

# APPENDIX C2 – GUMSCRUB, TOOMUC, KENNEDY & DEEP CREEKS FLOOD EMERGENCY PLAN

## Overview of Flooding Consequences

*This Summary table is generated from Victorian Government data. The State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons access this information should make appropriate enquiries to assess the currency of the data.*

### Summary of Consequences in a 1% AEP (100yr ARI) flood around Pakenham Upper, Pakenham & Officer

Property					
<b>Properties</b>	<b>458</b>				
Residential	312				
Commercial	20				
Industrial	25				
Public Land	1				
Rural	100				
Community Infrastructure					
Retirement Villages	1	Cardinia Waters Retirement Village possible isolation risk from Racecourse Road			
Schools / Colleges	1	St Patricks Catholic Primary School			
Community Venues	3	Marketplace Shopping Centre underground carpark; Officer Public Hall; and Outlook Community Centre			
Essential Infrastructure					
Major Roads	7	Ballarto Rd, Cardinia; Ballarto Rd, Pakenham South; Princes Fwy at Gum Scrub Creek; Princes Hwy at Deep Creek; Princes Hwy at The Avenue; Princes Hwy at Gum Scrub Creek; and Racecourse Rd, Pakenham			
Major Rail	2	Pakenham and Regional Railway Line at Officer Station; Pakenham and Regional Railway Line at Pakenham Station's northern (Railway Avenue) platform			
Bus Routes	6	840; 925; 926; 927; 928; and 929			
Emergency Services	1	Toomuc Valley CFA Station possible access issue			
Sewerage Facilities	9	Pumping Stations			
Levees	10	Along Deep Creek, Northern Boundary Drain and McDonalds Drain			
Drainage Facilities	6	Retarding Basins			
Tourism / Recreation					
Sports Facilities	1	Pakenham & District Golf Club			
Government Boundaries					
Local Gov't Areas	1	Cardinia	CMA	1	Port Phillip & Westernport
Adjacent LGAs	0		CFA District	1	District 08
SES Unit Area	1	Pakenham	FRV District	0	

Table C2.1 – Consequence Summary of 1% AEP flood around Pakenham Upper, Pakenham & Officer

Pakenham Upper, Pakenham and Officer are located approximately 50km southeast of Melbourne in a mixed environment with residential, business & industrial areas as well as both old and newly established precincts. Pakenham is flanked by Toomuc Creek on its western edge and Deep Creek on its eastern edge. Flowing through the centre of town are Pakenham and Kennedy Creeks. Gum Scrub Creek flows through Officer. High Intensity, short duration rainfall events can cause flash flooding in and around Pakenham and Officer with Pakenham Creek generally the first watercourse to

flood, while prolonged rainfall may see Gum Scrub, Toomuc, Kennedy & Deep Creeks flood. The area sees moderate to slow water movement due to the mixed nature of gently undulating terrain and flatter areas. Flooding as a result may last for a number of days. See mapping in **Appendix F** for more insight into flooding in the area.

## Gauges and Warnings

Warnings are available for flooding expected along Gum Scrub Creek at Officer. Flood class levels for the Officer gauge are detailed in table C2.2 and are used in the issuing of a flood warning for Gum Scrub Creek catchment. Other level / flood gauges in Pakenham, Pakenham Upper and Officer are contained within table C2.3

Flood Warning Gauge	River / Creek Flood Class Level		
	Minor	Moderate	Major
Gum Scrub Creek at Princes Hwy, Officer	2.1m	2.6m	-

Table C2.2 – Gauges with established Flood Class Levels for Pakenham, Pakenham Upper and Officer

At these sites, the Bureau of Meteorology (the Bureau) in consultation with Melbourne Water will issue flood warnings if levels reach those classified above. This warning will be placed on the Bureau's website (<http://www.bom.gov.au/vic/warnings/index.shtml>). While Cardinia Shire Council monitors these warnings in times of high rainfall, there are no specific guidelines to advise how these situations should be responded to.

Gauges	Station No.	Location	Owner	Gauge Type	Melway Ref
Pakenham Upper	586201	70m Southwest of Shelton and Huxtable Roads Intersection, Pakenham Upper	Melbourne Water	Rain	Melway 313 G10
Gum Scrub Creek at Princes Hwy, Officer	228365A	At Princes Hwy Bridge, in the centre median strip, Officer	Melbourne Water	Stream Level & Rain	Melway 215 A4
Toomuc Creek at Princes Hwy, Pakenham West	228217C	At Princes Hwy Bridge, in the centre median strip, Pakenham	Melbourne Water	Stream Level	Melway 215 K4
Kennedy Creek at Kennedy Rd, Pakenham	228364A	West bank of the creek on Kennedy Road, Pakenham	Melbourne Water	Stream Level	Melway 317 G3
Deep Creek u/s of Princes Hwy, Pakenham East	228363A	West side of the creek 900m north of Princes Hwy	Melbourne Water	Stream Level	Melway 318 C5

Table C2.3 – Gauges within the Gum Scrub, Toomuc, Kennedy & Deep Creek catchments

These Gauges may provide some warning of expected flooding. See the Melbourne Water website for more information on these gauges: <http://www.melbournewater.com.au/waterdata/rainfallandriverleveldata/Pages/Rainfall-and-river-level-new.aspx>. It is advised that residents monitor the Bureau of Meteorology's website <http://www.bom.gov.au/> and the VicEmergency website <https://emergency.vic.gov.au/> for any thunderstorm, flood or severe weather warnings present for their area.

# Area Map of Flood Risk for Pakenham, Pakenham Upper and Officer

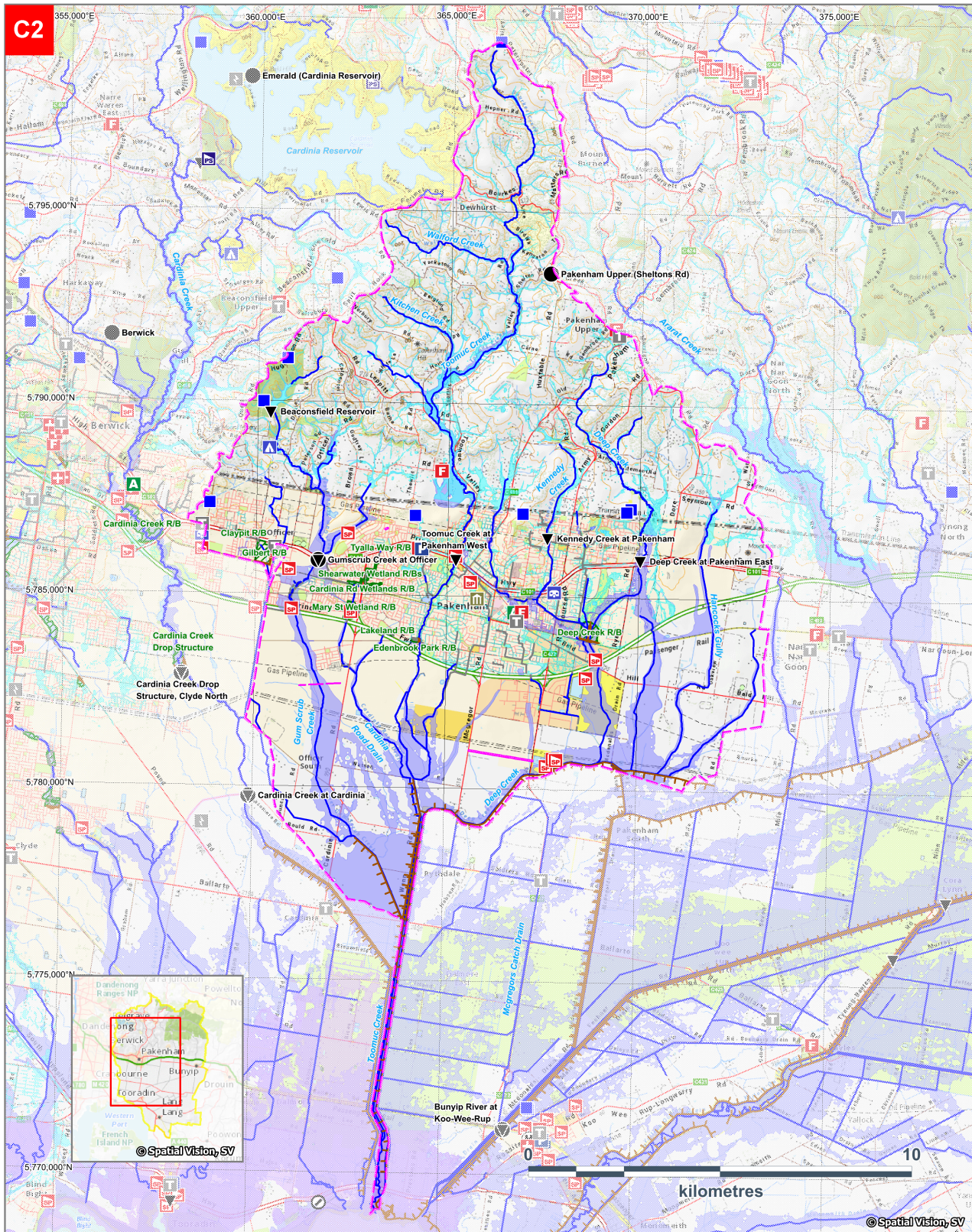


Figure C2 – Areas of flood risk around Pakenham Upper, Pakenham and Officer in Cardinia Shire

## Properties at Flood Risk

Properties listed in the table below are at risk from flooding around Pakenham. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Pakenham Township (Melbourne Water and Cardno, August 2020) flood mapping and risk assessment program. Note that any multi-lot properties situated above ground floor likely impacted by isolation only with flooding on ground floor impacting access to common areas and/or carpark and storage facilities. Information on above ground-floor properties is not available in this list.

