



# Kingston Storm and Flood Emergency Plan

A Sub-Plan of the Municipal Emergency  
Management Plan

For City of Kingston Council  
And  
VICSES Units Chelsea and Moorabbin

Version 6 September 2017



---

# Table of Contents

<b>DISTRIBUTION LIST .....</b>	<b>V</b>
<b>DOCUMENT TRANSMITTAL FORM / AMENDMENT CERTIFICATE .....</b>	<b>VI</b>
<b>LIST OF ABBREVIATIONS &amp; ACRONYMS.....</b>	<b>VII</b>
<b>PART 1. INTRODUCTION .....</b>	<b>1</b>
1.1 MUNICIPAL ENDORSEMENT .....	1
1.2 THE MUNICIPALITY .....	2
1.3 PURPOSE AND SCOPE OF THIS FLOOD EMERGENCY PLAN .....	2
1.4 MUNICIPAL FLOOD PLANNING COMMITTEE (MFPC).....	2
1.5 RESPONSIBILITY FOR PLANNING, REVIEW & MAINTENANCE OF THIS PLAN.....	2
1.6 ENDORSEMENT OF THE PLAN.....	3
<b>PART 2. PREVENTION / PREPAREDNESS ARRANGEMENTS .....</b>	<b>4</b>
2.1 COMMUNITY AWARENESS FOR ALL TYPES OF FLOODING.....	4
2.2 STRUCTURAL FLOOD MITIGATION MEASURES .....	4
2.3 NON-STRUCTURAL FLOOD MITIGATION MEASURES.....	4
2.3.1 <i>Exercising the Plan</i> .....	4
2.3.2 <i>Flood Warning</i> .....	4
2.3.3 <i>Flood Wardens</i> .....	4
<b>PART 3. RESPONSE ARRANGEMENTS .....</b>	<b>5</b>
3.1 INTRODUCTION.....	5
3.1.1 <i>Activation of Response</i> .....	5
3.1.2 <i>Responsibilities</i> .....	5
3.1.3 <i>Municipal Emergency Coordination Centre (MECC)</i> .....	5
3.1.4 <i>Escalation</i> .....	5
3.2 STRATEGIC CONTROL PRIORITIES .....	6
3.3 COMMAND, CONTROL & COORDINATION .....	6
3.3.1 <i>Control</i> .....	6
3.3.2 <i>Incident Controller (IC)</i> .....	7
3.3.3 <i>Incident Control Centre (ICC)</i> .....	7
3.3.4 <i>Divisions and Sectors</i> .....	7
3.3.5 <i>Incident Management Team (IMT)</i> .....	7
3.3.6 <i>Emergency Management Team (EMT)</i> .....	7

3.3.7	<i>On Receipt of a Flood Watch / Severe Weather Warning</i> .....	8
3.3.8	<i>On Receipt of the First and Subsequent Flood Warnings</i> .....	8
3.4	COMMUNITY INFORMATION AND WARNINGS .....	9
3.5	MEDIA COMMUNICATION .....	10
3.6	RAPID IMPACT ASSESSMENT .....	10
3.7	PRELIMINARY DEPLOYMENTS .....	10
3.8	RESPONSE TO FLASH FLOODING .....	10
3.9	EVACUATION.....	11
3.10	FLOOD RESCUE .....	11
3.11	AIRCRAFT MANAGEMENT .....	11
3.12	RESUPPLY .....	12
3.13	ESSENTIAL COMMUNITY INFRASTRUCTURE AND PROPERTY PROTECTION .....	12
3.14	DISRUPTION TO SERVICES .....	12
3.15	ROAD CLOSURES.....	13
3.16	DAM FAILURE.....	13
3.17	WASTE WATER RELATED PUBLIC HEALTH ISSUES AND CRITICAL SEWERAGE ASSETS.....	13
3.18	AFTER ACTION REVIEW .....	13
<b>PART 4.</b>	<b>EMERGENCY RELIEF AND RECOVERY ARRANGEMENTS .....</b>	<b>14</b>
4.1	GENERAL.....	14
4.2	EMERGENCY RELIEF .....	14
4.3	ANIMAL WELFARE .....	14
4.4	TRANSITION FROM RESPONSE TO RECOVERY .....	14
<b>APPENDIX A - FLOOD THREATS FOR CITY OF KINGSTON .....</b>	<b>15</b>	
<b>APPENDIX B - TYPICAL FLOOD PEAK TRAVEL TIMES .....</b>	<b>26</b>	
<b>APPENDIX C1 – MOORABBIN MAIN DRAIN FLOOD EMERGENCY PLAN .....</b>	<b>27</b>	
<b>APPENDIX C2 – HEATHERTON MAIN DRAIN FLOOD EMERGENCY PLAN .....</b>	<b>36</b>	
<b>APPENDIX C3 – PARKERS ROAD MAIN DRAIN FLOOD EMERGENCY PLAN.....</b>	<b>67</b>	
<b>APPENDIX C4 – MORDIALLOC SETTLEMENT DRAIN FLOOD EMERGENCY PLAN .....</b>	<b>93</b>	
<b>APPENDIX C5 – MORDIALLOC CREEK, WATERWAYS &amp; DINGLEY DRAIN FLOOD EMERGENCY PLAN.....</b>	<b>117</b>	
<b>APPENDIX C6 – CENTRE SWAMP DRAIN FLOOD EMERGENCY PLAN.....</b>	<b>129</b>	
<b>APPENDIX C7 – PATTERSON LAKES FLOOD EMERGENCY PLAN .....</b>	<b>146</b>	
<b>APPENDIX D - FLOOD EVACUATION ARRANGEMENTS.....</b>	<b>165</b>	

---

<b>APPENDIX E - FLOOD WARNING SYSTEMS .....</b>	<b>168</b>
<b>APPENDIX F – MAPS.....</b>	<b>170</b>
CITY OF KINGSTON MUNICIPAL MAPS (SOURCED MELBOURNE WATER GIS) .....	171
FLOOD EXTENT MAPS (SOURCED MELBOURNE WATER GIS) .....	173
<b>APPENDIX G – CATCHMENT SCHEMATICS .....</b>	<b>191</b>



---

## Document Transmittal Form / Amendment Certificate

This Municipal Flood Emergency Plan (MFEP) will be amended, maintained and distributed as required by VICSES in consultation with City of Kingston.

Suggestions for amendments to this Plan should be forwarded to VICSES Regional Office Unit 6, 3-5 Gilda Court Mulgrave Vic 3170.

Amendments listed below have been included in this Plan and promulgated to all registered copyholders.

<b>Amendment Number</b>	<b>Date of Amendment</b>	<b>Amendment Entered By</b>	<b>Summary of Amendment</b>
1 <sup>st</sup> Draft			
Version 1	1/8/2011		Template Update
Version 2	20/8/2012		Maps and Command & Control Updated
Final Version	1/5/2013		Final Version
Version 4	07/07/2014	Ross Butler	Appendix A, B, C, F & G Updated
Version 5	28/10/2014	Ross Butler	Mapping Updated following Melb Water modelling revision
Version 6	Sept 2017	Ross Butler	Appendix A, B, C, F & G Updated

This Plan will be maintained on the City of Kingston Website as a sub plan of the MEMP.

---

## List of Abbreviations & Acronyms

The following abbreviations and acronyms are used in the Plan:

AEP	Annual Exceedance Probability
AHD	Australian Height Datum (the height of a location above mean sea level in metres)
AIIMS	Australasian Inter-service Incident Management System
AoCC	Area of Operations Control Centre / Command Centre
ARI	Average Recurrence Interval
ARMCANZ	Agricultural & Resource Management Council of Australia & New Zealand
AV	Ambulance Victoria
BoM	Bureau of Meteorology
CEO	Chief Executive Officer
CERM	Community Emergency Risk Management
CFA	Country Fire Authority
CMA	Catchment Management Authority
RERC	Regional Emergency Response Coordinator
RERCC	Regional Emergency Response Coordination Centre
DHHS	Department of Health and Human Services
DEDJTR	Department of Economic Development, Jobs, Transport and Resource
DoI	Department of Infrastructure
DELWP	Department of Environment, Land, Water and Planning
EMMV	Emergency Management Manual Victoria
EMT	Emergency Management Team
EO	Executive Officer
FO	Floodway Overlay
FWS	Flood Warning System
FZ	Floodway Zone
IC	Incident Controller
ICC	Incident Control Centre
IMT	Incident Management Team
IMS	Incident Management System
EMLO	Emergency Management Liaison Officer
LSIO	Land Subject to Inundation Overlay
MECC	Municipal Emergency Coordination Centre
MEMP	Municipal Emergency Management Plan
MEMPC	Municipal Emergency Management Planning Committee
MERC	Municipal Emergency Response Coordinator
MERO	Municipal Emergency Resource Officer
MFB	Metropolitan Fire and Emergency Services Board
MRM	Municipal Recovery Manager
PMF	Probable Maximum Flood
RCC	Regional Control Centre
RDO	Regional Duty Officer
SBO	Special Building Overlay
SCC	State Control Centre
SEWS	Standard Emergency Warning System
SHERP	State Health Emergency Response Plan
SOP	Standard Operating Procedure
VicPol	Victoria Police
VICSES	Victoria State Emergency Service

---

# Part 1. INTRODUCTION

## 1.1 Municipal Endorsement

This Municipal Flood Emergency Plan (MFEP) has been prepared by Kingston City Council and with the authority of the MEMPC pursuant to Section 20 of the Emergency Management Act 1986 (as amended).

This MFEP is a sub plan to the City of Kingston Municipal Emergency Management Plan (MEMP), is consistent with the Emergency Management Manual Victoria (EMMV) and the Victoria Flood Management Strategy (DNRE, 1998a), and takes into account the outcomes of the Community Emergency Risk Management (CERM) process undertaken by the Municipal Emergency Management Planning Committee (MEMPC).

The Municipal Flood Emergency Plan is consistent with the Regional Flood Emergency Plan and the State Flood Emergency Plan.

