

ATTACHMENT 5.3

Asset Protection Zone Calculator



ASSET PROTECTION ZONE MODELLING REPORT

For Site Located At: **Lot 1, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **6** (downslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **64** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **9.13** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **27** (IPA=15m, OPA=12m)

Rate of Fire Spread (km/h): **3.63** (Noble et al., 1980)

Fire Intensity (kW/m): **46899**

Transmissivity: **0.828** (Fuss and Hammins, 2002)

Flame Length (m): **26.6** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

Assessment Date: **21/2/2008**

Modelled By: **Maree Staight**



ASSET PROTECTION ZONE MODELLING REPORT

For Site Located At: **Lot 1, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (downslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **63** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.66** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **23** (IPA=13m, OPA=10m)

Rate of Fire Spread (km/h): **2.95** (Noble et al., 1980)

Fire Intensity (kW/m): **38129**

Transmissivity: **0.836** (Fuss and Hammins, 2002)

Flame Length (m): **22.19** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

Assessment Date: **21/2/2008**

Modelled By: **Maree Staight**



ASSET PROTECTION ZONE MODELLING REPORT

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1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **0** (level)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **62** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.21** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **20** (IPA=11m, OPA=9m)

Rate of Fire Spread (km/h): **2.4** (Noble et al., 1980)

Fire Intensity (kW/m): **31000**

Transmissivity: **0.844** (Fuss and Hammins, 2002)

Flame Length (m): **18.6** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

Assessment Date: **21/2/2008**

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Vegetation: **Forests**

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Fire Intensity (kW/m): **31000**

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Flame Length (m): **18.6** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

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Modelled By: **Maree Staight**



ASSET PROTECTION ZONE MODELLING REPORT

For Site Located At: **Lot 2, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (downslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **63** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.66** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **23** (IPA=13m, OPA=10m)

Rate of Fire Spread (km/h): **2.95** (Noble et al., 1980)

Fire Intensity (kW/m): **38129**

Transmissivity: **0.836** (Fuss and Hammins, 2002)

Flame Length (m): **22.19** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

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1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (downslope)

2. Program's Settings

Flame Width (m) : **100**

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For Site Located At: **Lot 2, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (upslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **65** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **6.22** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **17** (IPA=9m, OPA=8m)

Rate of Fire Spread (km/h): **1.95** (Noble et al., 1980)

Fire Intensity (kW/m): **25204**

Transmissivity: **0.851** (Fuss and Hammins, 2002)

Flame Length (m): **15.68** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

Assessment Date: **21/2/2008**

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For Site Located At: **Lot 2, Ivor Jones Drive, Wonboyn Lake**
Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (upslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **65** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **6.22** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **17** (IPA=9m, OPA=8m)

Rate of Fire Spread (km/h): **1.95** (Noble et al., 1980)

Fire Intensity (kW/m): **25204**

Transmissivity: **0.851** (Fuss and Hammins, 2002)

Flame Length (m): **15.68** (RFS PBP, 2001)

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For Site Located At: **Lot 3, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **0** (level)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **62** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.21** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **20** (IPA=11m, OPA=9m)

Rate of Fire Spread (km/h): **2.4** (Noble et al., 1980)

Fire Intensity (kW/m): **31000**

Transmissivity: **0.844** (Fuss and Hammins, 2002)

Flame Length (m): **18.6** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

Assessment Date: **21/2/2008**

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1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (downslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **63** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.66** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **23** (IPA=13m, OPA=10m)

Rate of Fire Spread (km/h): **2.95** (Noble et al., 1980)

Fire Intensity (kW/m): **38129**

Transmissivity: **0.836** (Fuss and Hammins, 2002)

Flame Length (m): **22.19** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

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1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **0** (level)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **62** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.21** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **20** (IPA=11m, OPA=9m)

Rate of Fire Spread (km/h): **2.4** (Noble et al., 1980)

Fire Intensity (kW/m): **31000**

Transmissivity: **0.844** (Fuss and Hammins, 2002)

Flame Length (m): **18.6** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

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For Site Located At: **Lot 3, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **6** (upslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **68** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **4.67** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **14** (IPA=8m, OPA=6m)

Rate of Fire Spread (km/h): **1.59** (Noble et al., 1980)

Fire Intensity (kW/m): **20491**

Transmissivity: **0.857** (Fuss and Hammins, 2002)

Flame Length (m): **13.31** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

Assessment Date: **21/2/2008**

Modelled By: **Maree Staight**



ASSET PROTECTION ZONE MODELLING REPORT

For Site Located At: **Lot 4, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **0** (level)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **62** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.21** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **20** (IPA=11m, OPA=9m)

Rate of Fire Spread (km/h): **2.4** (Noble et al., 1980)

Fire Intensity (kW/m): **31000**

Transmissivity: **0.844** (Fuss and Hammins, 2002)

Flame Length (m): **18.6** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

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For Site Located At: **Lot 4, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (downslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **63** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.66** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **23** (IPA=13m, OPA=10m)

Rate of Fire Spread (km/h): **2.95** (Noble et al., 1980)

Fire Intensity (kW/m): **38129**

Transmissivity: **0.836** (Fuss and Hammins, 2002)

Flame Length (m): **22.19** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

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Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **0** (level)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **62** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

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Relative Humidity (%): **25**

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1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (upslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **65** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

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Overall Fuel Load (t/ha): **25**

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Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **6.22** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **17** (IPA=9m, OPA=8m)

Rate of Fire Spread (km/h): **1.95** (Noble et al., 1980)

Fire Intensity (kW/m): **25204**

Transmissivity: **0.851** (Fuss and Hammins, 2002)

Flame Length (m): **15.68** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

Assessment Date: **21/2/2008**

Modelled By: **Maree Staight**



ASSET PROTECTION ZONE MODELLING REPORT

For Site Located At: **Lot 5, Ivor Jones Drive, Wonboyn Lake**

Created By: **RFS APZ Calculator**

1. User's Inputs

Development Purposes: **Residential Subdivision**

Local Government Area: **Bega Valley**

In Alpine Areas: **No**

Vegetation: **Forests**

Effective Slope (degree): **3** (downslope)

2. Program's Settings

Flame Width (m) : **100**

Flame Angle (degree): **63** (determined by the built-in algorithm)

Flame Temperature (K) : **1090**

Flame Emissivity: **0.95**

Surface Available Fuel Load (t/ha): **20**

Overall Fuel Load (t/ha): **25**

Fire Danger Index: **100** (Fire Weather Area: Far South Coast)

Relative Humidity (%): **25**

Ambient Temperature (K): **308**

Heat of Combustion (kJ/kg): **18600**

Elevation of Receiver (m): **8.66** (determined by the built-in algorithm)

3. Program Outputs

Asset Protection Zone (m): **23** (IPA=13m, OPA=10m)

Rate of Fire Spread (km/h): **2.95** (Noble et al., 1980)

Fire Intensity (kW/m): **38129**

Transmissivity: **0.836** (Fuss and Hammins, 2002)

Flame Length (m): **22.19** (RFS PBP, 2001)

Expected Radiant Heat Exposure (kW/m²): **29**

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