*This Property Flood Risk Table is presented by the Victoria State Emergency Service for the purpose of disseminating emergency management information. The contents of the information have not been independently verified by the Victoria State Emergency Service. No liability is accepted for any damage, loss or injury caused by errors or omissions in this information or for any action taken by any person in reliance upon it.*

Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
	✓	✓	12 Acre Court	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	14 Acre Court	Pakenham	Eastern Drain D.S.	Flash
		✓	16 Acre Court	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	25 Adrian Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	27 Adrian Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	118 Ahern Road	Pakenham	Local Drainage	Flash
		✓	35 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
		✓	37 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
		✓	39 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
		✓	41 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
		✓	43 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	45 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
		✓	47 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
		✓	49 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	51 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
		✓	53 Arlington Avenue	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	164 Army Road	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	164 Army Road	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	245 Army Road	Pakenham	Kennedy Creek	Flash
	✓	✓	259 Army Road	Pakenham	Kennedy Creek	Flash
✓	✓	✓	130 Army Settlement Road	Pakenham	Deep Creek	Flash
		✓	5 Bald Hill Road	Pakenham	Local Drainage	Flash
✓	✓	✓	2/8 Bald Hill Road	Pakenham	Pakenham Creek D.S.	Flash
		✓	36 Barrington Drive	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	76 Barrington Drive	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	50 Bellbird Close	Pakenham	Kennedy Creek	Flash
	✓	✓	26 Ben Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	28 Ben Drive	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	85 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	87 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash

Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
✓	✓	✓	91 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	92 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	93 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	94 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	96 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	98 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	102 Blue Horizons Way	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	47 Bluehills Boulevard	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	49 Bluehills Boulevard	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	22 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
		✓	13/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
		✓	14/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
		✓	15/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
		✓	16/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
		✓	17/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
		✓	20/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
		✓	21/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	25/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	26/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	27/24 Bormar Drive	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	24 Brown Road	Pakenham	Toomuc Creek	Flash
✓	✓	✓	188 Brown Road	Pakenham	Quirks Creek	Flash
✓	✓	✓	224 Brown Road	Pakenham	Quirks Creek	Flash
✓	✓	✓	55 Cameron Way	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	56 Cameron Way	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	59 Cameron Way	Pakenham	Eastern Drain D.S.	Flash
		✓	61 Cameron Way	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	20 Campbell Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	36 Carne Road	Pakenham Upper	Deep Creek	Flash
		✓	6/2-4 Charles Street	Pakenham	Local Drainage	Flash
✓	✓	✓	2/8 Charles Street	Pakenham	Local Drainage	Flash
✓	✓	✓	3/8 Charles Street	Pakenham	Local Drainage	Flash
✓	✓	✓	10 Charles Street	Pakenham	Local Drainage	Flash
✓	✓	✓	12 Charles Street	Pakenham	Local Drainage	Flash
		✓	1/14 Charles Street	Pakenham	Local Drainage	Flash
✓	✓	✓	2/14 Charles Street	Pakenham	Local Drainage	Flash
		✓	3/14 Charles Street	Pakenham	Local Drainage	Flash
✓	✓	✓	9 Corymbia Promenade	Pakenham	Deep Creek	Flash
		✓	27 Corymbia Promenade	Pakenham	Deep Creek	Flash
	✓	✓	29 Corymbia Promenade	Pakenham	Deep Creek	Flash
✓	✓	✓	160 Deep Creek Road	Pakenham	Deep Creek	Flash
✓	✓	✓	1 Delphinium Road	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	3 Delphinium Road	Pakenham	McGregor Road D.S.	Flash

Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
✓	✓	✓	5 Delphinium Road	Pakenham	McGregor Road D.S.	Flash
		✓	45 Duncan Drive	Pakenham	Local Drainage	Flash
	✓	✓	76 Ebony Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	78 Ebony Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	82 Ebony Drive	Pakenham	Eastern Drain D.S.	Flash
		✓	84 Ebony Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	86 Ebony Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	88 Ebony Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	90 Ebony Drive	Pakenham	Eastern Drain D.S.	Flash
		✓	92 Ebony Drive	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	8 Fairway Court	Pakenham	Deep Creek	Riverine
✓	✓	✓	9 Fairway Court	Pakenham	Deep Creek	Riverine
✓	✓	✓	10 Fairway Court	Pakenham	Deep Creek	Riverine
✓	✓	✓	12 Fairway Court	Pakenham	Deep Creek	Riverine
	✓	✓	13 Fairway Court	Pakenham	Deep Creek	Riverine
	✓	✓	14 Fairway Court	Pakenham	Deep Creek	Riverine
	✓	✓	1 Gerard Court	Pakenham	Local Drainage	Flash
		✓	1 Heidi Court	Pakenham	Eastern Drain D.S.	Flash
		✓	2/15 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	3/15 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	4/15 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	5/15 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	6/15 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	7/15 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	8/15 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	9/15 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	17A Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/17 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/17 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	3/17 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	19 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	21 Henry Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	11 Holt Place	Pakenham	Local Drainage	Flash
✓	✓	✓	13 Holt Place	Pakenham	Local Drainage	Flash
✓	✓	✓	15 Holt Place	Pakenham	Local Drainage	Flash
✓	✓	✓	16 Holt Place	Pakenham	Local Drainage	Flash
		✓	18 Holt Place	Pakenham	Local Drainage	Flash
✓	✓	✓	16 Illawarra Way	Pakenham	Deep Creek	Flash
✓	✓	✓	18 Illawarra Way	Pakenham	Deep Creek	Flash
	✓	✓	9 Isaac Court	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	11 Isaac Court	Pakenham	Pakenham Creek D.S.	Flash
		✓	12 Isaac Court	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	14 Isaac Court	Pakenham	Pakenham Creek D.S.	Flash

**Properties at risk from Flooding in Pakenham**

Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
		✓	7/3 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	5 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	7 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	9 James Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	10 James Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	11 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/12 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/12 James Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	14 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	20 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	49 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	51 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/54 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/54 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	3-4/54 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	5/54 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	6/54 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	7/54 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	8/54 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	9/54 James Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/11 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/11 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	3/11 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	4/11 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/12 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/12 John Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	4/12 John Street	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	5/12 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	6/12 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	13 John Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	14 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/15 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/15 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	3/15 John Street	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	26 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/36-38 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	4/36-38 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	5/36-38 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	6/36-38 John Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	1/50-54 John Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	4 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	6 King Street	Pakenham	Pakenham Creek D.S.	Flash

Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
		✓	1/7-9 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/7-9 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	3/7-9 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	4/7-9 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	5/7-9 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	6/7-9 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	8/7-9 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	8 King Street	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	10 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/11-13 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/11-13 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	3/11-13 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	4/11-13 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	5/11-13 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	10/11-13 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	12 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	14 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/32-34 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/32-34 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	3/32-34 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	8/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	9/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	10/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	11/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	12/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	13/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	14/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	15/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	16/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	19/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	20/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	21/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	22/37 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	41 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	1/43 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/43 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	6/45 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	7/45 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	8/45 King Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	9/45 King Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	11 Kosta Boda Boulevard	Pakenham	Kennedy Creek	Flash
	✓	✓	40 Lakeside Boulevard	Pakenham	Toomuc Creek Drain	Flash
		✓	48 Leigh Drive	Pakenham	Eastern Drain D.S.	Flash



Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
		✓	50 Leigh Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	55 Leigh Drive	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	90 Leppitt Road	Pakenham	Toomuc Creek	Flash
✓	✓	✓	54 Meadowlea Crescent	Pakenham	Local Drainage	Flash
✓	✓	✓	56 Meadowlea Crescent	Pakenham	Local Drainage	Flash
✓	✓	✓	58 Meadowlea Crescent	Pakenham	Local Drainage	Flash
✓	✓	✓	60 Meadowlea Crescent	Pakenham	Local Drainage	Flash
	✓	✓	1A Meeking Drive	Pakenham	Local Drainage	Flash
		✓	7A Meeking Drive	Pakenham	Local Drainage	Flash
		✓	19 Mill Street	Pakenham	Toomuc Creek	Riverine
✓	✓	✓	355 Morrison Road	Pakenham Upper	Deep Creek	Flash
	✓	✓	125 Mount Ararat North Road	Nar Nar Goon North	Hancocks Gully	Flash
	✓	✓	15 Mount Shamrock Road	Pakenham	Pakenham Creek	Flash
✓	✓	✓	45 Mount Shamrock Road	Pakenham	Pakenham Creek	Flash
✓	✓	✓	95 Mount Shamrock Road	Pakenham	Kennedy Creek	Flash
		✓	6 Nicholas Court	Pakenham	Eastern Drain D.S.	Flash
		✓	120 Old Gembrook Road	Pakenham Upper	Deep Creek	Flash
✓	✓	✓	160 Old Gembrook Road	Pakenham Upper	Deep Creek	Flash
		✓	215 Pakenham Road	Pakenham	Pakenham Creek	Flash
		✓	225 Pakenham Road	Pakenham	Pakenham Creek	Flash
✓	✓	✓	245 Pakenham Road	Pakenham	Pakenham Creek	Flash
	✓	✓	265 Pakenham Road	Pakenham	Pakenham Creek	Flash
✓	✓	✓	275 Pakenham Road	Pakenham	Pakenham Creek	Flash
✓	✓	✓	315 Pakenham Road	Pakenham	Pakenham Creek	Flash
✓	✓	✓	415 Pakenham Road	Pakenham	Kennedy Creek	Flash
		✓	515 Pakenham Road	Pakenham Upper	Deep Creek	Flash
✓	✓	✓	534 Pakenham Road	Pakenham Upper	Deep Creek	Flash
✓	✓	✓	610 Pakenham Road	Pakenham Upper	Deep Creek	Flash
	✓	✓	3 Peter Court	Pakenham	Kennedy Creek	Flash
✓	✓	✓	2 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	6 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	16 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	18 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	20 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	21 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	29 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	32 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	35 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	46 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	52 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	1/54-58 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	6/54-58 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	7/54-58 Pommel Street	Pakenham	Eastern Drain D.S.	Flash

Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
		✓	8/54-58 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	60 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	62 Pommel Street	Pakenham	Eastern Drain D.S.	Flash
		✓	1A Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/2-6 Princes Highway	Pakenham	Kennedy Creek	Flash
		✓	2/2-6 Princes Highway	Pakenham	Kennedy Creek	Flash
		✓	1/3 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	5 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/7 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/7 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	3/7 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	4/7 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	5/7 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	1/9 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/9 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	3/9 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	4/9 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	5/9 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	2/65 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	67 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	69 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
		✓	71 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	73 Princes Highway	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	1/917 Princes Highway	Pakenham	Toomuc Creek	Riverine
	✓	✓	2/917 Princes Highway	Pakenham	Toomuc Creek	Riverine
	✓	✓	1/2-4 Purton Road	Pakenham	Toomuc Creek	Riverine
	✓	✓	2/2-4 Purton Road	Pakenham	Toomuc Creek	Riverine
	✓	✓	3/2-4 Purton Road	Pakenham	Toomuc Creek	Riverine
	✓	✓	4/2-4 Purton Road	Pakenham	Toomuc Creek	Riverine
	✓	✓	5/2-4 Purton Road	Pakenham	Toomuc Creek	Riverine
	✓	✓	6/2-4 Purton Road	Pakenham	Toomuc Creek	Riverine
	✓	✓	7/2-4 Purton Road	Pakenham	Toomuc Creek	Riverine
	✓	✓	6 Purton Road	Pakenham	Toomuc Creek	Riverine
		✓	1/8 Purton Road	Pakenham	Toomuc Creek	Riverine
		✓	2/8 Purton Road	Pakenham	Toomuc Creek	Riverine
✓	✓	✓	10-12 Purton Road	Pakenham	Toomuc Creek	Riverine
✓	✓	✓	14 Purton Road	Pakenham	Toomuc Creek	Riverine
		✓	4 Quinella Way	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	6 Quinella Way	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	20 Racecourse Road	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	36-40 Racecourse Road	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	65 Racecourse Road	Pakenham	Pakenham Creek D.S.	Flash
		✓	81 Racecourse Road	Pakenham	Pakenham Creek D.S.	Flash

Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
		✓	23 Redcherry Court	Pakenham	Kennedy Creek	Flash
	✓	✓	12 Rossi Close	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	13 Rossi Close	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	14 Rossi Close	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	15 Rossi Close	Pakenham	Eastern Drain D.S.	Flash
		✓	16 Rossi Close	Pakenham	Eastern Drain D.S.	Flash
		✓	18 Rossi Close	Pakenham	Eastern Drain D.S.	Flash
✓	✓	✓	2 Ryan Road	Pakenham	Deep Creek	Riverine
✓	✓	✓	14 Ryan Road	Pakenham	Deep Creek	Riverine
	✓	✓	19 Ryan Road	Pakenham	Deep Creek	Riverine
	✓	✓	26 Ryan Road	Pakenham	Deep Creek	Riverine
✓	✓	✓	30 Ryan Road	Pakenham	Deep Creek	Riverine
✓	✓	✓	36 Ryan Road	Pakenham	Deep Creek	Riverine
✓	✓	✓	40 Ryan Road	Pakenham	Deep Creek	Riverine
✓	✓	✓	46 Ryan Road	Pakenham	Deep Creek	Riverine
	✓	✓	52 Ryan Road	Pakenham	Deep Creek	Riverine
	✓	✓	60 Ryan Road	Pakenham	Deep Creek	Riverine
✓	✓	✓	70 Ryan Road	Pakenham	Deep Creek	Riverine
✓	✓	✓	15 Sandalwood Drive	Pakenham	Deep Creek South D.S.	Flash
✓	✓	✓	276 Seymour Road	Nar Nar Goon North	Hancocks Gully	Flash
		✓	325 Seymour Road	Nar Nar Goon North	Hancocks Gully	Flash
		✓	350 Seymour Road	Nar Nar Goon North	Hancocks Gully	Flash
✓	✓	✓	155 Shelton Road	Pakenham Upper	Toomuc Creek	Flash
	✓	✓	3 Simon Drive	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	5 Simon Drive	Pakenham	Pakenham Creek D.S.	Flash
		✓	13 Smethurst Avenue	Pakenham	McGregor Road D.S.	Flash
		✓	15 Smethurst Avenue	Pakenham	McGregor Road D.S.	Flash
		✓	1 Snodgrass Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	3 Snodgrass Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	5 Snodgrass Street	Pakenham	Pakenham Creek D.S.	Flash
		✓	4/13 Snodgrass Street	Pakenham	Pakenham Creek D.S.	Flash
	✓	✓	23 Snodgrass Street	Pakenham	Pakenham Creek D.S.	Flash
✓	✓	✓	3 Suzanne Court	Pakenham	Kennedy Creek	Flash
		✓	5 Suzanne Court	Pakenham	Kennedy Creek	Flash
	✓	✓	6 Suzanne Court	Pakenham	Kennedy Creek	Flash
	✓	✓	22 Templeton Crescent	Pakenham	Local Drainage	Flash
	✓	✓	23 Templeton Crescent	Pakenham	Local Drainage	Flash
	✓	✓	235 Thewlis Road	Pakenham	Quirks Creek	Flash
		✓	20 Toomuc Valley Road	Pakenham	Toomuc Creek	Riverine
✓	✓	✓	24 Toomuc Valley Road	Pakenham	Toomuc Creek	Riverine
✓	✓	✓	26 Toomuc Valley Road	Pakenham	Toomuc Creek	Riverine
	✓	✓	325 Toomuc Valley Road	Pakenham	Toomuc Creek	Flash
		✓	980 Toomuc Valley Road	Pakenham Upper	Toomuc Creek	Flash

Properties at risk from Flooding in Pakenham						
Residential			Commercial	Industrial	Rural	Public Use
Street No. at Risk in AEP Event			Address	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20% AEP	5% AEP	1% AEP				
	✓	✓	4/19 Torre Road	Pakenham	Local Drainage	Flash
	✓	✓	23 Torre Road	Pakenham	Local Drainage	Flash
	✓	✓	14 Versace Court	Pakenham	Kennedy Creek	Flash
		✓	16 Versace Court	Pakenham	Kennedy Creek	Flash
	✓	✓	13 Victoria Place	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	15 Victoria Place	Pakenham	Eastern Drain D.S.	Flash
		✓	18 Victoria Place	Pakenham	Eastern Drain D.S.	Flash
		✓	20 Victoria Place	Pakenham	Eastern Drain D.S.	Flash
		✓	24 Wakenshaw Crescent	Pakenham	McGregor Road D.S.	Flash
		✓	2/33 Wakenshaw Crescent	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	37 Wakenshaw Crescent	Pakenham	McGregor Road D.S.	Flash
		✓	39 Wakenshaw Crescent	Pakenham	McGregor Road D.S.	Flash
		✓	41 Wakenshaw Crescent	Pakenham	McGregor Road D.S.	Flash
✓	✓	✓	27 Willowbank Pocket	Pakenham	Local Drainage	Flash
	✓	✓	24 Windermere Boulevard	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	26 Windermere Boulevard	Pakenham	Eastern Drain D.S.	Flash
		✓	74 Windermere Boulevard	Pakenham	Eastern Drain D.S.	Flash
		✓	76 Windermere Boulevard	Pakenham	Eastern Drain D.S.	Flash
	✓	✓	78 Windermere Boulevard	Pakenham	Eastern Drain D.S.	Flash
<b>Totals</b>						
<b>87</b>	<b>185</b>	<b>350</b>				

Table C2.4 – Properties at risk of flooding around Pakenham Upper, Pakenham and Officer in Cardinia Shire

Properties listed in the table below are at risk from flooding along Gum Scrub Creek and the McDonalds Catchment Drain. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Gum Scrub Creek (Melbourne Water, December 1989) and the Koo Wee Rup Flood Study (Cardno, November 2014) flood mapping and risk assessment programs. Note that any multi-lot properties situated above ground floor likely impacted by isolation only with flooding on ground floor impacting access to common areas and/or carpark and storage facilities. Information on above ground-floor properties is not available in this list.

*This Property Flood Risk Table is presented by the Victoria State Emergency Service for the purpose of disseminating emergency management information. The contents of the information have not been independently verified by the Victoria State Emergency Service. No liability is accepted for any damage, loss or injury caused by errors or omissions in this information or for any action taken by any person in reliance upon it.*

Properties at risk from Flooding along Gum Scrub Creek and the McDonalds Catchment Drain during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
8	Anfield Court	Officer	Gum Scrub Creek	Riverine
9	Anfield Court	Officer	Gum Scrub Creek	Riverine
10	Anfield Court	Officer	Gum Scrub Creek	Riverine
11	Anfield Court	Officer	Gum Scrub Creek	Riverine
12	Anfield Court	Officer	Gum Scrub Creek	Riverine
13	Anfield Court	Officer	Gum Scrub Creek	Riverine
2525	Ballarto Road	Cardinia	Gum Scrub Creek	Riverine
2565	Ballarto Road	Cardinia	Gum Scrub Creek	Riverine
2571	Ballarto Road	Cardinia	Gum Scrub Creek	Riverine
2805	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
2855	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
2895	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
2900	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
3130	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
3155	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
3165	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
3170	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
3215	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
3245	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
3295	Ballarto Road	Pakenham South	McDonalds Catchment Drain	Riverine
8	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
19	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
12	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
14	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
15	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
16	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
17	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
18	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
20	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
22	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
24	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
26	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine

**Properties at risk from Flooding along Gum Scrub Creek and the McDonalds Catchment Drain during a 1% AEP event**

Properties at risk from Flooding along Gum Scrub Creek and the McDonalds Catchment Drain during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
28	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
30	Bellerive Avenue	Officer	Gum Scrub Creek	Riverine
590	Cardinia Road	Officer South	Gum Scrub Creek	Riverine
720	Cardinia Road	Officer South	Gum Scrub Creek	Riverine
112	Dickie Road	Officer	Haunted Gully	Riverine
70	Ellett Road	Pakenham South	McDonalds Catchment Drain	Riverine
209	Five Mile Road	Pakenham South	McDonalds Catchment Drain	Riverine
270	Five Mile Road	Pakenham South	McDonalds Catchment Drain	Riverine
275	Five Mile Road	Pakenham South	McDonalds Catchment Drain	Riverine
305	Five Mile Road	Pakenham South	McDonalds Catchment Drain	Riverine
310	Five Mile Road	Pakenham South	McDonalds Catchment Drain	Riverine
26	Georgetown Way	Officer	Gum Scrub Creek	Riverine
28	Georgetown Way	Officer	Gum Scrub Creek	Riverine
30	Georgetown Way	Officer	Gum Scrub Creek	Riverine
32	Georgetown Way	Officer	Gum Scrub Creek	Riverine
34	Georgetown Way	Officer	Gum Scrub Creek	Riverine
36	Georgetown Way	Officer	Gum Scrub Creek	Riverine
38	Georgetown Way	Officer	Gum Scrub Creek	Riverine
40	Georgetown Way	Officer	Gum Scrub Creek	Riverine
42	Georgetown Way	Officer	Gum Scrub Creek	Riverine
44	Georgetown Way	Officer	Gum Scrub Creek	Riverine
365	Hall Road	Pakenham South	McDonalds Catchment Drain	Riverine
520	Koo Wee Rup Road	Pakenham South	McDonalds Catchment Drain	Riverine
1	Madison Place	Officer	Gum Scrub Creek	Riverine
3	Madison Place	Officer	Gum Scrub Creek	Riverine
4	Madison Place	Officer	Gum Scrub Creek	Riverine
5	Madison Place	Officer	Gum Scrub Creek	Riverine
6	Madison Place	Officer	Gum Scrub Creek	Riverine
7	Madison Place	Officer	Gum Scrub Creek	Riverine
8	Madison Place	Officer	Gum Scrub Creek	Riverine
9	Madison Place	Officer	Gum Scrub Creek	Riverine
10	Madison Place	Officer	Gum Scrub Creek	Riverine
11	Madison Place	Officer	Gum Scrub Creek	Riverine
12	Madison Place	Officer	Gum Scrub Creek	Riverine
13	Madison Place	Officer	Gum Scrub Creek	Riverine
15	Madison Place	Officer	Gum Scrub Creek	Riverine
17	Madison Place	Officer	Gum Scrub Creek	Riverine
19	Madison Place	Officer	Gum Scrub Creek	Riverine
21	Madison Place	Officer	Gum Scrub Creek	Riverine
23	Madison Place	Officer	Gum Scrub Creek	Riverine
25	Madison Place	Officer	Gum Scrub Creek	Riverine
27	Madison Place	Officer	Gum Scrub Creek	Riverine
400	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine

Properties at risk from Flooding along Gum Scrub Creek and the McDonalds Catchment Drain during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
450	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
480	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
500	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
600	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
620	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
640	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
660	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
680	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
700	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
770	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
830	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
940	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
946	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
970	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
980	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
1020	McDonalds Drain Road	Pakenham South	McDonalds Catchment Drain	Riverine
52	52 Officer Road	Officer	Haunted Gully	Riverine
131	131 Officer Road	Officer	Gum Scrub Creek	Riverine
140	140 Officer Road	Officer	Gum Scrub Creek	Riverine
211	211 Officer Road	Officer	Gum Scrub Creek	Riverine
2	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
3	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
4	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
5	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
6	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
7	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
8	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
9	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
10	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
11	Old Trafford Way	Officer	Gum Scrub Creek	Riverine
125	Peck Road	Officer	Gum Scrub Creek	Riverine
6	Peterson Road	Officer	Gum Scrub Creek	Riverine
10	Soldiers Road	Pakenham South	McDonalds Catchment Drain	Riverine
<b>Total</b>				
<b>108</b>				

Table C2.5 – Properties at risk of flooding along Gum Scrub Creek and the McDonalds Catchment Drain in Cardinia Shire

## Isolation

No major isolation risks exist for Officer, Pakenham & Pakenham South. If access via Princes Freeway or Princes Hwy becomes closed for a period; routes via Pakenham Rd or Army Rd to the north may still remain passable. Pakenham Rd has the potential to become flooded at the Pakenham Creek Bridge. Some localised short-duration isolation may occur due to flash flooding during a 1% AEP (100yr ARI) event.