This Municipal Flood Emergency Plan is a result of the cooperative efforts of the City of Kingston Flood Planning Committee (MFPC) and its member agencies.

This Plan is endorsed by the City of Kingston MEMPC as a sub-plan to the MEMP.

### Endorsement

.....	
Peter Bain	Date
MERO – Kingston City Council	
.....	
Ray Jasper	Date
Regional Manager – VICSES Central Region	

---

## 1.2 The Municipality

An outline of City of Kingston in terms of its location, demography and other general matters is provided in the MEMP. An outline of the flood threat is provided in Appendix A of this Plan.

## 1.3 Purpose and Scope of this Flood Emergency Plan

The purpose of this MFEP is to detail arrangements agreed for the planning, preparedness/prevention, response and recovery from flood incidents within City of Kingston.

As such, the scope of the Plan is to:

- Identify the Flood Risk to City of Kingston;
- Support the implementation of measures to minimise the causes and impacts of flood incidents within City of Kingston;
- Detail Response and Recovery arrangements including preparedness, Incident Management, Command and Control;
- Identify linkages with Local, Regional and State emergency and wider planning arrangements with specific emphasis on those relevant to flood.

## 1.4 Municipal Flood Planning Committee (MFPC)

Membership of the City of Kingston Flood Planning Committee (MFPC) will comprise of the following representatives from the following agencies and organisations:

- VICSES (i.e. Unit Controller & Regional Officer – Emergency Management)
- City of Kingston,
- Victoria Police (i.e. Municipal Emergency Response Co-ordinator) (MERC),
- Catchment Management Authority,
- Department of Health (DH) as required,
- Department of Human Services (DHS) as required,
- Department of Sustainability and Environment (DSE) as required,
- Water Authorities as required,
- Bureau of Meteorology as required,
- Local community representatives and
- Other agencies as required

## 1.5 Responsibility for Planning, Review & Maintenance of this Plan

This Municipal Flood Emergency Plan must be maintained in order to remain effective.

VICSES through the Flood Planning Committee has responsibility for preparing, reviewing, maintaining and distributing this plan.

The MFPC will meet at least once per year.

The plans should be reviewed:

- Following any new flood study;
- Change in non-structural and/or structural flood mitigation measures;

- 
- After the occurrence of a significant flood event within the Municipality to review and where necessary amend arrangements and information contained in this Plan.

## **1.6 Endorsement of the Plan**

The MFEP will be circulated to MFPC members (if formed – else the MEMPC) to seeking acceptance of the draft plan.

Upon acceptance, the plan is forwarded to the MEMPC for endorsement with the recommendation to include the MFEP as a sub-plan of the MEMPlan.

---

## **Part 2. PREVENTION / PREPAREDNESS ARRANGEMENTS**

### **2.1 Community Awareness for all Types of Flooding**

Details of this MFEP will be released to the community through local media, the FloodSafe program, websites (VICSES and the Municipality) upon formal adoption by City of Kingston.

VICSES with the support of City of Kingston and Melbourne Water will coordinate community education programs for flooding within the council area. E.g. FloodSafe / StormSafe.

A Community Education Plan (CEP) to support this plan will be developed in conjunction with VICSES local Units. VICSES local units will lead the delivery of the CEP with support from Kingston City Council and VICSES Regions.

### **2.2 Structural Flood Mitigation Measures**

The following summary of structural flood mitigation measures exist within the Council area:

- Levees within the City of Kingston are:
  - Located along both sides of the Patterson River at a height of 6 metres Wells Road end and 4 metres at the bay end.
  - The Railway Line forms a levee from Mordialloc to Carrum at a height of 7 metres.
  - The Wells Road Levee at a height of 1.55 metres extends from Mordialloc to Patterson lakes.
- Retarding Basins within the City of Kingston are located in the suburbs of Moorabbin, Bonbeach, Clayton South, Heatherton, Highett, Mentone and Mordialloc.
- Flood gates are located at Patterson Lakes Inner Harbour Marina, Patterson Lakes Marina and the Patterson Lakes Whalers Cove Marina.

Refer to appendix C for detailed information of structural flood mitigation measures.

### **2.3 Non-structural Flood Mitigation Measures**

#### **2.3.1 Exercising the Plan**

Arrangements for exercising this Plan will be at the discretion of the MEMPC. This Plan should be regularly exercised, preferably on an annual basis. Refer to section 4.7 of the EMMV for guidance.

#### **2.3.2 Flood Warning**

Arrangements for flood warning are contained within the State Flood Emergency Plan and the EMMV (Part 3.7) and on the BoM website.

Specific details of local flood warning system arrangements are provided in appendix E.

#### **2.3.3 Flood Wardens**

Flood Wardens provide a means of gathering information in real time on flood behaviour along a stream system, and a network for the distribution of community information and warnings to the community along the stream system.

---

The following arrangements for Flood Wardens have been established:

No Flood wardens have been established in the City of Kingston.

## **Part 3. RESPONSE ARRANGEMENTS**

### **3.1 Introduction**

#### **3.1.1 Activation of Response**

Flood response arrangements may be activated by the Regional Duty Officer (RDO) VICSES Metro Region or Incident Controller.

The Incident Controller/RDO VICSES will activate agencies as required and documented in the State Flood Emergency Plan.

#### **3.1.2 Responsibilities**

There are a number of agencies with specific roles that will act in support of VICSES and provide support to the community in the event of a serious flood within City of Kingston. These agencies will be engaged through the EMT.

The general roles and responsibilities of supporting agencies are as agreed within the City of Kingston MEMP, EMMV (Part 7 'Emergency Management Agency Roles'), State Flood Emergency Plan and Regional Flood Emergency Plan.

#### **3.1.3 Municipal Emergency Coordination Centre (MECC)**

Liaison with the MECC will be through the established Division/Sector Command and through Municipal involvement in the Incident EMT, in particular the Municipal Emergency Response Coordinator (MERC). The VICSES RDO / ICC will liaise with the MECC directly if no Division/Sector Command is established.

The function, location, establishment and operation of the MECC will be as detailed in the City of Kingston MEMP.

#### **3.1.4 Escalation**

Most flood incidents are of local concern and an appropriate response can usually be coordinated using local resources. However, when these resources are exhausted, the State's arrangements provide for further resources to be made available, firstly from neighbouring Municipalities (on a regional basis) and then on a State-wide basis.

Resourcing and event escalation arrangements are described in the EMMV ('State Emergency Response Plan' – section 3.5).

---

## 3.2 Strategic Control Priorities

To provide guidance to the Incident Management Team (IMT), the following strategic control priorities shall form the basis of incident action planning processes:

1. Protection and preservation of life is paramount - this includes:
  - a. Safety of emergency services personnel, and;
  - b. Safety of community members including vulnerable community members and visitors/tourist located within the incident area.
2. Issuing of community information and community warnings detailing incident information that is timely, relevant and tailored to assist community members make informed decisions about their safety.;
3. Protection of critical infrastructure and community assets that supports community resilience;
4. Protection of residential property as a place of primary residence;
5. Protection of assets supporting individual livelihoods and economic production that supports individual and community financial sustainability
6. Protection of environmental and conservation values that considers the cultural, biodiversity, and social values of the environment;

Circumstances may arise where the Incident Controller is required to vary these priorities, with the exception being that the protection of life should remain the highest. This shall be done in consultation with the State Controller and relevant stakeholders based on sound incident predictions and risk assessments.

## 3.3 Command, Control & Coordination

The Command, Control and Coordination arrangements in this Municipal Flood Emergency Plan must be consistent with those detailed in State and Regional Flood Emergency Plans. For further information, refer to sections 3.4, 3.5 & 3.6 of the EMMV.

The specific details of the Command, Control and Coordination arrangements for this plan are to be provided in Appendix C.

### 3.3.1 Control

Functions 5(a) and 5(c) at Part 2 of *the Victoria State Emergency Service Act 1986 (as amended)* detail the authority for VICSES to plan for and respond to flood.

Part 7.1 of the EMMV prepared under the *Emergency Management Act 1986 (as amended)*, identifies VICSES as the Control Agency for flood. It identifies DSE as the Control Agency responsible for “*dam safety, water and sewerage asset related incidents*” and other emergencies

All flood response activities within City of Kingston including those arising from a dam failure or retarding basin / levee bank failure incident will therefore be under the control of the appointed Incident Controller, or his / her delegated representative.

---

### **3.3.2 Incident Controller (IC)**

An Incident Controller (IC) will be appointed by the VICSES (as the Control Agency) to command and control available resources in response to a flood event on the advice of the Bureau of Meteorology (or other reliable source) that a flood event will occur or is occurring. The Incident Controller responsibilities are as defined in Part 3.5 of the EMMV

### **3.3.3 Incident Control Centre (ICC)**

As required, the Incident Controller will establish an Incident Control Centre (ICC) from which to initiate incident response command and control functions. The decision as to if and when the ICC should be activated, rests with the Control Agency (i.e. VICSES).

Pre-determined Incident Control Centre locations are

- Mulgrave ICC
- Sunshine ICC

### **3.3.4 Divisions and Sectors**

To ensure that effective Command and Control are in place, the Incident Controller may establish Divisions and Sectors depending upon the complexity of the event and resource capacities.

The following Sectors may be established to assist with the management of flooding within the Municipality:

Chelsea Unit: Bonbeach Reserve Scotch Parade Bonbeach

Currently the following locations have been identified as possible Divisional Command Points for events within the City of Monash Municipality.

Knox SES      LHQ Lewis Road, Knox

Boronia CFA    300 Boronia Road, Boronia

Glen Eira SES   92 Bignell Road, Bentleigh East

Note: Another project is running concurrently that seeks to identify suitable locations in to the future for Division Command locations & Sector Command location points, which may see this location change.

### **3.3.5 Incident Management Team (IMT)**

The Incident Controller will form an Incident Management Team (IMT).

Refer to 3.5 of the EMMV for guidance on IMTs and Incident Management Systems (IMSs).

