arts-leisure/sport-leisure/paths-trails/equestrian) could be a useful strategy to ensure separation from any areas of unmanaged vegetation on the Golf Course. It is also
noted that much of this boundary is adjacent managed fairway or consists of future proposed open space and hence does not require such separation.

9. Planning Scheme Amendment VC132

9.1. Amendment VC132 to the Victorian Planning Provisions, gazetted on the 19th September 2017, resulted in a number of changes to bushfire related Clauses 13.05, 44.06, 52.47, 52.48 and 66. The bushfire related changes mostly relate to the structure of the Clause 44.06 and 52.47 but however, generally have minimal consequence in the application and intent of these Clauses.

9.2. While VC132 has occurred after the preparation of the proposed amendment at the subject site (i.e. C225) it does not have material consequence. The proposed DPO23 and BMO3 still operate in a manner consistent with the planning scheme following VC132. No change is necessary to proposed amendment due to VC132.

10. Summary

10.1. In summary the intent of the proposal to re-zone the land to facilitate residential development is consistent with the planning scheme’s intent to ensure the bushfire risk can be managed to an acceptable level. The measures within the proposed BMO3 and ESO23 provide the satisfactory measures to address the objectives of the planning scheme, including the BMO. I provide the following points to summarise items for further consideration:

i. Amendment to BMO3 to remove the reference to AS3959 in relation to the building standard

ii. Amendment to the defendable space vegetation standards for private lots requiring 2m tree canopy separation

iii. Detailed guidelines or a plan for the management of public defendable space (e.g. at Development Plan stage)

iv. Careful design of the north-eastern corner of the site to meet the objectives of providing a 20m buffer to Ballarto Road and also providing defendable space

v. Assessment to ensure the subdivision design provides for a suitable BAL for all proposed lots with consideration of the management of adjacent land (e.g. 20m buffer strip, government road reserve and Settlers Run Golf Course).
Finally, I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance that I regard as relevant have to my knowledge been withheld from the Panel.

Andrew Stephens,

Bushfire and Ecological Consultant
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References


Appendix 1. Maps
Bushfire Hazard Site Assessment
860 & 2/860 Ballarto Road, Botanic Ridge

Details
Mapping by Karen McGregor
Date: 13/10/2012

Disclaimer
Practical Ecology bears no responsibility for the accuracy and completeness of this information and any decisions or actions taken on the basis of the map. While information appears accurate at publication, nature and circumstances are constantly changing.

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Scale 1:4,000 (Page size A3)
Appendix 2. Concept Plan of Subdivision
### Appendix 3. Curriculum Vitae

<table>
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<tr>
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<th>Andrew Stephens</th>
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<tr>
<td><strong>Academic Qualifications:</strong></td>
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<tr>
<td>2014–ongoing</td>
<td>Master of Environment (Bushfire and Ecological Management and Planning), University of Melbourne</td>
</tr>
<tr>
<td>2013</td>
<td>Postgraduate Certificate in Bushfire Management and Planning, University of Melbourne</td>
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<tr>
<td>2010</td>
<td>Development and Building in Bushfire Prone Areas Short Course, University of Technology, Sydney</td>
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<td>2005–2006:</td>
<td>Graduate Diploma Humanities and Social Sciences, La Trobe University, Bundoora</td>
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<tr>
<td>2000–2002:</td>
<td>Bachelor of Science (Conservation Biology and Ecology), La Trobe University, Bundoora</td>
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<td>2012</td>
<td>Work Safely at Heights</td>
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<td>DPCD “Preparing and Assessing Applications Under the BMO” Course</td>
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<td>2012:</td>
<td>First Aid – Level 2</td>
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<td>2010:</td>
<td>DSE Vegetation Quality Assessment (VQA) Competency Check (updated 2011)</td>
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<td>2010:</td>
<td>Fleet Driver Safety, RACV Drive School</td>
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<td><strong>Professional Experience:</strong></td>
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<td>2005–2008:</td>
<td>Bush Regeneration and Land Management, sole trader</td>
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