## Essential Infrastructure

- **The Metro & V/Line Railway Line** likely flooded east of Officer Station, Officer during a Moderate Flood Event (2.7m on the Officer Gauge, Gum Scrub Creek)
- **Toomuc Valley CFA Station** could have access cut to non 4X4 vehicles via Toomuc Valley Road & Brown Road from the east at 2.20m on the Pakenham West Gauge, Toomuc Creek
- **Pakenham Railway Station's Northern platform (Railway Ave side)** could become impacted by flooding, either restricting access by trains or pedestrians may also face access restrictions to the station via Railway Avenue during a 1% AEP flash flood event

During an event, see the Public Transport Victoria's Website for details on delays or alterations to services. <http://ptv.vic.gov.au/live-travel-updates/>. A map of Public Transport routes within Cardinia Shire is available via the website at: [https://www.ptv.vic.gov.au/assets/default-site/more/maps/Local-area-maps/Metropolitan/f8a4ef286e/8\\_Cardinia\\_LAM.pdf](https://www.ptv.vic.gov.au/assets/default-site/more/maps/Local-area-maps/Metropolitan/f8a4ef286e/8_Cardinia_LAM.pdf)

Apart from the roads outlined below, all other essential infrastructure and services areas around Officer, Pakenham & Pakenham South are expected to remain unaffected by flooding during a 1% AEP (100yr ARI) event.

## Road Closures

The following roads are subject to closure during flooding around Officer, Pakenham & Pakenham South. Check the VicRoads website for more details: <https://traffic.vicroads.vic.gov.au/>

Department of Transport (VicRoads) Roads flooded in a 1% AEP (100yr ARI) event
• Ballarto Road, Cardinia between Cardinia Road and Wenn Road
• Ballarto Road, Pakenham South between McDonalds Drain Road East and Fechner Road
• Pakenham Road, Pakenham Upper at Crosby Road
• Princes Freeway, Officer at Gum Scrub Creek crossing
• Princes Highway, Eastbound Lane at Deep Creek crossing, Pakenham
• Princes Highway Eastbound Lane between Deveney Street and The Avenue, Pakenham
• Princes Highway, Officer at Gum Scrub Creek crossing
• Racecourse Road, Pakenham between Cameron Way and the Railway Line

Table C2.6 – Department of Transport (VicRoads) Possible Road Closures during a flooding event



Cardinia Shire Council Roads flooded in a 1% AEP (100yr ARI) event			
<b>CARDINIA</b>	<b>PAKENHAM</b>	<ul style="list-style-type: none"> <li>Henry Road at Pinnacle Drive and at Henry Lawson Drive</li> </ul>	<ul style="list-style-type: none"> <li>Snodgrass Street</li> </ul>
<ul style="list-style-type: none"> <li>Fowler Road</li> </ul>	<ul style="list-style-type: none"> <li>Arlington Avenue</li> </ul>	<ul style="list-style-type: none"> <li>Holt Place</li> </ul>	<ul style="list-style-type: none"> <li>Templeton Crescent</li> </ul>
<ul style="list-style-type: none"> <li>Wenn Road</li> </ul>	<ul style="list-style-type: none"> <li>Ascot Court</li> </ul>	<ul style="list-style-type: none"> <li>Isaac Court</li> </ul>	<ul style="list-style-type: none"> <li>The Avenue</li> </ul>
<b>OFFICER</b>	<ul style="list-style-type: none"> <li>Barrington Drive</li> </ul>	<ul style="list-style-type: none"> <li>James Street</li> </ul>	<ul style="list-style-type: none"> <li>Toomuc Valley Road</li> </ul>
<ul style="list-style-type: none"> <li>Anfield Court</li> </ul>	<ul style="list-style-type: none"> <li>Belvedere Drive</li> </ul>	<ul style="list-style-type: none"> <li>Jason Lane</li> </ul>	<ul style="list-style-type: none"> <li>Wakenshaw Crescent</li> </ul>
<ul style="list-style-type: none"> <li>Arena Parade</li> </ul>	<ul style="list-style-type: none"> <li>Blue Horizons Way</li> </ul>	<ul style="list-style-type: none"> <li>John Street</li> </ul>	<b>PAKENHAM SOUTH</b>
<ul style="list-style-type: none"> <li>Bellerive Avenue</li> </ul>	<ul style="list-style-type: none"> <li>Brown Road</li> </ul>	<ul style="list-style-type: none"> <li>King Street</li> </ul>	<ul style="list-style-type: none"> <li>Ellett Road</li> </ul>
<ul style="list-style-type: none"> <li>Brown Road</li> </ul>	<ul style="list-style-type: none"> <li>Caitlin Drive</li> </ul>	<ul style="list-style-type: none"> <li>Leppitt Road</li> </ul>	<ul style="list-style-type: none"> <li>Five Mile Road</li> </ul>
<ul style="list-style-type: none"> <li>Georgetown Way</li> </ul>	<ul style="list-style-type: none"> <li>Cameron Way</li> </ul>	<ul style="list-style-type: none"> <li>Loz Court</li> </ul>	<ul style="list-style-type: none"> <li>Hall Road</li> </ul>
<ul style="list-style-type: none"> <li>Harold Street</li> </ul>	<ul style="list-style-type: none"> <li>Canty Lane</li> </ul>	<ul style="list-style-type: none"> <li>Manna Gum Drive</li> </ul>	<ul style="list-style-type: none"> <li>McDonalds Drain Road</li> </ul>
<ul style="list-style-type: none"> <li>Lecky Road</li> </ul>	<ul style="list-style-type: none"> <li>Charles Street</li> </ul>	<ul style="list-style-type: none"> <li>Mulcahy Road</li> </ul>	<ul style="list-style-type: none"> <li>Soldiers Road</li> </ul>
<ul style="list-style-type: none"> <li>Madison Place</li> </ul>	<ul style="list-style-type: none"> <li>Cyprus Place</li> </ul>	<ul style="list-style-type: none"> <li>Pommel Street</li> </ul>	<b>PAKENHAM UPPER</b>
<ul style="list-style-type: none"> <li>Officer Road</li> </ul>	<ul style="list-style-type: none"> <li>Deed Drive</li> </ul>	<ul style="list-style-type: none"> <li>Purton Road</li> </ul>	<ul style="list-style-type: none"> <li>Army Settlement Road</li> </ul>
<ul style="list-style-type: none"> <li>Old Trafford Way</li> </ul>	<ul style="list-style-type: none"> <li>Deep Creek Road at Princes Hwy</li> </ul>	<ul style="list-style-type: none"> <li>Railway Avenue</li> </ul>	<ul style="list-style-type: none"> <li>Berglund Road</li> </ul>
<b>OFFICER SOUTH</b>	<ul style="list-style-type: none"> <li>Delphinium Road</li> </ul>	<ul style="list-style-type: none"> <li>Ryan Road at Canty Lane</li> </ul>	<ul style="list-style-type: none"> <li>Crosby Road</li> </ul>
<ul style="list-style-type: none"> <li>Cardinia Road</li> </ul>	<ul style="list-style-type: none"> <li>Dunbarton Drive</li> </ul>	<ul style="list-style-type: none"> <li>Sandalwood Drive at Arden Avenue</li> </ul>	<ul style="list-style-type: none"> <li>Shelton Road</li> </ul>
<ul style="list-style-type: none"> <li>Patterson Road</li> </ul>	<ul style="list-style-type: none"> <li>Duncan Drive at Gardiner Street</li> </ul>	<ul style="list-style-type: none"> <li>Simon Drive</li> </ul>	<ul style="list-style-type: none"> <li>Toomuc Valley Road</li> </ul>
<ul style="list-style-type: none"> <li>Watson Road</li> </ul>	<ul style="list-style-type: none"> <li>Hein Road</li> </ul>	<ul style="list-style-type: none"> <li>Slattery Place</li> </ul>	

Table C2.7 – Cardinia Shire Council Possible flooded roads due to flash flooding over 30cm depth

## Flood Mitigation

### Retarding Basins

Melbourne Water Retarding Basin	On Drain/ Waterway	Area	Storage Capacity	Spillway Crest Level	Full Supply Level	Embankment Crest Level	ANCOLD Hazard Rating	Houses In Flow Path (dam breach)	Melway Reference
Cardinia Rd Wetlands	Cardinia Rd Drain, Officer	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	215 D6
Deep Creek	Deep Creek, Pakenham	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	317 J9
Edenbrook Park	Toomuc Creek, Pakenham	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	215 H10
Rix Road Wetland	Cardinia Rd Drain, Officer	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	215 C8
Shearwater Wetland	Cardinia Rd Drain, Pakenham	2.64 ha	16.9 ML	29.5m AHD	29.5m AHD	29.5m AHD	Very Low	0	215 E5
Tyalla Way	Cardinia Rd Drain, Pakenham	Unavailable	Unavailable	31.5m AHD	31.5m AHD	33.75m AHD	Very Low	0	215 E4

Table C2.8 – Melbourne Water Retarding Basins within the Gum Scrub, Pakenham, Kennedy & Deep Creek catchments in the Cardinia Shire

## Levees

Melbourne Water Levee	Reach	Side	Levee Height	Levee Length	Expected Level of Protection	ANCOLD Hazard Rating	Houses at risk behind Levee	Melway Reference
Deep Creek	Five Mile Rd to McDonalds Drain Rd	East	1m	2.7m	Unavailable	Very Low	Agricultural land flooded	526A5 - 6763 K10
Deep Creek	McDonalds Drain Rd to Pakenham KooWeeRup Rd	East	2m	2.2m	Unavailable	Very Low	Agricultural land flooded	6763 K10 - H10
Deep Creek	Pakenham KooWeeRup Rd to McGregor Rd	East	3m	2.4m	Unavailable	Low	3 houses, 1 Industrial building & agricultural land flooded	6763 H10 - F11
Toomuc / Deep Creek Outfall	Wenn Rd to Hagelthorns Drain	East	2m to 3m	3.9m	Unavailable	Low	2 houses & agricultural land flooded	6763 E12 - D15
Deep Creek	McGregor Rd to Railway Rd	East	3m	8.7m	Unavailable	Low	6 houses & agricultural land flooded	6763 F11 – 6822 D4
Northern Boundary Drain	Ararat Creek to Eight Mile Rd	South	2m	1.8m	Unavailable	Significant	3 houses, 7 industrial buildings & agricultural land flooded	526 D5 - 6764 G10
Northern Boundary Drain	Eight Mile Rd to Five Mile Rd	South	2m	4.5m	Unavailable	Low	3 houses, 1 industrial buildings & agricultural land flooded	6764 G10 - C11
Northern Boundary Drain	Five Mile Rd to McDonalds Drain Rd	South	2m	3.0m	Unavailable	Low	3 houses, 2 industrial buildings & agricultural land flooded	6764 C11 - 6763K11
McDonalds Drain	McDonalds Drain Rd to Bunyip Main Drain	East	3m	6.3m	Unavailable	Unavailable	Agricultural land & farm properties flooded	6763 K11 - 6822 J2
McDonalds Drain	McDonalds Drain Rd to Bunyip Main Drain	West	3m	6.4m	Unavailable	Unavailable	Agricultural land & farm properties flooded	6763 K11- 6822J2

Table C2.9 – Melbourne Water Levees in the Gum Scrub, Pakenham, Kennedy & Deep Creek catchments in Cardinia Shire

## Sewerage Infrastructure

Sewerage Infrastructure of note during a severe flood event located around Pakenham, Officer and Pakenham South is contained within the following two tables. It is possible there are some unsewered properties in these catchments.