### **3.3.6 Emergency Management Team (EMT)**

The Incident Controller will establish a multi-agency Emergency Management Team (EMT) to assist the flood response. The EMT will consist of key personnel (with appropriate authority) from stakeholder agencies and relevant organisations who need to be informed of strategic issues related to incident control and who are able to provide high level strategic guidance and policy advice to the Incident Controller for consideration in developing incident management strategies.

---

Organisations, including City of Kingston, required within the EMT will provide an Emergency Management Liaison Officer (EMLO) to the ICC if and as required as well as other staff and / or resources identified as being necessary, within the capacity of the organisation.

Refer to 3.5 of the EMMV for guidance on EMTs.

### **3.3.7 On Receipt of a Flood Watch / Severe Weather Warning**

Incident Controller or VICSES RDO (until an incident controller is appointed) will undertake actions as defined within the flood intelligence cards (appendix C). General considerations by the Incident Controller/VICSES RDO will be as follows:

- Review flood intelligence to assess likely flood consequences
- Monitor weather and flood information – [www.bom.gov.au](http://www.bom.gov.au)
- Assess Command and Control requirements.
- Review local resources and consider needs for further resources regarding personnel, property protection, flood rescue and air support
- Notify and brief appropriate officers. This includes Regional Control Centre (RCC) (if established), State Control Centre (SCC) (if established), Council, other emergency services through the EMT.
- Assess ICC readiness (including staffing of IMT and EMT) and open if required
- Ensure flood bulletins and community information are prepared and issued to the community
- Monitor watercourses and undertake reconnaissance of low-lying areas
- Develop media and community information management strategy
- Ensure flood mitigation works are being checked by owners
- Develop and issue incident action plan, if required
- Develop and issue situation report, if required

### **3.3.8 On Receipt of the First and Subsequent Flood Warnings**

Incident Controller/VICSES RDO (until an incident controller is appointed) will undertake actions as defined within the flood intelligence cards (appendix C). General considerations by the Incident Controller/VICSES RDO will be as follows:

- Develop an appreciation of current flood levels and predicted levels. Are floodwaters, rising, peaking or falling?
- Review flood intelligence to assess likely flood consequences. Consider:
  - What areas may be at risk of inundation
  - What areas maybe at risk of isolation
  - What areas maybe at risk of indirect affects as a consequence of power, gas, water, telephone, sewerage, health, transport or emergency service infrastructure interruption
  - The characteristics of the populations at risk
- Determine what the at-risk community need to know and do as the flood develops.
- Warn the at-risk community including ensuring that an appropriate warning and community information strategy is implemented including details of:

- 
- The current flood situation
  - Flood predictions
  - What the consequences of predicted levels may be
  - Public safety advice
  - Who to contact for further information
  - Who to contact for emergency assistance
  - Liaise with relevant asset owners as appropriate (i.e. water and power utilities)
  - Implement response strategies as required based upon flood consequence assessment.
  - Continue to monitor the flood situation – [www.bom.gov.au/vic/flood/](http://www.bom.gov.au/vic/flood/)
  - Continue to conduct reconnaissance of low-lying areas

### **3.4 Community Information and Warnings**

Guidelines for the distribution of community information and warnings are contained in the State Flood Emergency Plan.

Community information and warnings communication methods available include:

- Emergency Alert;
- Phone messages (including SMS);
- Radio and Television;
- Two-way radio;
- Mobile and fixed public address systems;
- Sirens;
- Verbal Messages (i.e. Doorknocking);
- Agency Websites;
- VICSES Flood Storm Information Line;
- Variable Message Signs (i.e. road signs);
- Community meetings;
- Newspapers;
- Email;
- Telephone trees;
- Community Flood Wardens;
- Fax Stream;
- Newsletters;
- Letter drops;
- Social media and/or social networking sites (i.e. twitter and/or facebook).

Refer to Appendix C and E for the specific details of how community information and warnings are to be provided.

The release of flood bulletins and information with regard to response activities at the time of a flood event is the responsibility of VICSES, as the Control Agency.

---

Council has the responsibility to assist VICSES to warn individuals within the community including activation of flood warning systems, where they exist. Responsibility for public information, including media briefings, rest with VICSES as the Control Agency.

Other agencies such as CFA, DSE and VICPOL may be requested to assist VICSES with the communication of community flood warnings.

In cases where severe flash flooding is predicted, dam failure is likely or flooding necessitating evacuation of communities is predicted, the Incident Controller may consider the use of the Emergency Alert System and Standard Emergency Warning System (SEWS).

DH will coordinate information regarding public health and safety precautions.

### **3.5 Media Communication**

The Incident Controller through the Information Unit established at the ICC will manage Media communication. If the ICC is not established the RDO will manage all media communication.

### **3.6 Rapid impact assessment**

A rapid impact assessment can be conducted in accordance with part 3 of the EMMV to assess and record the extent and nature of damage caused by flooding. This information may then be used to provide the basis for further needs assessment and recovery planning by DHS and recovery agencies.

### **3.7 Preliminary Deployments**

When flooding is expected to be severe enough to cut access to towns, suburbs and/or communities the Incident Controller will consult with relevant agencies to ensure that resources are in place if required to provide emergency response. These resources might include emergency service personnel, food items and non-food items such as medical supplies, shelter, assembly areas, relief centres etc.

### **3.8 Response to Flash Flooding**

Emergency management response to flash flooding should be consistent with the guideline for the emergency management of flash flooding contained within the State Flood Emergency Plan.

When conducting pre-event planning for flash floods the following steps should be followed, and in the order as given:

1. Determine if there are barriers to evacuation by considering warning time, safe routes, resources available and etc;
2. If evacuation is possible, then evacuation should be the adopted strategy and it must be supported by a public information capability and a rescue contingency plan;
3. Where its is likely people will become trapped by floodwaters due to limited evacuation options safety advice needs to be provided to people at risk advising them not to attempt to flee by entering floodwater if they become trapped, and that it may be safer to seek the highest point within the building and to telephone 000 if they require rescue. This advice needs to be provided even when evacuation may be possible, due the likelihood that not all community members will evacuate.
4. For buildings known to be structurally un-suitable an earlier evacuation trigger will need to be established (return to step 1 of this cycle).

- 
5. If an earlier evacuation is not possible then specific preparations must be made to rescue occupants trapped in structurally unsuitable buildings either pre-emptively or as those people call for help.

During a flash flood it will often be difficult, due the rapid development of flooding, to establish evacuation (relief) centres ahead of actually triggering the evacuation as is normal practice but this is insufficient justification for not adopting evacuation.

Refer to appendix C for response arrangements for flash flood events. Refer VicRoads Website for road closures <http://alerts.vicroads.vic.gov.au>

### **3.9 Evacuation**

The decision to recommend or warn people to prepare to evacuate or to evacuate immediately rests with the Incident Controller.

Once the decision is made VicPol are responsible for the management of the evacuation process where possible. VICSES and other agencies will assist where practical. VICSES is responsible for the development and communication of evacuation warnings.

VicPol and/or Australian Red Cross may take on the responsibility of registering people affected by a flood emergency including those who have been evacuated.

Refer to section 3.8 of the EMMV and the Evacuation Guidelines for guidance of evacuations for flood emergencies.

Refer to Appendix C of this Plan for detailed evacuation arrangements for City of Kingston.

### **3.10 Flood Rescue**

VicPol as the designated Control Agency for water rescue, coordinates rescues undertaken during flood events.

In order to activate water rescue services, VicSES as a Control Agency for overall flood response, will identify areas at risk of requiring rescue and notify the Officer in Charge of the Water Police Search and Rescue Squad to request pre-deployment of rescue resources to those areas.

In conducting rescues VicPol may require the assistance of appropriately trained and equipped personnel. In these circumstances, appropriately trained and equipped VicSES units or other agencies may carry out rescues.

Rescue operations may be undertaken where voluntary evacuation is not possible, has failed or is considered too dangerous for an at-risk person or community. An assessment of available flood rescue resources (if not already done prior to the event) should be undertaken prior to the commencement of Rescue operations.

### **3.11 Aircraft Management**

Aircraft can be used for a variety of purposes during flood operations including evacuation, resupply, reconnaissance, intelligence gathering and emergency travel.

Air support operations will be conducted under the control of the Incident Controller.

The Incident Controller may request aircraft support through the State Air Desk located at the State Control Centre will establish priorities.

Suitable airbase facilities are located at:

Moorabbin Airport

---

### 3.12 Resupply

Communities, neighbourhoods or households can become isolated during floods as a consequence of road closures or damage to roads, bridges and causeways. Under such circumstances, the need may arise to resupply isolated communities/properties with essential items.

When predictions/intelligence indicates that communities, neighbourhoods and/or households may become isolated, VICSES will advise businesses and/or households that they should stock up on essential items.

After the impact, VICSES can support isolated communities through assisting with the transport of essential items to isolated communities and assisting with logistics functions.

Resupply operations are to be included as part of the emergency relief arrangements with VICSES working with the relief agencies to service communities that are isolated.

### 3.13 Essential Community Infrastructure and Property Protection

Essential Community Infrastructure and Property (e.g. residences, businesses, roads, power supply etc.) may be affected in the event of a flood.

The Kingston City Council maintains no stock of sandbags; supplies are available through the VICSES Regional Headquarters. The Incident Controller will determine the priorities related the use of sandbags, which will be consistent with the strategic priorities.

If VICSES sandbags are becoming limited in supply, then priority will be given to protection of Essential Community Infrastructure. Other high priorities may include for example the protection of historical buildings.

Property may be protected by:

- Sandbagging to minimise entry of water into buildings
- Encouraging businesses and households to lift or move contents
- Construction of temporary levees in consultation with the CMA, LGA and VICPOL and within appropriate approval frameworks.

The Incident Controller will ensure that owners of Essential Community Infrastructure are kept advised of the flood situation. Essential Community Infrastructure providers must keep the Incident Controller informed of their status and ongoing ability to provide services.

Refer to Appendix C for further specific details of essential infrastructure requiring protection. Sandbag collection points will only be established as needed.

The Incident Controller will ensure that owners of Essential Community Infrastructure are kept advised of the flood situation. Essential Community Infrastructure providers must keep the Incident Controller informed of their status and ongoing ability to provide services.