### Sewer Pumping Stations

Sewerage Pumping Station	On Drain / Waterway	Bank / Side of Waterway	Operator	Location	Melway Reference
Bate Close	Deep Creek	West	South East Water	Bate Close, Pakenham	317 K11
Gum Scrub Creek	Gum Scrub Creek	West	South East Water	Princes Freeway at Gum Scrub Creek	214 J8
Kiama Street	Gum Scrub Creek	East	South East Water	Kiama Street, Officer	215 C3
Mary Street	Cardinia Road Drain	-	South East Water	Mary Street, Officer	215 C8
Officer South Road	Officer South Drain	-	South East Water	Princes Freeway on ramp at Officer South Road, Officer	214 G8
Pakenham Golf Course Effluent Reuse	Deep Creek	West	South East Water	Reservoir south of Princes Freeway at Deep Creek, Pakenham	317 J12
Siding Avenue	Gum Scrub Creek	West	South East Water	Siding Avenue, Officer	214 J5
Templeton Crescent	McGregor Road D.S.	-	South East Water	Templeton Crescent, Pakenham	317 A6
Toomuc Creek	Toomuc Creek	West	South East Water	Princes Highway at Toomuc Creek, Pakenham	215 K4

Table C2.10 – Sewer Pumping Stations around Pakenham, Officer and Pakenham South in Cardinia Shire

## Flood Impacts and Operational Considerations (Intelligence Cards)

The tables on the following pages provide a breakdown of the possible consequences of flooding in Pakenham, Pakenham Upper and Officer at various creek heights or rain totals. These tables are to be used only as a guide as no two floods at a location will have identical impacts.

Intelligence Cards have been included for the following locations:

- Gum Scrub Creek at Officer
- Toomuc Creek at Pakenham West
- Pakneham Creek in Pakenham
- Kennedy Creek at Pakenham
- Deep Creek at Pakenham East
- McDonalds Catchment Drain in Pakenham South

# FLOOD INTELLIGENCE CARD – OFFICER GAUGE, GUM SCRUB CREEK

Version 4 – March 2021



Note: flood intelligence records are approximations. This is because no two floods at a location, even if they peak at the same height, will have identical impacts. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Emergency Management Manuals flood series.

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LOCATION:	At Princes Hwy Bridge, in the centre median strip, Officer
CURRENT LEVEL:	<a href="https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228365A">https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228365A</a>
STREAM:	Gum Scrub Creek
GAUGE NUMBER:	228365A
GAUGE ZERO:	34.00m AHD
GAUGE TYPE:	Stream Level & Rain

MELWAY REFERENCE:	215 A4
MINOR:	2.1m
MODERATE:	2.6m
MAJOR:	Not Established
LEVEE HEIGHT:	Unavailable
HIGHEST RECORDED FLOOD:	2.68m (19 <sup>th</sup> September 1984)

Creek Height	Flood Class or Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
2.1m	MINOR FLOOD LEVEL		VICSES State and Region to provide warnings to the community and other agencies. VICSES will provide warnings using OSOM and SMSER as required based on the predications provided by BoM regarding flood levels and the risk of Flash Flooding. The Central Duty officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response arrangement to suit the level of incident.
2.6m	MODERATE FLOOD LEVEL		VICSES State and Region to provide warnings to the community and other agencies. VICSES will provide warnings using OSOM and SMSER as required based on the predications provided by BoM regarding flood levels and the risk of Flash Flooding. The Central Duty officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response arrangement to suit the level of incident.
2.66m	5 <sup>th</sup> February 2011 Flood Level Peak (Moderate)	<b>Event Summary</b> <ul style="list-style-type: none"> <li>Princes Hwy cut at Gum Scrub Creek</li> <li>Princes Fwy cut at Gum Scrub Creek</li> </ul>	VicRoads to consider lane closures and warning signs on freeway & highway  VICSES to respond to requests on case-by-case basis

Creek Height	Flood Class or Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
3.20m	1% AEP (100yr ARI) Flood Level (Moderate)	<ul style="list-style-type: none"> <li>The residential estate west of Cardinia Rd experienced flooding when overland flows were retarded north of the railway acting as a levee, causing a backup</li> <li>Note: It is not known at what level property and infrastructure contained below starts being flooded</li> </ul> <p><b>Properties at Flood Risk</b></p> <p><b>79 Properties in Total</b></p> <ul style="list-style-type: none"> <li>188 &amp; 224 Brown Road, Pakenham</li> <li>112 Dickie Road, Officer</li> <li>52, , 131, 140 &amp; 211 Officer Road, Officer</li> <li>125 Peck Road, Officer</li> <li>6 Peterson Road, Officer</li> <li>235 Thewlis Road, Pakenham</li> <li>2, 3, 4, 5, 6, 7, 8, 9, 10 &amp; 11 Old Trafford Way, Officer</li> <li>1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 17, 19, 21, 23, 25 &amp; 27 Madison Place, Officer</li> <li>3, 4, 5, 6, 7, 8, 9, 10, 11, 12 &amp; 13 Anfield Court, Officer</li> <li>8, 19, 12, 14, 15, 16, 17, 18, 20, 22, 24, 26, 28 &amp; 30 Bellerive Avenue, Officer</li> <li>26, 28, 30, 32, 34, 36, 38, 40, 42 &amp; 44 Georgetown Way, Officer</li> <li>590, 720 Cardinia Road, Officer South</li> <li>2525, 2565 &amp; 2571 Ballarto Road, Cardinia</li> </ul> <p><b>Community Infrastructure Likely Flooded</b></p> <ul style="list-style-type: none"> <li>Officer Public Hall on Tivendale Road, Officer</li> </ul> <p><b>Essential Infrastructure Impacted</b></p> <ul style="list-style-type: none"> <li>The Metro &amp; V/Line Railway Line likely flooded east of Officer Station, Officer</li> </ul> <p><b>Water Over Road (roads in red are Department of Transport owned roads)</b></p> <ul style="list-style-type: none"> <li>Officer Road, Officer near Peterson Road Intersections</li> <li>Brown Road, Officer at Gum Scrub Creek crossing</li> <li>Princes Highway, Officer at Gum Scrub Creek crossing</li> <li>Princes Freeway, Officer at Gum Scrub Creek crossing</li> <li>Arena Parade, Officer</li> <li>Madison Place, Officer</li> <li>Old Trafford Way, Officer</li> <li>Anfield Court, Officer</li> <li>Bellerive Avenue, Officer</li> <li>Georgetown Way, Officer</li> <li>Harold Street, Officer</li> <li>Lecky Road, Officer</li> <li>Cardinia Road, Officer South between Lecky Road and Patterson Road and between Wenn Road and Ballarto Road, Cardinia</li> <li>Watson Road, Officer South</li> <li>Patterson Road, Officer South near Cardinia Road</li> </ul>	<p>VICES to respond to requests on case-by-case basis</p> <p>Council to consider contacting CoM to ensure emergency preparedness plan enacted.</p> <p><b>PTV</b></p> <p>In any location that has more than 10 centimetres of water over tracks services will stop and operate either side of it. Track personnel will attend to see if the blockage can be cleared.</p> <p>Affected services would be terminated at shunting points either side of the flooding until deemed safe to resume by an attending operations office</p> <p>Latest train disruptions can be monitored through: <a href="https://www.ptv.vic.gov.au/live-travel-updates">https://www.ptv.vic.gov.au/live-travel-updates</a></p> <p>Council to provide road closure signage if required.</p>

Creek Height	Flood Class or Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Wenn Road, Cardinia</li> <li>• Fowler Road, Cardinia</li> <li>• Ballarto Road, Cardinia between Cardinia Road and Wenn Road</li> </ul>	

Table C2.11 – Breakdown of likely consequences at various Officer gauge level heights along Gum Scrub Creek with operational considerations

# FLOOD INTELLIGENCE CARD – PAKENHAM WEST GAUGE, TOOMUC CREEK

Version 3 – March 2021



*Note: flood intelligence records are approximations. This is because no two floods at a location, even if they peak at the same height, will have identical impacts. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Emergency Management Manuals flood series.*

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LOCATION:	At Princes Hwy Bridge, in the centre median strip, Pakenham
CURRENT LEVEL:	<a href="https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228217C">https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228217C</a>
STREAM:	Toomuc Creek
GAUGE NUMBER:	228217C
GAUGE ZERO:	41.12m AHD
GAUGE TYPE:	Stream Level

MELWAY REFERENCE:	215 K4
MINOR:	Not Established
MODERATE:	Not Established
MAJOR:	Not Established
LEVEE HEIGHT:	N/A
HIGHEST RECORDED FLOOD:	2.19m (5 <sup>th</sup> February 2011)

Creek Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
1.15m	20% AEP (5yr ARI) Flood Level	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>5 Properties in Total</b></p> <ul style="list-style-type: none"> <li>10-12 &amp; 14 Purton Road, Pakenham</li> <li>155 Shelton Road, Pakenham Upper</li> <li>24 &amp; 26 Toomuc Valley Road, Pakenham</li> </ul>	VICES to respond to requests on case-by-case basis
1.59m	5% AEP (20yr ARI) Flood Level	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>13 New at Level; 18 Properties in Total</b></p> <ul style="list-style-type: none"> <li>24 Brown Road, Pakenham</li> <li>90 Leppitt Road, Pakenham</li> <li>1/917 &amp; 2/917 Princes Highway, Pakenham</li> <li>Factories 1-7/2-4 Purton Road, Pakenham</li> <li>325 Toomuc Valley Road, Pakenham</li> </ul> <p><b>Water Over Road (over 30cm depth)</b></p> <ul style="list-style-type: none"> <li>Mulcahy Road, Pakenham</li> <li>Purton Road, Pakenham</li> </ul>	<p>VICES to respond to requests on case-by-case basis</p> <p>Council to provide road closure signage if required.</p>
2.11m	1% AEP (100yr ARI) Flood Level	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p>	VICES to respond to requests on case-by-case basis



Creek Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<p><b>4 New at Level; 23 Properties in Total</b></p> <ul style="list-style-type: none"> <li>• 19 Mill Street, Pakenham</li> <li>• 1/8 &amp; 2/8 Purton Road, Pakenham</li> <li>• 20 &amp; 980 Toomuc Valley Road, Pakenham</li> </ul> <p><b>Community Infrastructure Likely Flooded</b></p> <ul style="list-style-type: none"> <li>• Outlook Centre on Toomuc Valley Road, Pakenham</li> </ul> <p><b>Essential Infrastructure Likely Impacted</b></p> <ul style="list-style-type: none"> <li>• Toomuc Valley CFA Station could have access cut to non 4X4 vehicles via Toomuc Valley Rd &amp; Brown Rd from the east</li> </ul> <p><b>Water Over Road (over 30cm depth)</b></p> <ul style="list-style-type: none"> <li>• Berglund Road, Pakenham Upper</li> <li>• Brown Road at Toomuc Valley Road, Pakenham</li> <li>• Shelton Road, Pakenham Upper</li> <li>• Hein Road, Pakenham</li> <li>• Leppitt Road, Pakenham</li> <li>• Toomuc Valley Road, Pakenham at Outlook Centre</li> <li>• Watson Road, Officer South</li> </ul>	<p>Outlook Community Centre to implement emergency plan and contact SES for assistance if required.</p> <p>CFA monitor and keep IC informed of ability to continue service. CFA to consider the need to relocate services/resources.</p> <p>Council to provide road closure signage if required.</p>
2.19m	5 <sup>th</sup> February 2011 Flood Level Peak	<p><b>Event Summary</b></p> <p>Outlook Centre on Toomuc Valley Road, Pakenham flooded</p>	

Table C2.12 – Breakdown of likely consequences at various Pakenham West gauge level heights along Toomuc Creek with operational considerations

# FLOOD INTELLIGENCE CARD – STORMWATER DRAINAGE IN PAKENHAM AND NAR NAR GOON (UNGAUGED)

Version 3 – March 2021



Note: flood intelligence records are approximations. This is because no two floods at a location, even if they peak at the same height, will have identical impacts. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Emergency Management Manuals flood series.

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CLOSEST RAIN GAUGE:	<b>Officer</b>
LOCATION:	<b>At Princes Hwy Bridge, in the centre median strip, Officer</b>
RECENT RAINFALL:	<a href="https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228365A">https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228365A</a>

MELWAY REF:	<b>215 A4</b>
GAUGE NUMBER	<b>228365A</b>
GAUGE TYPE	<b>Rain</b>

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
11mm in 10 mins; 18mm in 30 mins; 23mm in 1 hour; 29mm in 2 hours; 34mm in 3 hours; or 43mm in 6 hours  Note: rainfall depths are a very rough method of estimating flood events and have been used due to the ungagged nature of the catchment. This should be used as a guide only.	20% AEP (5-year ARI)	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>54 Properties in Total</b></p> <p><b>Deep Creek South D.S.</b></p> <ul style="list-style-type: none"> <li>15 Sandalwood Drive, Pakenham</li> </ul> <p><b>Eastern Drain D.S.</b></p> <ul style="list-style-type: none"> <li>164 Army Road, Pakenham</li> <li>76 Barrington Drive, Pakenham</li> <li>55, 56 &amp; 59 Cameron Way, Pakenham</li> <li>2 &amp; 6 Pommel Street, Pakenham</li> <li>14 Rossi Close, Pakenham</li> </ul> <p><b>Handcocks Gully</b></p> <ul style="list-style-type: none"> <li>276 Seymour Road, Nar Nar Goon North</li> </ul> <p><b>Local Drainage</b></p> <ul style="list-style-type: none"> <li>2/8, 3/8, 10, 12 &amp; 2/14 Charles Street, Pakenham</li> <li>13, 15 &amp; 16 Holt Place, Pakenham</li> <li>54, 56, 58 &amp; 60 Meadowlea Crescent, Pakenham</li> <li>27 Willowbank Pocket, Pakenham</li> </ul> <p><b>McGregor Road D.S.</b></p> <ul style="list-style-type: none"> <li>85, 87, 91, 92, 93, 94, 96, 98 &amp; 102 Blue Horizons Way, Pakenham</li> <li>47 &amp; 49 Bluehills Boulevard, Pakenham</li> <li>1, 3 &amp; 5 Delphinium Road, Pakenham</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• 37 Wakenshaw Crescent, Pakenham</li> </ul> <p><b>Pakenham Creek D.S.</b></p> <ul style="list-style-type: none"> <li>• 2/8 Bald Hill Road, Pakenham</li> <li>• 22 &amp; 25/24 Bormar Drive, Pakenham</li> <li>• 20 Campbell Street, Pakenham</li> <li>• 5/12 &amp; 26 John Street, Pakenham</li> <li>• 10 King Street, Pakenham</li> <li>• 45 Mount Shamrock Road, Pakenham</li> <li>• 245, 275 &amp; 315 Pakenham Road, Pakenham</li> <li>• 69 &amp; 73 Princes Highway, Pakenham</li> <li>• 20, 36-40 &amp; 65 Racecourse Road, Pakenham</li> </ul> <p><b>Water Over Road (over 30cm depth)</b></p> <p><b>Pakenham Creek</b></p> <ul style="list-style-type: none"> <li>• Loz Court</li> </ul> <p><b>Local Drainage</b></p> <ul style="list-style-type: none"> <li>• Campbell Street</li> <li>• Holt Place</li> <li>• Simon Drive</li> <li>• Slattery Place</li> </ul> <p><b>McGregor Road D.S.</b></p> <ul style="list-style-type: none"> <li>• Blue Horizons Way</li> <li>• Delphinium Road</li> </ul> <p><b>Eastern Drain D.S.</b></p> <ul style="list-style-type: none"> <li>• Barrington Drive</li> <li>• Cameron Way</li> <li>• Dunbarton Drive</li> <li>• Pommel Street</li> </ul>	
<p>15mm in 10 mins; 25mm in 30 mins; 32mm in 1 hour; 40mm in 2 hours; 45mm in 3 hours; or 57mm in 6 hours</p> <p>Note: rainfall depths are a very rough method of estimating flood events and have been used due to the ungagged nature of the catchment. This should</p>	<p>5% AEP (20-year ARI)</p>	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>126 Properties in Total</b></p> <p><b>Deep Creek South D.S.</b></p> <ul style="list-style-type: none"> <li>• 15 Sandalwood Drive, Pakenham</li> </ul> <p><b>Eastern Drain D.S.</b></p> <ul style="list-style-type: none"> <li>• 12 &amp; 14 Acre Court, Pakenham</li> <li>• 25 &amp; 27 Adrian Drive, Pakenham</li> <li>• 164 Army Road, Pakenham</li> <li>• 76 Barrington Drive, Pakenham</li> <li>• 26 &amp; 28 Ben Drive, Pakenham</li> <li>• 55, 56 &amp; 59 Cameron Way, Pakenham</li> <li>• 76, 78, 82, 86, 88 &amp; 90 Ebony Drive, Pakenham</li> <li>• 55 Leigh Drive, Pakenham</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
be used as a guide only.		<ul style="list-style-type: none"> <li>• 2, 6, 16, 20, 21 &amp; 32 Pommel Street, Pakenham</li> <li>• 12, 13, 14 &amp; 15 Rossi Close, Pakenham</li> <li>• 13 &amp; 15 Victoria Place, Pakenham</li> <li>• 24, 26 &amp; 78 Windermere Boulevard, Pakenham</li> </ul> <p><b>Handcocks Gully</b></p> <ul style="list-style-type: none"> <li>• 125 Mount Ararat North Road, Nar Nar Goon North</li> <li>• 276 Seymour Road, Nar Nar Goon North</li> </ul> <p><b>Local Drainage</b></p> <ul style="list-style-type: none"> <li>• 118 Ahern Road, Pakenham</li> <li>• 2/8, 3/8, 10, 12 &amp; 2/14 Charles Street, Pakenham</li> <li>• 1 Gerard Court, Pakenham</li> <li>• 11, 13, 15 &amp; 16 Holt Place, Pakenham</li> <li>• 54, 56, 58 &amp; 60 Meadowlea Crescent, Pakenham</li> <li>• 1A Meeking Drive, Pakenham</li> <li>• 22 &amp; 23 Templeton Crescent, Pakenham</li> <li>• 4/19 &amp; 23 Torre Road, Pakenham</li> <li>• 27 Willowbank Pocket, Pakenham</li> </ul> <p><b>McGregor Road D.S.</b></p> <ul style="list-style-type: none"> <li>• 85, 87, 91, 92, 93, 94, 96, 98 &amp; 102 Blue Horizons Way, Pakenham</li> <li>• 47 &amp; 49 Bluehills Boulevard, Pakenham</li> <li>• 1, 3 &amp; 5 Delphinium Road, Pakenham</li> <li>• 37 Wakenshaw Crescent, Pakenham</li> </ul> <p><b>Pakenham Creek D.S.</b></p> <ul style="list-style-type: none"> <li>• 45 &amp; 51 Arlington Avenue, Pakenham</li> <li>• 2/8 Bald Hill Road, Pakenham</li> <li>• 22, 25/24, 26/24 &amp; 27/24 Bormar Drive, Pakenham</li> <li>• 20 Campbell Street, Pakenham</li> <li>• 5/15, 7/15, 8/15 &amp; 17A Henry Street, Pakenham</li> <li>• 9, 11 &amp; 14 Isaac Court, Pakenham</li> <li>• 10, 11 &amp; 14 James Street, Pakenham</li> <li>• 4/12, 5/12, 14, 26 &amp; 1/50-54 John Street, Pakenham</li> <li>• 4, 6, 4/7-9, 8, 10, 3/11-13, 12, 14, 10/37, 12/37, 16/37, 41 &amp; 1/43 King Street, Pakenham</li> <li>• 15 &amp; 45 Mount Shamrock Road, Pakenham</li> <li>• 245, 265, 275 &amp; 315 Pakenham Road, Pakenham</li> <li>• 5, 5/7, 69 &amp; 73 Princes Highway, Pakenham</li> <li>• 6 Quinella Way, Pakenham</li> <li>• 20, 36-40 &amp; 65 Racecourse Road, Pakenham</li> <li>• 3 &amp; 5 Simon Drive, Pakenham</li> <li>• 23 Snodgrass Street, Pakenham</li> </ul> <p><b>Toomuc Creek Drain</b></p> <ul style="list-style-type: none"> <li>• 40 Lakeside Boulevard, Pakenham</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<p><b>Water Over Road (over 30cm depth)</b></p> <p><b>Pakenham Creek</b></p> <ul style="list-style-type: none"> <li>• Jason Lane</li> <li>• King Street</li> <li>• Loz Court</li> </ul> <p><b>Local Drainage</b></p> <ul style="list-style-type: none"> <li>• Campbell Street</li> <li>• Deed Drive</li> <li>• Holt Place</li> <li>• Simon Drive</li> <li>• Slattery Place</li> </ul> <p><b>McGregor Road D.S.</b></p> <ul style="list-style-type: none"> <li>• Ascot Court</li> <li>• Blue Horizons Way</li> <li>• Delphinium Road</li> <li>• Duncan Drive at Gardiner Street</li> <li>• Templeton Crescent</li> <li>• Wakenshaw Crescent</li> </ul> <p><b>Eastern Drain D.S.</b></p> <ul style="list-style-type: none"> <li>• Barrington Drive</li> <li>• Cameron Way</li> <li>• Dunbarton Drive</li> <li>• Pommel Street</li> </ul>	
<p>21mm in 10 mins; 35mm in 30 mins; 42mm in 1 hour; 52mm in 2 hours; 58mm in 3 hours; or 75mm in 6 hours</p> <p>Note: rainfall depths are a very rough method of estimating flood events and have been used due to the ungagged nature of the catchment. This should be used as a guide only.</p>	<p>1% AEP (100-year ARI)</p>	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>277 Properties in Total</b></p> <p><b>Deep Creek South D.S.</b></p> <ul style="list-style-type: none"> <li>• 15 Sandalwood Drive, Pakenham</li> </ul> <p><b>Eastern Drain D.S.</b></p> <ul style="list-style-type: none"> <li>• 12, 14 &amp; 16 Acre Court, Pakenham</li> <li>• 25 &amp; 27 Adrian Drive, Pakenham</li> <li>• 164 Army Road, Pakenham</li> <li>• 36 &amp; 76 Barrington Drive, Pakenham</li> <li>• 26 &amp; 28 Ben Drive, Pakenham</li> <li>• 55, 56, 59 &amp; 61 Cameron Way, Pakenham</li> <li>• 76, 78, 82, 84, 86, 88, 90 &amp; 92 Ebony Drive, Pakenham</li> <li>• 1 Heidi Court, Pakenham</li> <li>• 48, 50 &amp; 55 Leigh Drive, Pakenham</li> <li>• 6 Nicholas Court, Pakenham</li> <li>• 2, 6, 16, 18, 20, 21, 29, 32, 35, 46, 52, 1/54-58, 6/54-58, 7/54-58, 8/54-58, 60 &amp; 62 Pommel Street, Pakenham</li> </ul>	<p>VICES State and Region to provide warnings to the community and other agencies.</p> <p>VICES will provide warnings using OSOM and SMSER as required based on the predications provided by BoM regarding flood levels and the risk of Flash Flooding. The Central Duty officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response arrangement to suit the level of incident.</p> <p>VICES to respond to requests on case-by-case basis</p> <p>DET to implement emergency plan if required</p>