Refer to Appendix C for further specific details of essential infrastructure requiring protection and location of sandbag collection point(s).

### 3.14 Disruption to Services

Disruption to services other than essential community infrastructure and property can occur in flood events. Refer to appendix C for specific details of likely disruption to services and proposed arrangements to respond to service disruptions in City of Kingston.

---

### 3.15 Road Closures

City of Kingston and VicRoads will carry out their formal functions of road closures including observation and placement of warning signs, road blocks etc. to its designated local and regional roads, bridges, walking and bike trails. The City of Kingston staff may also liaise with and advise VicRoads as to the need or advisability of erecting warning signs and / or of closing roads and bridges under its jurisdiction. VicRoads are responsible for designated main roads and highways and Council's are responsible for the designated local and regional road network.

VICROADS and [Enter Municipality Name] will communicate community information regarding road closures.

### 3.16 Dam Failure

DSE is the Control Agency for dam safety incidents (e.g. breach, failure or potential breach / failure of a dam), however VICSES is the Control Agency for any flooding that may result.

There are no major dams within the City of Kingston with the potential to cause structural and community damage.

### 3.17 Waste Water related Public Health Issues and Critical Sewerage Assets

Inundation of critical sewerage assets including septic tanks and sewerage pump stations may result in water quality problems within the Municipality. Where this is likely to occur or has occurred the responsibility agency for the critical sewerage asset should undertake the following:

- Advise VICSES of the security of critical sewerage assets to assist preparedness and response activities in the event of flood;
- Maintain or improve the security of critical sewerage assets;
- Check and correct where possible the operation of critical sewerage assets in times of flood;
- Advise the ICC in the event of inundation of critical sewerage assets.

It is the responsibility of the City of Kingston Environmental Health Officer to inspect and report to the MERO and the ICC on any water quality issues relating to flooding.

### 3.18 After Action Review

VICSES will coordinate the after action review arrangements of flood operations as soon as practical following an event.

All agencies involved in the flood incident should be represented at the after action review.

---

## **Part 4. EMERGENCY RELIEF AND RECOVERY ARRANGEMENTS**

### **4.1 General**

Arrangements for recovery from a flood incident within City of Kingston are detailed in the City of Kingston MEMP and the City of Kingston Municipal Emergency Recovery Manual.

### **4.2 Emergency Relief**

The decision to recommend the opening of an emergency relief centre rests with the Incident Controller. Incident Controllers are responsible for ensuring that relief arrangements have been considered and implemented where required under the State Emergency Relief and Recovery Plan (Part 4 of the EMMV).

The range and type of emergency relief services to be provided in response to a flood event will be dependent upon the size, impact, and scale of the flood. Refer to 4.4 of the EMMV for details of the range of emergency relief services that may be provided.

Suitable relief facilities identified for use during floods are detailed in the MEMPlan as well as details for relief arrangements.

### **4.3 Animal Welfare**

Matters relating to the welfare of livestock, companion animals and wildlife (including feeding and rescue) are to be referred to DPI.

Requests for emergency supply and/or delivery of fodder to stranded livestock or for livestock rescue are passed to DPI.

Matters relating to the welfare of wildlife are to be referred to DSE.

### **4.4 Transition from Response to Recovery**

VICSES as the Control Agency is responsible for ensuring effective transition from response to recovery. This transition will be conducted in accordance with existing arrangements as detailed in Part 3 Section 3.10 of the EMMV.

---

## APPENDIX A - FLOOD THREATS FOR CITY OF KINGSTON

### GENERAL

The City of Kingston is located in the south east of Melbourne on Port Phillip Bay. The municipality covers an area of 9,131 hectares (91km<sup>2</sup>) with 13 kilometres of coastline between Mentone and Carrum (see map B in **Appendix F**).

Kingston's suburbs include Aspendale, Aspendale Gardens, Bonbeach, Braeside, Carrum, Chelsea, Chelsea Heights, Cheltenham, Clarinda, Clayton South, Dingley Village, Edithvale, Heatherton, Highett, Mentone, Moorabbin, Mordialloc, Oakleigh South, Parkdale, Patterson Lakes and Waterways. The City of Kingston borders the Cities of Glen Eira and Monash to the north, the City of Greater Dandenong to the east, City of Frankston to the south and City of Bayside to the west.<sup>1</sup>

The City of Kingston is one of the largest and most physically diverse municipalities in metropolitan Melbourne. It has substantial residential areas with vibrant activity centres, and also agricultural and non-urban areas that are part of a south eastern regional wedge of non-urban land including quarries, landfill sites, and market gardens. Across the City of Kingston, there are significant areas of open space including the foreshore, waterways, wetlands, golf courses, and range of parks and reserves, some containing significant flora and fauna.

The City of Kingston is an important manufacturing and commercial centre with over 8,000 businesses employing approximately 65,000 people. Kingston has a major retail centre at Cheltenham, a major aquatic centre in Highett, and an airport at Moorabbin.

Kingston City Council shares flood management responsibilities with Melbourne Water. Flooding is a significant issue for the community and creates challenges for both Council and Melbourne Water. Many of Kingston's low laying bayside suburbs experience localised shallow flooding during minor storm events. Kingston is somewhat unique in that it is reliant on a significant number of stormwater pumping stations as part of the drainage network.

### RIVERINE FLOODING

Large severe floods within the Municipality generally occur as a result of a moist warm airflow from northern Australia bringing moderate to heavy rainfall over a period of 12 hours or more following a prolonged period of general rainfall. The period of general rainfall "wets up" the catchments and (partially) fills both the on-stream dams and the natural floodplain storage. These combine to increase the runoff generated during the subsequent period of heavy rainfall.

Large but less severe floods result from sequences of cold fronts during winter and spring that progressively wet up the catchments and fill the on-stream dams and the natural floodplain storage. Prolonged moderate to heavy rain leads to major flooding.

<sup>1</sup> (Kingston Flood Management Plan, January 2016)

---

## FLASH FLOODING & OVERLAND FLOWS

Short Duration, high intensity rainfall (usually associated with thunderstorms) can also cause localised flooding within the municipality along overland flow paths when the local urban drainage system surcharges. Such events, which are mainly confined to the summer months, do not generally create widespread flooding since they only last for a short time and affect limited areas. Flooding from these storms occurs with little warning and localised damage can be severe.

High intensity rainfall such as associated with thunderstorms giving average rainfall rates of more than 20mm/hour for an hour or more is likely to lead to flash flooding and / or overland flows, across the urbanised parts of the municipality.

Blocked or capacity impaired stormwater drains can also lead to overland flows and associated flooding: the drain surcharges and excess water flows above ground.

## TIDAL FLOODING & STORM SURGES

Moderate to heavy rainfall, coupled with a high or incoming tide from Port Phillip Bay can exacerbate flooding within the municipality or create areas of flooding in and around the drainage network. Due to the proximity of the Municipality to Port Phillip Bay and its flat terrain, tidal flows from Port Phillip Bay may reduce the capacity of the stormwater drains to discharge runoff back into the bay, while extreme storm events can cause backflow to the point where water surcharges back above ground around the drainage pits and channels.

Patterson Lakes and Carrum are protected from Tidal Flooding and Storm Surges by way of three Tidal Gates located along the southern bank of Patterson River. For details on these tidal gates, refer to the tidal gates table under 'Flood Mitigation Systems' within this Appendix (A).

Areas of risk from tidal flooding and storm surges are:

- Patterson Lakes and Carrum if any of the three tidal gates along Patterson River were to fail
- Mordialloc Creek Marina with access to Lambert Island potentially cut via footbridge
- J. Grut Reserve in Mordialloc
- Wetlands in Braeside and Waterways north of Mordialloc Creek
- Beaches between Mentone in Beaumaris Bay to Carrum at Eel Race Road

With elevated levels likely during a storm surge event in Mordialloc Creek and Patterson River, this may impact on the ability of drainage systems such as the Centre Swamp Drain, Heatherton Drain, Mordialloc Settlement Drain, Braeside West Drain & Whatley's Drain to discharge stormwater into the two waterways. Consideration should be given also to the four pumping stations located along Mordialloc Creek and Patterson River during storm surge events.

## DESCRIPTION OF MAJOR WATERWAYS & DRAINS

The City of Kingston is located in the Dandenong catchment with major waterways being the Mordialloc Creek and Patterson River (See Catchment Schematics in **Appendix G**). Once the natural northern outlet of the Carrum Carrum Swamp, Mordialloc Creek is now fed by a diversion on lower Dandenong Creek and underground drains entering from the north (Melbourne Water, 2004).

The Carrum Swamplands were drained in the late 1800s with the construction of the Patterson River that runs through the southern part of the City of Kingston. The lower Patterson River was further

modified in the 1970s and 1980s with the creation of the Patterson Lakes, a system of artificial tidal canals and enclosed lakes.