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• 12, 13, 14, 15, 16 &amp; 18 Rossi Close, Pakenham</li> <li>• 13, 15, 18 &amp; 20 Victoria Place, Pakenham</li> <li>• 24, 26, 74, 76 &amp; 78 Windermere Boulevard, Pakenham</li> <li><b>Handcocks Gully</b></li> <li>• 125 Mount Ararat North Road, Nar Nar Goon North</li> <li>• 276, 325 &amp; 350 Seymour Road, Nar Nar Goon North</li> <li><b>Local Drainage</b></li> <li>• 118 Ahern Road, Pakenham</li> <li>• 5 Bald Hill Road, Pakenham</li> <li>• 6/2-4, 2/8, 3/8, 10, 12, 1/14, 2/14 &amp; 3/14 Charles Street, Pakenham</li> <li>• 45 Duncan Drive, Pakenham</li> <li>• 1 Gerard Court, Pakenham</li> <li>• 11, 13, 15, 16 &amp; 18 Holt Place, Pakenham</li> <li>• 54, 56, 58 &amp; 60 Meadowlea Crescent, Pakenham</li> <li>• 1A &amp; 7A Meeking Drive, Pakenham</li> <li>• 22 &amp; 23 Templeton Crescent, Pakenham</li> <li>• 4/19 &amp; 23 Torre Road, Pakenham</li> <li>• 27 Willowbank Pocket, Pakenham</li> <li><b>McGregor Road D.S.</b></li> <li>• 85, 87, 91, 92, 93, 94, 96, 98 &amp; 102 Blue Horizons Way, Pakenham</li> <li>• 47 &amp; 49 Bluehills Boulevard, Pakenham</li> <li>• 1, 3 &amp; 5 Delphinium Road, Pakenham</li> <li>• 13 &amp; 15 Smethurst Avenue, Pakenham</li> <li>• 24, 2/33, 37, 39 &amp; 41 Wakenshaw Crescent, Pakenham</li> <li><b>Pakenham Creek D.S.</b></li> <li>• 35, 37, 39, 41, 43, 45, 47, 49, 51 &amp; 53 Arlington Avenue, Pakenham</li> <li>• 2/8 Bald Hill Road, Pakenham</li> <li>• 22, 13/24, 14/24, 15/24, 16/24, 17/24, 20/24, 21/24, 25/24, 26/24 &amp; 27/24 Bormar Drive, Pakenham</li> <li>• 20 Campbell Street, Pakenham</li> <li>• 2/15, 3/15, 4/15, 5/15, 6/15, 7/15, 8/15, 9/15, 17A, 1/17, 2/17, 3/17, 19 &amp; 21 Henry Street, Pakenham</li> <li>• 9, 11, 12 &amp; 14 Isaac Court, Pakenham</li> <li>• 7/3, 5, 7, 9, 10, 11, 1/12, 2/12, 14, 20, 49, 51, 1/54, 2/54, 3-4/54, 5/54, 6/54, 7/54, 8/54 &amp; 9/54 James Street, Pakenham</li> <li>• 1/11, 2/11, 3/11, 4/11, 1/12, 2/12, 4/12, 5/12, 6/12, 13, 14, 1/15, 2/15, 3/15, 26, 1/36-38, 4/36-38, 5/36-38, 6/36-38 &amp; 1/50-54 John Street, Pakenham</li> <li>• 2, 4, 6, 1/7-9, 2/7-9, 3/7-9, 4/7-9, 5/7-9, 6/7-9, 8/7-9, 8, 10, Units 1-5/11-13, 10/11-13, 12, 14, Units 1-3/32-34, Units 8-16/37, Units 19-22/37, 41, 1/43, 2/43 &amp; Units 6-9/45 King Street, Pakenham</li> <li>• 15 &amp; 45 Mount Shamrock Road, Pakenham</li> <li>• 215, 225, 245, 265, 275 &amp; 315 Pakenham Road, Pakenham</li> <li>• 1A, 1/3, 5, 1/7, 2/7, 3/7, 4/7, 5/7, Units 1-5/9, 2/65, 67, 69, 71 &amp; 73 Princes Highway, Pakenham</li> </ul>	<p>Retirement Village to implement emergency plan if required</p> <p>PTV to implement emergency plan if required</p> <p>Council &amp; DoT to provide road closure signage if required.</p>

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• 4 &amp; 6 Quinella Way, Pakenham</li> <li>• 20, 36-40, 65 &amp; 81 Racecourse Road, Pakenham</li> <li>• 3 &amp; 5 Simon Drive, Pakenham</li> <li>• 1, 3, 5, 4/13 &amp; 23 Snodgrass Street, Pakenham</li> </ul> <p><b>Toomuc Creek Drain</b></p> <ul style="list-style-type: none"> <li>• 40 Lakeside Boulevard, Pakenham</li> </ul> <p><b>Community Infrastructure Likely Flooded</b></p> <ul style="list-style-type: none"> <li>• St Patricks Catholic Primary School on The Avenue, Pakenham may become flooded across the The Avenue Carpark. Access to School via The Avenue may become cut. Entrance via Princes Hwy expected to remain clear</li> <li>• Cardinia Waters Retirement Village on Racecourse Road, Pakenham may be isolated by floodwaters along Racecourse Road &amp; Azola Drive</li> <li>• Marketplace Shopping Centre underground carpark from John Street, Pakenham may become flooded</li> </ul> <p><b>Essential Infrastructure Likely Impacted</b></p> <ul style="list-style-type: none"> <li>• Pakenham Railway station could become impacted by flooding, either restricting access by trains to the northern (Railway Parade side) platform or by pedestrian access to the station via Railway Avenue and Slattery Place</li> </ul> <p><b>Water Over Road (over 30cm depth) (roads in red are Department of Transport owned roads)</b></p> <p><b>Pakenham Creek</b></p> <ul style="list-style-type: none"> <li>• Jason Lane</li> <li>• King Street</li> <li>• Loz Court</li> <li>• Princes Hwy eastbound lane between Deveney Street and The Avenue, Pakenham</li> <li>• Snodgrass Street</li> <li>• The Avenue</li> </ul> <p><b>Local Drainage</b></p> <ul style="list-style-type: none"> <li>• Arlington Avenue</li> <li>• Azola Drive</li> <li>• Belvedere Drive</li> <li>• Campbell Street</li> <li>• Charles Street</li> <li>• Cyprus Place</li> <li>• Deed Drive</li> <li>• Holt Place</li> <li>• Isaac Court</li> <li>• James Street</li> <li>• John Street</li> <li>• Railway Avenue</li> <li>• Simon Drive</li> <li>• Slattery Place</li> </ul> <p><b>McGregor Road D.S.</b></p>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Ascot Court</li> <li>• Blue Horizons Way</li> <li>• Delphinium Road</li> <li>• Duncan Drive at Gardiner Street</li> <li>• Henry Road at Pinnacle Drive and at Henry Lawson Drive</li> <li>• Templeton Crescent</li> <li>• Wakenshaw Crescent</li> <li><b>Eastern Drain D.S.</b></li> <li>• Barrington Drive</li> <li>• Cameron Way</li> <li>• Dunbarton Drive</li> <li>• Pommel Street</li> <li><b>Deep Creek South D.S.</b></li> <li>• Sandalwood Drive at Arden Avenue</li> </ul>	
203mm in 29 hours	5 <sup>th</sup> February 2011 Flood Event	<p><b>Event Summary</b></p> <ul style="list-style-type: none"> <li>• Princes Highway, Pakenham cut at 14:00 05/02/11 from Pakenham Creek to McDonalds Restaurant</li> <li>• Northern Lane of Princes Highway flooded acting as a levee east to Pakenham Creek. Depth of 0.6m alongside the Highway at 14:30 05/02/11</li> <li>• King St flooded behind the old Pakenham Racecourse &amp; Showgrounds (now residential estate). Area was flooded up to the northern side of the Pakenham Railway Line. Southern side was dry.</li> <li>• Beacon Hills College inundated by 0.5m water</li> <li>• Syme Rd flooded from Pakenham Creek</li> <li>• Leigh Drive flooded, affecting properties</li> <li>• Properties on Ebony Dr flooded as floodwaters travelled down from Leigh Drive and water backed up after hitting the Princes Highway.</li> <li>• Jarrah Ct &amp; Cobram Court flooded</li> <li>• Ryan Road &amp; Fairway Court flooded</li> <li>• Sir Thomas Street, Pommel Street &amp; Nicholas Court flooded</li> </ul>	

Table C2.13 – Breakdown of possible consequences at various rainfall intensities around Kennedy Creek in Pakenham with operational considerations



# FLOOD INTELLIGENCE CARD – PAKENHAM GAUGE, KENNEDY CREEK

Version 3 – March 2021



Note: flood intelligence records are approximations. This is because no two floods at a location, even if they peak at the same height, will have identical impacts. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Emergency Management Manuals flood series.

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LOCATION:	West bank of the creek on Kennedy Road, Pakenham
CURRENT LEVEL:	<a href="https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228364A">https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228364A</a>
STREAM:	Kennedy Creek
GAUGE NUMBER:	228364A
GAUGE ZERO:	44.986m AHD
GAUGE TYPE:	Stream Level

MELWAY REFERENCE:	317 F3
MINOR:	Not Established
MODERATE:	Not Established
MAJOR:	Not Established
LEVEE HEIGHT:	N/A
HIGHEST RECORDED FLOOD:	2.08m (18 <sup>th</sup> Sept 1984)

Creek Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
1.26m	20% AEP (5yr ARI) Flood Level	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>5 Property in Total</b></p> <ul style="list-style-type: none"> <li>• 245 Army Road, Pakenham</li> <li>• 50 Bellbird Close, Pakenham</li> <li>• 95 Mount Shamrock Road, Pakenham</li> <li>• 415 Pakenham Road, Pakenham</li> <li>• 3 Suzanne Court, Pakenham</li> </ul>	<p>VICSES State and Region to provide warnings to the community and other agencies.</p> <p>VICSES will provide warnings using OSOM and SMSER as required based on the predications provided by BoM regarding flood levels and the risk of Flash Flooding. The Central Duty officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response arrangement to suit the level of incident.</p> <p>VICSES to respond to requests on case-by-case basis</p>
1.70m	5% AEP (20yr ARI) Flood Level	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>10 Properties in Total</b></p> <ul style="list-style-type: none"> <li>• 245 &amp; 259 Army Road, Pakenham</li> <li>• 50 Bellbird Close, Pakenham</li> <li>• 11 Kosta Boda Boulevard, Pakenham</li> <li>• 95 Mount Shamrock Road, Pakenham</li> <li>• 415 Pakenham Road, Pakenham</li> <li>• 3 Peter Court, Pakenham</li> </ul>	<p>VICSES to respond to requests on case-by-case basis</p>