List of Melbourne Water Drains & Waterways within the City of Kingston

Melbourne Water Drains & Waterways	Suburb/s	Melbourne Water Drains & Waterways	Suburb/s
Argus Street Drain	Cheltenham	Marina Road Drain	Mentone
Ashmore Avenue Drain	Mordialloc	McKay Street Drain	Parkdale
Bourke Road Drain	Clayton South & Clarinda	Meek Street Drain	Moorabbin
Bowen Road Drain	Aspendale Gardens	Moorabbin Airport Drain	Mordialloc
Braeside South Drain	Braeside	Moorabbin East Drain	Moorabbin
Braeside West Drain	Braeside & Dingley Village	Moorabbin Main Drain	Moorabbin
Carrol Road Main Drain	Oakleigh South & Clarinda	Mordialloc Creek	Aspendale, Aspendale Gardens, Waterways & Mordialloc
Carrum Lowlands Drain	Bonbeach	Mordialloc Settlement Drain	Moorabbin Airport, Mordialloc & Braeside
Centre Swamp Drain	Aspendale, Aspendale Gardens, Edithvale, Chelsea, Chelsea Heights & Bonbeach	Oak Grove Drain	Cheltenham
Clarinda Main Drain	Clarinda	Old Dandenong Road Drain	Dingley Village
Clayton Drain	Clayton South	Parkers Road Drain	Cheltenham, Mentone & Parkdale
Clayton South Drain	Clayton South, Clarinda & Heatherton	Patterson Lakes South Project	Patterson Lakes
Dingley Drain	Dingley Village & Braeside	Patterson River	Patterson Lakes, Carrum, Chelsea Heights & Bonbeach
Dunlop's Drain	Clayton South	Springs Drain	Chelsea Heights
East Boundary Road Drain	Moorabbin	Springs Road Drain	Clayton South
East Oakleigh Drain	Clayton South	Swamp Road Drain	Moorabbin & Cheltenham
Gartsides Drain	Dingley Village	Victor Road Drain	Oakleigh South
Gartsides North Drain	Dingley Village	Westall Drain	Clayton South
Gartsides South Drain	Dingley Village	Whatleys Drain	Carrum
Heatherton Main Drain	Mordialloc, Parkdale, Cheltenham, Heatherton & Moorabbin	White Street Drain	Mordialloc

Table A1 – Melbourne Water Drains and Waterways within or bordering the City of Kingston

## FLOOD MITIGATION SYSTEMS

Flood mitigation has predominantly been developed in the form of 15 Retarding Basins, 8 Pumping Stations, 5 Levees & 3 Tidal Gates. These flood mitigation systems are as follows in the tables below. To view their locations and connecting waterway/drainage systems, see mapping in **Appendix F**.

### RETARDING BASINS

Retarding Basin	On Drain/ Waterway	Area	Storage Capacity	Spillway Crest Level	Full Supply Level	Embankment Crest Level	ANCOLD Hazard Rating	Properties In Flow Path (dam breach)	Melway Reference
Argus Street (MW)	Heatherton Drain	48,720m <sup>2</sup>	200ML	28.8m AHD	29.0m AHD	29.7m AHD	High A	21	78 B12
Browns Reserve (MW)	Centre Swamp Drain	22,680m <sup>2</sup>	~100ML	N/A	Unavailable	2.3m AHD	Very Low	0	92 J2
Clayton (MW)	Clayton Drain	57,120m <sup>2</sup>	93.5ML	42.8m AHD	43.4m AHD	43.4m AHD	Low	3	79 A5
Kingswood Golf Course (MW)	Gartsides North Drain	17,150m <sup>2</sup>	22ML	N/A	Unavailable	24.0m AHD	Very Low	0	88 E3
Moorabbin Airport (PVT)	Mordialloc Settlement	111,400m <sup>2</sup>	Unavailable	Unavailable	Unavailable	10.58m AHD	High C	Unavailable	87 K6
South Road (MW)	Heatherton Drain	86,160m <sup>2</sup>	748ML	41.6m AHD	41.8m AHD	N/A	Very Low	0	78 D7
Southern Road (MW)	Heatherton Drain	41,272m <sup>2</sup>	133ML	15.0m AHD	15.3m AHD	15.5m AHD	High C	12	87 F5
Sunmore Close (MW)	Local Drainage	4,270m <sup>2</sup>	3.2ML	38.6m AHD	38.8m AHD	38.9m AHD	Very Low	0	78 D8

Table A2 – Melbourne Water Retarding Basins within the City of Kingston

Kingston City Council Retarding Basin	Location	Area	Melway Reference
Augusta Square	Augusta Square, Heatherton	4,000m <sup>2</sup>	78D12
Barkers Street	Barkers Street Reserve, Heatherton	3,000m <sup>2</sup>	78E8
Bear Street	Bear Street, Mordialloc	1,200m <sup>2</sup>	87G12
Glenelg Drive	Mentone Racecourse Reserve, Mentone	4,000m <sup>2</sup>	87D5
Hall Mark Road	Doug Denyer Reserve, Mordialloc	35,000m <sup>2</sup>	87H12
Oakmont Crescent	Oakmont Crescent, Heatherton	2,000m <sup>2</sup>	78C12
St Georges Crescent	St Georges Crescent, Heatherton	4,500m <sup>2</sup>	78D12
Sunningdale Way	The Heath Common, Heatherton	5,500m <sup>2</sup>	78E11

Table A3 – Kingston City Council Retarding Basins

## PUMPING STATIONS

Melbourne Water Pumping Station	On Drain / Waterway	Location	No. of Pumps	Capacity	Trigger Levels (Start and Stop)	Melway Reference
Browns Reserve	Centre Swamp Drain Edithvale Road to Mordialloc Creek	Browns Reserve near convergence with Mordialloc Creek in Aspendale	3	Pump 1(A): 5ML/day (Auto) Pump 2(B): 125ML/day (Auto) Pump 3(C): 250ML/day (Manual)	Pump 1: -2.13m AHD to -1.53m AHD Pump 2: -1.53m AHD to -0.63m AHD Pump 3: -0.48m AHD to -2.77m AHD	92H2
Edithvale Wetlands	Centre Swamp Drain, Edithvale Wetlands (Environmental)	Edithvale Road, Edithvale	1	Unavailable	Unavailable	93D8
Centre Swamp Drain	Centre Swamp Drain, Wetlands over Levee to Patterson River	Wannarkladdin Wetlands, Bonbeach at convergence with Patterson River	5	Minor Pumps 1-2: 11ML/day Main Pumps 1-3: 90ML/day Total: 268ML/day	Unknown. Failure may result in major flooding impacting ~1000 properties	97G4
Gladesville Boulevard	Patterson Lakes South Project	Gladesville Boulevard, Patterson Lakes	2	Pump 1: 40ML/day Pump 2: 6.3ML/day	Pump 1: -1.88m AHD to -2.77m AHD Pump 2: -1.24m AHD to -2.77m AHD	97H4
McLeod Road	Patterson Lakes South Project	McLeod Road, Patterson Lakes	2	Unavailable	Pump 1: -1.32m AHD to -1.82m AHD Pump 2: -0.87m AHD to -1.42m AHD	97J6
Whatleys Drain	Whatleys Drain	Launching Way, Carrum at convergence with Patterson River	2	Unavailable	Pump 1: -1.38m AHD to -1.68m AHD Pump 2: -1.13m AHD to -1.68m AHD	97D6
Wadsleys Drain	Wadsleys Drain	Melbourne Water Eastern Treatment Plant adjacent to Mornington Peninsula Freeway, Carrum Downs	1	Pump 1: 0.5ML/day	Pump 1: 0.60m AHD to 0.20m AHD	97K9
Kananook Creek	Patterson Lakes South Project (Environmental)	Palm Beach Drive, Patterson Lakes adjacent to Eel Race Drain	2	Pump 1: 98ML/day Pump 2: 50ML/day	Pump 1: 0.65m AHD to 0.70m AHD Pump 2: 0.85m AHD to 0.90m AHD	97G9

Table A4 – Melbourne Water Pumping Stations within the City of Kingston

## PUMPING STATIONS (cont)

Kingston City Council Pumping Station	Suburb	No. of Pumps	Capacity
Bear Street	Mordialloc	2	200L/s
Valetta Street North	Carrum	2	200L/s
Valetta Street South	Carrum	2	200L/s
Fowler Stand Glenola Road	Chelsea	1	200L/s
Millicent Street	Carrum	2	200L/s
Canberra Street	Carrum	2	200L/s
Riversdale Avenue	Carrum	2	1,000L/s
Wells Road	Aspendale	1	200L/s
Nepean Highway	Mordialloc	1	200L/s
The Fairway	Bonbeach	2	200L/s

Table A5 – Kingston City Council Pumping Stations

## LEVEES

Melbourne Water Levee	Reach	Side	Levee Height	Levee Length	Expected Level of Protection	ANCOLD Hazard Rating	Houses at risk behind Levee	Melway Reference
Mordialloc Creek	Springvale Road to Browns Reserve Pump Station	South	2m (4.1m AHD) upstream to 1m (2.9m AHD) downstream	2.7km	800mm freeboard in 100yr ARI Event	Significant	13	93G5-92H2
Patterson River	Mornington Peninsula Freeway to Seawall	North	4.0m (5.4m AHD) upstream to (2.73m AHD) downstream	2.8km	1m freeboard in 100yr ARI Event	High A	407	97J3-97C7
Patterson River	Mornington Peninsula Freeway to Railway	South	4.0m (5.4m AHD) upstream to 2.73m AHD downstream	2.7km	1m freeboard in 100yr ARI Event	High A	445	97J3-97D7
Wadsley Drain	Wadsley Road to Eel Race Drain	West	1.26m	0.9km	100yr ARI Event (freeboard unknown)	Very Low	0	97K7-97K10
Eel Race Drain	Mornington Peninsula Freeway to Footbridge	North	2.0m	1.3km	>100yr ARI Event. 100yr ARI flows will begin to top the lower southern levee bank into Seaford Wetlands	High A	135	97J9-97F9

Table A6 – Levees within the City of Kingston

## TIDAL GATES

On Drain / Waterway	Location	To Be Closed at Level against Gauge	Melway Reference
Patterson River	Marina Drive, Patterson Lakes at mouth of Inner Harbour Marina	Patterson Lakes: 0.73m (0.73m AHD)	97 H5
Patterson River	North Shore Drive, Patterson Lakes at mouth of Patterson Lakes Marina	Patterson Lakes: 0.73m (0.73m AHD)	97 G6
Patterson River	Dandenong Creek Trail at the eastern end of the Patterson River Boat Launch Car Park , Patterson Lakes at mouth of the Tidal Canal	Patterson Lakes: 0.73m (0.73m AHD)	97 F6

Table A7 – Tidal Flood Gates within the City of Kingston

## SEWERAGE INFRASTRUCTURE

Sewerage Infrastructure of note during a severe flood event located within the City of Kingston are contained within the following two tables. To view their locations, view mapping in **Appendix F**.

### SEWER PUMPING STATIONS

Melbourne Water Sewerage Pumping Station	On Drain / Waterway	Location	Melway Reference
Mordialloc No1 Pumping Station	Local Drainage	Intersection of Chute Street Bear Street, Mordialloc	87G12
Mordialloc No2 Pumping Station	Heatherton Drain	South side of Cedric Street near Chute Street, Mordialloc	87G10
Mordialloc Wet Weather Pumping Station	Dingley Drain	Braeside Park along the Howard Road Trail, Braeside	88D11
Bondi Road Pumping Station	Local Drainage	South side of Bondi Road, Bonbeach	97E3

Table A8 – Sewer Pumping Stations within or close to the City of Kingston

### SEWER EMERGENCY RELIEF POINTS

On Drain / Waterway	Location	Melway Reference
Mordialloc Settlement Drain	North side of Lower Dandenong Road near Boundary Road, Moorabbin Airport	87K7
Heatherton Drain	South side of Cedric Street near Chute Street, Mordialloc	87G10
Heatherton Drain	North side of White Street at Manikato Avenue, Mordialloc	87G11

Table A9 – Sewer Emergency Relief Points within or close to the City of Kingston

## FLOOD WARNING SYSTEM

Within the City of Kingston, Melbourne Water has five hydrographic monitoring sites along the six major drainage systems in the Municipality. These are outlined in the table below. These gauges can be monitored online through Melbourne Water at: <http://www.melbournewater.com.au/waterdata/rainfallandrivervelleveldata/Pages/Rainfall-and-river-level-new.aspx> or through the Bureau of Meteorology at: [http://www.bom.gov.au/cgi-bin/wrap\\_fwo.pl?IDV60201.html](http://www.bom.gov.au/cgi-bin/wrap_fwo.pl?IDV60201.html). To view their locations, see mapping in **Appendix F**.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Braeside	586095	Southern end of Braeside Park, 300m from Governor Road, Braeside		✓		93 F1
Clayton South Drain at Clayton R/Basin	228603A	80m past the end of Merlyn Avenue in the Clayton Retarding Basin, Clayton South	✓	✓		79 B5
Dunlops Road Drain at Braeside	228358A	East bank of the channel, north side of the Citrus Street Bridge, Braeside	✓			88 A8
Heatherton Main Drain at Mentone	228262A	At the Southern Rd Retarding Basin, end of Craigmore Avenue, Mentone	✓	✓		87 E5
Moorabbin Airport AWS	86087	Moorabbin Airport along Perimeter Road, Moorabbin Airport		✓		87 H5
Patterson River at Patterson Lakes	228383A	Dandenong Creek Trail at the eastern end of the Patterson River Boat Launch Car Park , Patterson Lakes at mouth of the Tidal Canal			✓	97 F6

Table A10 – Hydrographic Monitoring Stations within the City of Kingston

Other gauges in adjoining Municipalities that may assist in flood warning are outlined below. To view their locations, see mapping in **Appendix F**.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Dandenong Creek at Keysborough	228356B	East side of the channel, along the Bicycle / Walking Trail under the Eastlink Bridge. 400m south of Arkwright Drive, Dandenong South	✓	✓		94 H5
Eel Race Drain at Seaford North	228371A	Pedestrian Crossing along Riviera Street, Seaford	✓	✓		97 D11
Hampton	586036	Hampton Bowling Club, Fewster Street, Hampton		✓		76 J6
Mile Creek at Springvale West	228362A	West Side of Channel at end of Oakdale Court, Springvale	✓	✓		79 K6
Oakleigh South	586185	South East Water's Moorabbin Reservoir, Warrigal Road, Bentleigh East		✓		78 E1
Sandringham	586184	South East Water's Service Reservoir within the Bayside Waste & Recycling Centre, Talinga Road, Cheltenham		✓		86 D1

Table A11 – Hydrographic Monitoring Stations within adjacent Municipalities to the City of Kingston

The Bureau does not issue formal flood warnings for Mordialloc Creek due to its rapid response to rainfall. This is due to the urban surrounds which quickly direct stormwater into drains and waterways. This results in rapid stream rises during thunderstorms and heavy rainfall creating a short lead time for response.

There is currently one Melbourne Water flood warning gauges on Patterson River that could be used to assist with public safety. This is at Patterson Lakes. A flood class level has been established for this gauge and is outlined below.

Hydrographic Monitoring Station	River / Creek Flood Class Level		
	Minor	Moderate	Major
Patterson River at Patterson Lakes	0.75m	Not established	Not established

Table A12 – Hydrographic Monitoring Stations with established Flood Class Levels for the City of Kingston

At this site on the Patterson River, 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 the City of Kingston monitors these warnings in times of high rainfall, there are no specific guidelines to advise how these situations should be responded to.

## HISTORIC FLOODS

Historically, several major floods have affected people living within suburbs that now form the City of Kingston. In December 1934, Chelsea and surrounding areas were severely flooded, and some 1500 people were evacuated from their homes. In October 1937, there was significant flooding in Chelsea, and in July 1952, some 1200 people were evacuated from their homes in the bayside suburbs of Chelsea, Bonbeach, Seaford and Carrum because of severe flooding.

During the 1950s and 1960s, the installation of floodgates and pumps on the Patterson River, and the raising of the height of levee banks, increased protection of Chelsea and surrounding areas from severe flooding. However, flooding still occurs in Kingston's suburbs. For example, in 1993/94 there was significant and widespread flooding in both commercial and residential buildings in Moorabbin and Braeside. In 1997, there was significant flooding in Dingley Village. In November 2003, thunderstorms resulted in localised flash flooding across the Melbourne metropolitan area including at Chelsea.

The February 2011 flood event was an extreme event across the majority of the Kingston municipality. The worst affected areas (including a 10km wide band through Beaconsfield and Dandenong South) received 180mm of rain in one hour, equivalent to a 1 in 500 year event. Suburbs within Kingston experienced:

- North Ward: 130mm/hr or a 1 in 50 year storm event;
- Central Ward: 150mm/hr or 1 in 100 year storm event and;
- South Ward: 1 in 50 years towards Edithvale and 1 in 20 years towards Carrum

Most local roads were flooded at the low points to a depth of between 100mm to 500mm. Edithvale Road was severely impacted and was closed for a period of 8 days (Kingston Flood Management Plan Revision, Melbourne Water 2016).

Significant floods or high tides to have occurred within the City of Kingston are contained within the following table.

Event	Clayton R/Basin, Clayton (228603A)		Dunlops Rd Drain, Braeside (228358A)	Patterson River, Patterson Lakes (228383A)
	Rainfall at Gauge	Retarding Basin Level	Channel Level	Tide Level
Normal Water Level		0.1m	< July 1995: 3.9m > July 1995: 0.15m *	-0.2m to 0.2m (tide influenced gauge)
Minor		-	-	0.75m
Moderate		-	-	-
Major		-	-	-
1 <sup>st</sup> December 1934	-	-	-	-
20 <sup>th</sup> October 1937	-	-	-	-
15 <sup>th</sup> July 1952	-	-	-	-
August 1965	-	-	-	-
21 <sup>st</sup> August 1975	-	-	5.24m	-
18 <sup>th</sup> September 1975	-	-	5.22m	-
18 <sup>th</sup> May 1980	-	-	4.81m	-
3 <sup>rd</sup> July 1980	-	-	4.75m	-
15 <sup>th</sup> March 1982	-	2.40m	4.14m	-
28 <sup>th</sup> November 1983	26mm / 2 hrs	1.84m	5.21m	-
22 <sup>nd</sup> November 1988	45mm / 13 hrs	1.86m	4.79m	-
5 <sup>th</sup> July 1990	6mm / 4 hrs	0.76m	4.80m	-
18 <sup>th</sup> July 1990	50mm / 7 hrs	2.10m	5.42m	-
23 <sup>rd</sup> January 1991	44mm / 4 hrs	2.14m	4.93m	-
24 <sup>th</sup> January 1993	-	2.32m	4.85m	-

Event	Clayton R/Basin, Clayton (228603A)		Dunlops Rd Drain, Braeside (228358A)	Patterson River, Patterson Lakes (228383A)
	Rainfall at Gauge	Retarding Basin Level	Channel Level	Tide Level
27 <sup>th</sup> January 1993	41mm / 10 hrs	1.10m	5.22m	-
22 <sup>nd</sup> February 1993	29mm / 7 hrs	1.42m	4.78m	-
2 <sup>nd</sup> November 1993	48mm / 4 hrs	2.54m	4.79m	-
14 <sup>th</sup> December 1993	25mm / 2 hrs then 27mm / 9 hrs	<b>2.68m</b>	4.69m	-
6 <sup>th</sup> November 1994	10mm / 24 hrs	0.38m	4.04m	1.11m
23 <sup>rd</sup> June 1996	28mm / 14 hrs	1.04m	0.44m	1.10m
7 <sup>th</sup> March 1997	25mm / 2 hrs	1.62m	1.09m	0.17m
7 <sup>th</sup> August 1997	12mm / 4 hrs	1.82m	0.65m	0.55m
22 <sup>nd</sup> December 2000	66mm / 13 hrs	-	0.98m	0.84m
20 <sup>th</sup> November 2003	15mm / 1 hr	1.83m	1.16m	0.29m
19 <sup>th</sup> June 2004	13mm / 12 hrs	0.60m	0.43m	1.19m
14 <sup>th</sup> August 2004	36mm / 17 hrs	1.01m	0.60m	0.78m
<b>3<sup>rd</sup> February 2005</b>	<b>124mm / 27 hrs</b>	1.75m	1.01m	<b>1.26m</b>
26 <sup>th</sup> April 2009	24mm / 24 hrs	0.04m	0.19m	<b>1.26m</b>
25 <sup>th</sup> August 2009	10mm / 12 hrs	0.07m	0.32m	1.12m
30 <sup>th</sup> October 2010	89mm / 24 hrs	0.22m	1.28m	0.70m
<b>4<sup>th</sup> February 2011</b>	7mm / 8 hrs	0.35m	1.63m	<b>1.26m</b>
5 <sup>th</sup> July 2011	3mm / 5 hrs	0.05m	0.32m	1.14m
9 <sup>th</sup> November 2011	36mm / 7 hrs	-	1.28m	0.54m
26 <sup>th</sup> November 2011	55mm / 20 hrs	-	1.26m	1.24m
27 <sup>th</sup> November 2012	30mm / 6 hrs	-	1.36m	0.33m
1 <sup>st</sup> June 2013	48mm / 16 hrs	1.12m	1.22m	0.82m
19 <sup>th</sup> July 2013	20mm / 5 hrs then 14mm / 5 hrs	0.97m	<b>1.75m</b>	0.90m
26 <sup>th</sup> September 2013	22mm / 6 hrs	1.10m	1.27m	1.04m
15 <sup>th</sup> March 2014	5mm / 1 hr	0.47m	1.47m	0.58m
24 <sup>th</sup> June 2014	16mm / 8 hrs	0.79m	0.56m	1.43m
31 <sup>st</sup> July 2014	10mm / 5 hrs	0.59m	0.42m	1.11m
13 <sup>th</sup> July 2016	3mm / 6 hrs	0.4m	0.26m	1.17m
4 <sup>th</sup> October 2016	11mm / 5 hrs then 7mm / 12 hrs	0.57m	0.49m	1.12m
<b>29<sup>th</sup> December 2016</b>	40mm / 2 hrs	1.32m	1.25m	0.61m

Table A13 – Selection of Historical Flood Events along the Mordialloc Settlement & Dunlops Rd Drains and the Patterson River

\* Braeside Level Gauge repositioned in July 1995 resulting in new normal water levels and flood levels.