Creek Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>3 &amp; 6 Suzanne Court, Pakenham</li> <li>14 Versace Court, Pakenham</li> </ul> <p><b>Water Over Road (over 30cm depth)</b></p> <ul style="list-style-type: none"> <li>Caitlin Drive, Pakenham</li> </ul>	
1.78m	1% AEP (100yr ARI) Flood Level	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>15 Properties in Total</b></p> <ul style="list-style-type: none"> <li>245 &amp; 259 Army Road, Pakenham</li> <li>50 Bellbird Close, Pakenham</li> <li>11 Kosta Boda Boulevard, Pakenham</li> <li>95 Mount Shamrock Road, Pakenham</li> <li>415 Pakenham Road, Pakenham</li> <li>3 Peter Court, Pakenham</li> <li>1/2-6 &amp; 2/2-6 Princes Highway, Pakenham</li> <li>23 Redcherry Court, Pakenham</li> <li>3, 5 &amp; 6 Suzanne Court, Pakenham</li> <li>14 &amp; 16 Versace Court, Pakenham</li> </ul> <p><b>Community Infrastructure Likely Flooded</b></p> <ul style="list-style-type: none"> <li>Cardinia Waters Retirement Village may be isolated by floodwaters along Racecourse Road &amp; Neverland Boulevard</li> </ul> <p><b>Water Over Road (over 30cm depth) (roads in red are Department of Transport owned roads)</b></p> <ul style="list-style-type: none"> <li>Caitlin Drive, Pakenham</li> <li>Central Avenue, Pakenham</li> <li>Manna Gum Drive, Pakenham</li> <li><b>Racecourse Road between Cameron Way and Railway Line, Pakenham</b></li> </ul>	<p>VICSES to respond to requests on case-by-case basis</p> <p>Retirement Village to implement emergency plan if required</p> <p>Council to provide road closure signage if required.</p>
1.85m	5 <sup>th</sup> February 2011 Flood Level Peak	<p><b>Event Summary</b></p> <ul style="list-style-type: none"> <li>Corner of Cameron Way &amp; Barrington Dr flooded</li> <li>Isaac Court flooded</li> <li>Racecourse Road flooded</li> <li>Tipperary Circuit flooded alongside Kennedy Creek</li> <li>Corner of Natanya Drive &amp; Ayesha Rise flooded</li> </ul>	

Table C2.14 – Breakdown of likely consequences at various Pakenham East gauge level heights along Deep Creek with operational considerations

# FLOOD INTELLIGENCE CARD – PAKENHAM EAST GAUGE, DEEP CREEK

Version 3 – March 2021



Note: flood intelligence records are approximations. This is because no two floods at a location, even if they peak at the same height, will have identical impacts. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Emergency Management Manuals flood series.

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LOCATION:	West side of the creek 900m north of Princes Hwy
CURRENT LEVEL:	<a href="https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228363A">https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228363A</a>
STREAM:	Deep Creek
GAUGE NUMBER:	228363A
GAUGE ZERO:	40.40m AHD
GAUGE TYPE:	Stream Level

MELWAY REFERENCE:	318 C5
MINOR:	Not Established
MODERATE:	Not Established
MAJOR:	Not Established
LEVEE HEIGHT:	2.8m
HIGHEST RECORDED FLOOD:	2.35m (5 <sup>th</sup> February 2011)

Creek Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
2.35m	5 <sup>th</sup> February 2011 Flood Level Peak	<b>Event Summary</b> <ul style="list-style-type: none"> <li>Intersection of Pakenham Rd &amp; Crosby Rd, Pakenham Upper flooded</li> </ul>	
2.52m	20% AEP (5yr ARI) Flood Level	<b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b> <b>20 Properties in Total</b> <ul style="list-style-type: none"> <li>130 Army Settlement Road, Pakenham</li> <li>9 Corymbia Promenade, Pakenham</li> <li>160 Deep Creek Road, Pakenham</li> <li>8, 9, 10, &amp; 12 Fairway Court, Pakenham</li> <li>16 &amp; 18 Illawarra Way, Pakenham</li> <li>355 Morrison Road, Pakenham Upper</li> <li>160 Old Gembrook Road, Pakenham Upper</li> <li>534 &amp; 610 Pakenham Road, Pakenham Upper</li> <li>2, 14, 30, 36, 40, 46 &amp; 70 Ryan Road, Pakenham</li> </ul> <b>Water Over Road (over 30cm depth)</b> <ul style="list-style-type: none"> <li>Intersection of Pakenham Road and Crosby Road, Pakenham Upper</li> <li>Canty Lane, Pakenham</li> </ul>	VICSES State and Region to provide warnings to the community and other agencies. VICSES will provide warnings using OSOM and SMSER as required based on the predications provided by BoM regarding flood levels and the risk of Flash Flooding. The Central Duty officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response arrangement to suit the level of incident.  Council & DoT to provide road closure signage if required.
2.60m		<b>Water Over Road (over 30cm depth) (Roads in red are Department of Transport owned roads)</b> <ul style="list-style-type: none"> <li>Princes Hwy eastbound lanes at Deep Creek crossing, Pakenham</li> </ul>	DoT to monitor Highway and road conditions and close lanes if required

Creek Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
2.80m		<ul style="list-style-type: none"> <li>Levee Bank at Canty Lane, Pakenham South (Melway 318B7) overtopped</li> </ul>	VICSES to respond to requests on case-by-case basis
3.07m	5% AEP (20yr ARI) Flood Level	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>27 Properties in Total</b></p> <ul style="list-style-type: none"> <li>130 Army Settlement Road, Pakenham</li> <li>9 &amp; 29 Corymbia Promenade, Pakenham</li> <li>160 Deep Creek Road, Pakenham</li> <li>8, 9, 10, 12, 13 &amp; 14 Fairway Court, Pakenham</li> <li>16 &amp; 18 Illawarra Way, Pakenham</li> <li>355 Morrison Road, Pakenham Upper</li> <li>160 Old Gembrook Road, Pakenham Upper</li> <li>534 &amp; 610 Pakenham Road, Pakenham Upper</li> <li>2, 14, 19, 26, 30, 36, 40, 46, 52, 60 &amp; 70 Ryan Road, Pakenham</li> </ul> <p><b>Water Over Road (over 30cm depth) (Roads in red are Department of Transport owned roads)</b></p> <ul style="list-style-type: none"> <li><b>Pakenham Road, Pakenham Upper at Crosby Road</b></li> </ul>	VICSES to respond to requests on case-by-case basis
3.21m	1% AEP (100yr ARI) Flood Level	<p><b>Properties at Flood Risk (flooding at building likely and flood depth in yard over 30cm depth) (information on over-floor flooding unavailable)</b></p> <p><b>31 Properties in Total</b></p> <ul style="list-style-type: none"> <li>130 Army Settlement Road, Pakenham</li> <li>36 Carne Road, Pakenham Upper</li> <li>9, 27 &amp; 29 Corymbia Promenade, Pakenham</li> <li>160 Deep Creek Road, Pakenham</li> <li>8, 9, 10, 12, 13 &amp; 14 Fairway Court, Pakenham</li> <li>16 &amp; 18 Illawarra Way, Pakenham</li> <li>355 Morrison Road, Pakenham Upper</li> <li>120, 160 Old Gembrook Road, Pakenham Upper</li> <li>515, 534 &amp; 610 Pakenham Road, Pakenham Upper</li> <li>2, 14, 19, 26, 30, 36, 40, 46, 52, 60 &amp; 70 Ryan Road, Pakenham</li> </ul> <p><b>Community Infrastructure Likely Flooded</b></p> <ul style="list-style-type: none"> <li>Pakenham &amp; District Golf Club on Oaktree Drive, Pakenham</li> </ul> <p><b>Water Over Road (over 30cm depth)</b></p> <ul style="list-style-type: none"> <li>Deep Creek Road at Princes Hwy, Pakenham</li> <li>Ryan Road at Canty Lane, Pakenham</li> </ul>	<p>VICSES to respond to requests on case-by-case basis</p> <p>Council to provide road closure signage if required.</p>

Table C2.15 – Breakdown of likely consequences at various Pakenham East gauge level heights along Deep Creek with operational considerations

# FLOOD INTELLIGENCE CARD – McDONALDS CATCHMENT DRAIN, PAKENHAM SOUTH (UNGAUGED)

Version 3 – March 2021



Note: flood intelligence records are approximations. This is because no two floods at a location, even if they peak at the same height, will have identical impacts. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Emergency Management Manuals flood series.

This Flood Intelligence Card publication is presented by the Victoria State Emergency Service for the purpose of disseminating emergency management information. The contents of the information have not been independently verified by the Victoria State Emergency Service. No liability is accepted for any damage, loss or injury caused by errors or omissions in this information or for any action taken by any person in reliance upon it. **Scan the QR code for the current levels for this gauge.**

CLOSEST RAIN GAUGE:	<b>Bunyip River at Koo Wee Rup</b>
LOCATION:	<b>Along Bunyip Main Drain at Disused Railway Bridge 100m South of Station St, Koo Wee Rup</b>
RECENT RAINFALL:	<a href="https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228395A">https://www.melbournewater.com.au/water-data-and-education/rainfall-and-river-levels#/reader/228395A</a>

VICMAP REF:	<b>Central 6822 G4</b>
GAUGE NUMBER	<b>228395A</b>
GAUGE TYPE	<b>Rain</b>

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
41mm in 1 hour; 53mm in 2 hours; 62mm in 3 hours; 78mm in 6 hours; 100mm in 12 hours; or 128mm in 24 hours  Note: rainfall depths are a very rough method of estimating flood events and have been used due to the ungauged nature of the catchment. This should be used as a guide only.	1% AEP (100-year ARI)	<b>Properties at Flood Risk</b> <b>37 Properties in Total</b> <ul style="list-style-type: none"> <li>400, 450, 480, 500, 600, 620, 640, 660, 680, 700, 770, 830, 940, 946, 970, 980 &amp; 1020 McDonalds Drain Road, Pakenham South</li> <li>70 Ellett Road, Pakenham South</li> <li>10 Soldiers Road, Pakenham South</li> <li>520 Koo Wee Rup Road, Pakenham South</li> <li>2805, 2855, 2895, 2900, 3130, 3155, 3165, 3170, 3215, 3245 &amp; 3295 Ballarto Road, Pakenham South</li> <li>209, 270, 275, 305 &amp; 310 Five Mile Road, Pakenham South</li> <li>365 Hall Road, Pakenham South</li> </ul> <b>Water Over Road</b> <ul style="list-style-type: none"> <li>McDonalds Drain Road, Pakenham</li> <li>Hall Road, Pakenham South</li> <li>Ellett Road, Pakenham South</li> <li>Soldiers Road, Pakenham South</li> <li>Five Mile Road, Pakenham South</li> <li>Ballarto Road, Pakenham South between McDonalds Drain Road East and Fechner Road</li> </ul>	VICSES State and Region to provide warnings to the community and other agencies. VICSES will provide warnings using OSOM and SMSER as required based on the predications provided by BoM regarding flood levels and the risk of Flash Flooding. The Central Duty officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response arrangement to suit the level of incident. VICSES to respond to requests on case-by-case basis  Council to provide road closure signage if required.

Table C2.16 – Breakdown of possible consequences at various rainfall intensities around Pakenham South with operational considerations