## DAM FAILURE

No dams, either in or upstream of the City of Kingston are expected to affect the Municipality from flooding. See Dam Failure in Section 3 of this plan for more information.

## APPENDIX B - TYPICAL FLOOD PEAK TRAVEL TIMES

In using the information contained in this Appendix, consideration needs to be given to the time of travel of the flood peak. A flood on a 'dry' waterway will generally travel more slowly than a flood on a 'wet' waterway (eg. The first flood after a dry period will travel more slowly than the second flood in a series of floods). Hence, recent flood history, soil moisture and forecast weather conditions all need to be considered when using the following information to direct flood response activities.

Note that flooding will start some time ahead of the time indicated by the following travel times – these are the time between the flood peaks at respective sites.

### 1. Typical Travel Times

Location From (gauge)	Location To (gauge)	Typical Travel Time	Comments
<b>PATTERSON RIVER</b>			
Rowville	Patterson Lakes	Between 6-18 hours	Minor Flood (this section of river is affected by tidal flows from Port Phillip Bay)
Rowville	Patterson Lakes	Between 2-9 hours	Moderate Flood (this section of river is affected by tidal flows from Port Phillip Bay)
Rowville	Patterson Lakes	Around 4 hours	Major Flood (this section of river is affected by tidal flows from Port Phillip Bay)

Table B1 – Typical Flood Travel Times between gauges on the Patterson River

### 2. Historical Travel Times

Flood Event	Location From (gauge)	Location To (gauge)	Flood Peak Travel Time	Flood Class at Rowville
<b>PATTERSON RIVER</b>				
30 <sup>th</sup> July 1996	Rowville	Patterson Lakes	9 hours	Moderate
13 <sup>th</sup> November 2004	Rowville	Patterson Lakes	17 hours	Minor
3 <sup>rd</sup> February 2005	Rowville	Patterson Lakes	4 hours	Major
21 <sup>st</sup> December 2007	Rowville	Patterson Lakes	6 hours	Minor
5 <sup>th</sup> February 2011	Rowville	Patterson Lakes	2 hours	Moderate
22 <sup>nd</sup> June 2012	Rowville	Patterson Lakes	10 hours	Minor

Table B2 – Historical Flood Travel Times between gauges on Patterson River

---

## APPENDIX C1 – MOORABBIN MAIN DRAIN FLOOD EMERGENCY PLAN

### OVERVIEW OF FLOODING CONSEQUENCES

Moorabbin Main Drain is one drainage system that forms the Elster Creek and Elwood Canal Catchment. Moorabbin Main Drain begins approximately at Wickham Road in Highett near Chesterville Road and flows north westerly through Moorabbin including the G.R. Bricker & Moorabbin Reserves where it crosses into the City of Glen Eira at South Road.

The Drainage system is generally designed to give 10% AEP (10yr ARI) protection across Moorabbin. Events greater than 10% AEP will see overflows across residential roads and properties.

### WARNING TIMES

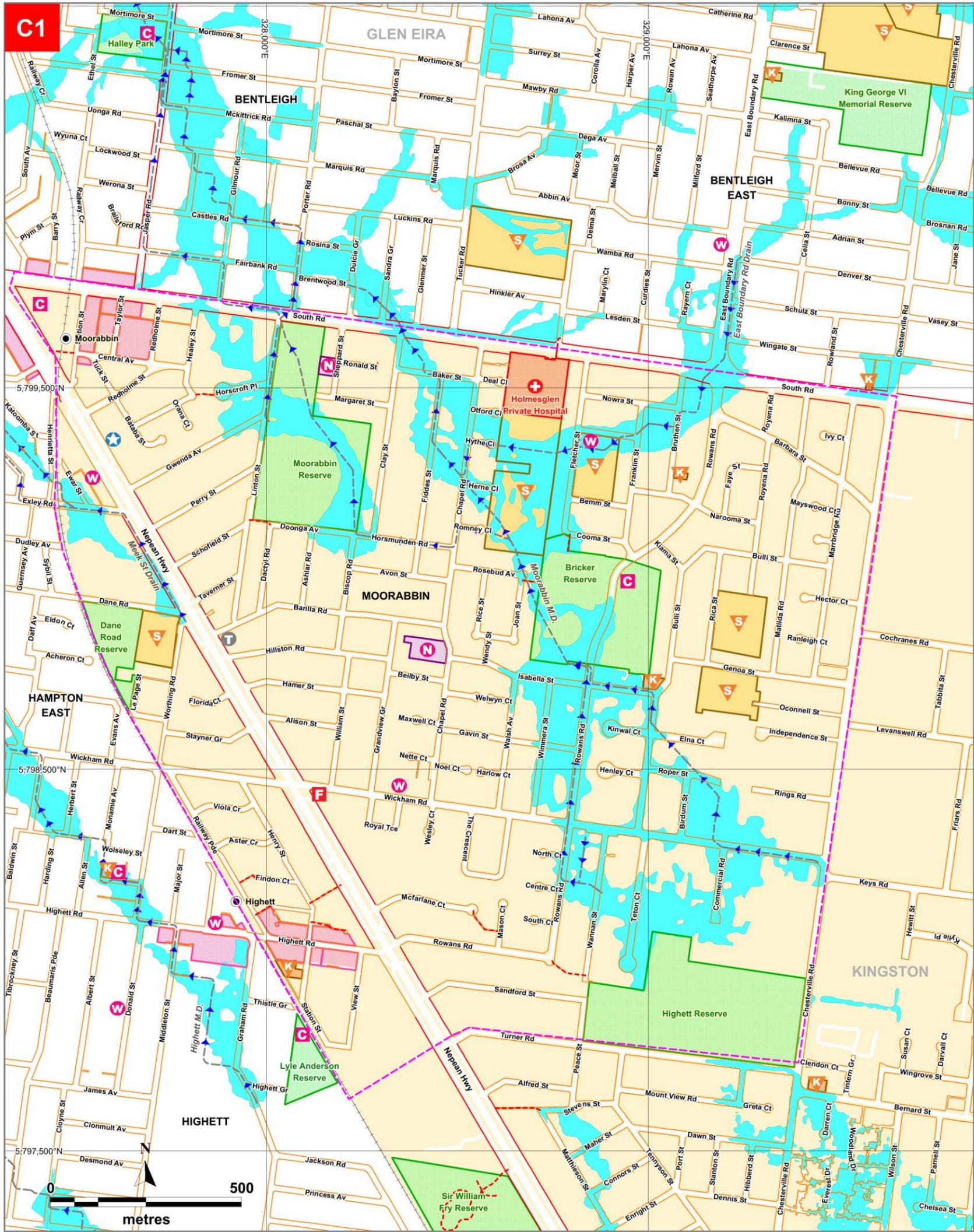
Whilst there are hydrographic/telemetry stations (river gauges) within the catchment, Melbourne Water does not provide any flood warning service at this point, due to the generally short warning times available.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Elster Creek at Elsternwick	229660A	Head St & Bridge St pedestrian crossing, Brighton	✓	✓		67 F6
Caulfield South	586115	347 North Road, Caulfield South		✓		68 B8
Hampton	586036	Hampton Bowling Club, Fewster Street, Hampton		✓		76 J6

Table C1.1 – Hydrographic Monitoring Stations within or near the Moorabbin Main Drain & Elster Creek catchment

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/content/rivers\\_and\\_creeks/rainfall\\_and\\_river\\_level\\_data/rainfall\\_and\\_river\\_level\\_data.asp](http://www.melbournewater.com.au/content/rivers_and_creeks/rainfall_and_river_level_data/rainfall_and_river_level_data.asp). It is advised that residents monitor the Bureau of Meteorology's website <http://www.bom.gov.au/> and the VicSES website <http://www.ses.vic.gov.au/> for any thunderstorm, flood or severe weather warnings present for their area.

AREAS OF FLOOD RISK



Flood Modelling completed by Melbourne Water & GHD, May 2011. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding  
**C1 - Areas of flood risk around the Moorabbin Main Drain**

- |  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |



**Melbourne Water**  
 This map 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.

Figure C1 – Areas of flood risk around Moorabbin Drain in the City of Kingston

## PROPERTIES AT FLOOD RISK

Properties listed in the table below are at risk from flooding of 300mm depth or more in a 1% AEP flood event. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Elwood Canal Catchment (Melbourne Water and GHD, May 2011) flood mapping and risk assessment programs.

*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 during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2/24	Ashlar Road	Moorabbin	Moorabbin Main Drain	Flash
5	Baker Street	Moorabbin	Moorabbin Main Drain	Flash
7	Baker Street	Moorabbin	Moorabbin Main Drain	Flash
2/12	Baker Street	Moorabbin	Moorabbin Main Drain	Flash
10	Biscop Road	Moorabbin	Moorabbin Main Drain	Flash
21	Biscop Road	Moorabbin	Moorabbin Main Drain	Flash
23	Biscop Road	Moorabbin	Moorabbin Main Drain	Flash
13	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
1/15	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
2/15	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
17	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
18	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
20	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
22	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
24	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
26	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
26A	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
28	Bruthen Street	Moorabbin	East Boundary Rd Drain	Flash
115	Chapel Road	Moorabbin	Moorabbin Main Drain	Flash
117	Chapel Road	Moorabbin	Moorabbin Main Drain	Flash
119	Chapel Road	Moorabbin	Moorabbin Main Drain	Flash
48	Clay Street	Moorabbin	Moorabbin Main Drain	Flash
8	Doonga Avenue	Moorabbin	Moorabbin Main Drain	Flash
22	Fiddes Street	Moorabbin	Moorabbin Main Drain	Flash
44	Fiddes Street	Moorabbin	Moorabbin Main Drain	Flash
2/5	Fletcher Street	Moorabbin	East Boundary Rd Drain	Flash
7	Fletcher Street	Moorabbin	East Boundary Rd Drain	Flash
23	Fletcher Street	Moorabbin	East Boundary Rd Drain	Flash
25	Fletcher Street	Moorabbin	East Boundary Rd Drain	Flash
27	Fletcher Street	Moorabbin	East Boundary Rd Drain	Flash
26	Franklin Street	Moorabbin	East Boundary Rd Drain	Flash
28	Franklin Street	Moorabbin	East Boundary Rd Drain	Flash
1/30	Franklin Street	Moorabbin	East Boundary Rd Drain	Flash
2/30	Franklin Street	Moorabbin	East Boundary Rd Drain	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
3/30	Franklin Street	Moorabbin	East Boundary Rd Drain	Flash
4/30	Franklin Street	Moorabbin	East Boundary Rd Drain	Flash
32	Franklin Street	Moorabbin	East Boundary Rd Drain	Flash
35	Franklin Street	Moorabbin	East Boundary Rd Drain	Flash
33	Gavin Street	Moorabbin	Moorabbin Main Drain	Flash
34	Gavin Street	Moorabbin	Moorabbin Main Drain	Flash
42	Gwenda Avenue	Moorabbin	Moorabbin Main Drain	Flash
45	Gwenda Avenue	Moorabbin	Moorabbin Main Drain	Flash
13	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
15	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
17	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
19	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
21	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
22	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
23	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
24	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
25A	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
26	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
28	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
30	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
1/31	Isabella Street	Moorabbin	Moorabbin East Drain	Flash
32	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
33	Isabella Street	Moorabbin	Moorabbin East Drain	Flash
34	Isabella Street	Moorabbin	Moorabbin Main Drain	Flash
20	Joan Street	Moorabbin	Moorabbin Main Drain	Flash
24	Joan Street	Moorabbin	Moorabbin Main Drain	Flash
12	Nowra Street	Moorabbin	East Boundary Rd Drain	Flash
14	Nowra Street	Moorabbin	East Boundary Rd Drain	Flash
16	Nowra Street	Moorabbin	East Boundary Rd Drain	Flash
16A	Nowra Street	Moorabbin	East Boundary Rd Drain	Flash
18	Nowra Street	Moorabbin	East Boundary Rd Drain	Flash
17	Rosebud Avenue	Moorabbin	Moorabbin Main Drain	Flash
19	Rosebud Avenue	Moorabbin	Moorabbin Main Drain	Flash
23	Rosebud Avenue	Moorabbin	Moorabbin Main Drain	Flash
72	Rowans Road	Highett	Moorabbin Main Drain	Flash
79	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
81	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
83	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
85	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
90	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
92	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
94	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
96	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
1/97	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2/97	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
3/97	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
98	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
100	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
102	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
104	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
106	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
108	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
122	Rowans Road	Moorabbin	Moorabbin Main Drain	Flash
124-126	Rowans Road	Moorabbin	Moorabbin East Drain	Flash
159	Rowans Road	Moorabbin	East Boundary Rd Drain	Flash
161	Rowans Road	Moorabbin	East Boundary Rd Drain	Flash
163	Rowans Road	Moorabbin	East Boundary Rd Drain	Flash
526	South Road	Moorabbin	East Boundary Rd Drain	Flash
528	South Road	Moorabbin	East Boundary Rd Drain	Flash
530	South Road	Moorabbin	East Boundary Rd Drain	Flash
532	South Road	Moorabbin	East Boundary Rd Drain	Flash
534	South Road	Moorabbin	East Boundary Rd Drain	Flash
536	South Road	Moorabbin	East Boundary Rd Drain	Flash
6	Teton Court	Highett	Moorabbin Main Drain	Flash
8	Teton Court	Highett	Moorabbin Main Drain	Flash
10-12	Teton Court	Highett	Moorabbin Main Drain	Flash
13	Teton Court	Highett	Moorabbin Main Drain	Flash
14-16	Teton Court	Highett	Moorabbin Main Drain	Flash
29-31	Wannan Street	Highett	Moorabbin Main Drain	Flash
274-276	Wickham Road	Highett	Moorabbin East Drain	Flash
283-285	Wickham Road	Moorabbin	Moorabbin East Drain	Flash
6	Wimmera Street	Moorabbin	Moorabbin Main Drain	Flash
8	Wimmera Street	Moorabbin	Moorabbin Main Drain	Flash
16	Wimmera Street	Moorabbin	Moorabbin Main Drain	Flash
18	Wimmera Street	Moorabbin	Moorabbin Main Drain	Flash
20	Wimmera Street	Moorabbin	Moorabbin Main Drain	Flash
<b>Total</b>				
<b>110</b>				

Table C1.2 – Properties at risk of flooding along the Moorabbin Main Drain catchment in the City of Kingston

## ISOLATION

No major isolation risks exist for areas around Moorabbin during a 1% AEP (100yr ARI) event. Some localised short-duration isolation may occur due to flash flooding.

## ESSENTIAL INFRASTRUCTURE

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 Kingston

---

is available via the website at:  
[https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23\\_Kingston\\_LAM.pdf](https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23_Kingston_LAM.pdf)

Apart from the roads outlined below, all other essential infrastructure and services areas around Moorabbin 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 Moorabbin. Check the VicRoads website for more details: <http://alerts.vicroads.vic.gov.au/>

VicRoads Roads affected in a 1% AEP event
<ul style="list-style-type: none"><li>• South Road, Moorabbin at Rowans Road</li></ul>
<ul style="list-style-type: none"><li>• Wickham Road, Highett near Chesterville Road</li></ul>
<ul style="list-style-type: none"><li>• Chesterville Road, Moorabbin at Keys Road</li></ul>

Table C1.3 – VicRoads Possible Road Closures during a flooding event

Kingston City Council Roads affected in a 1% AEP event	
<b>MOORABBIN</b>	<ul style="list-style-type: none"><li>• Exley Drive</li></ul>
<ul style="list-style-type: none"><li>• Bruthen Street</li></ul>	<ul style="list-style-type: none"><li>• Fletcher Street</li></ul>
<ul style="list-style-type: none"><li>• Buchan Street</li></ul>	<ul style="list-style-type: none"><li>• Herne Close</li></ul>
<ul style="list-style-type: none"><li>• Bulli Street</li></ul>	<ul style="list-style-type: none"><li>• Isabella Street</li></ul>
<ul style="list-style-type: none"><li>• Doonga Avenue</li></ul>	

Table C1.4 – Kingston City Council Possible Road Closures during a flooding event

## FLOOD MITIGATION

No formal Retarding Basins, Pumping Stations or Levees exist around the Moorabbin Main Drain in Moorabbin.

---

## COMMAND, CONTROL & COORDINATION

VICSES will assume overall control of the response to flood incidents. Other agencies will be requested to support operations as detailed in this Plan. Control and coordination of a flood incident shall be carried out at the lowest effective level and in accordance with the State Emergency Response Plan (EMMV Part 3). During significant events, VICSES will conduct incident management using multi-agency resources.

## FLOOD IMPACTS & REQUIRED ACTIONS

The table below is a breakdown of the number of properties flooded in a 1% AEP (100yr ARI) event. Refer to the following intelligence card/s for Moorabbin for more details.

Land Use Flooded in a 1% AEP Event	Total
Residential	98
Commercial	0
Industrial	12
Public Land	0
Rural	0
<b>Total</b>	<b>110</b>

Table C1.5 – Breakdown of likely land use flooded in the Moorabbin Main Drain Catchment in Kingston during a 1% AEP event

## FLOOD INTELLIGENCE CARD – MOORABBIN MAIN DRAIN, MOORABBIN (UNGAUGED)

Version 3 – September 2017



*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.*

CLOSEST RAIN GAUGE	<b>Elster Creek at Elsternwick</b>
LOCATION	<b>Head St &amp; Bridge St pedestrian crossing, Brighton</b>
MELWAY REF:	<b>67 F6</b>

GAUGE NUMBER	<b>229660A</b>
GAUGE TYPE	<b>Rain</b>
TELEMETRIC/MANUAL	<b>Telemetric</b>

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
22mm in 10 mins; 36mm in 30 mins; 47mm in 1 hour; 59mm in 2 hours; 82mm in 6 hours; or 101mm in 12 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.	1% AEP (100 year ARI)	<b>Properties Flooded (above 300mm depth) (Properties likely at risk before this Level)</b> <b>110 Properties in Total</b> <b>East Boundary Rd Drain</b> <ul style="list-style-type: none"> <li>• 13, 1/15, 2/15, 17, 18, 20, 22, 24, 26, 26A &amp; 28 Bruthen Street, Moorabbin</li> <li>• 2/5, 7, 23, 25 &amp; 27 Fletcher Street, Moorabbin</li> <li>• 26, 28, 1/30, 2/30, 3/30, 4/30, 32 &amp; 35 Franklin Street, Moorabbin</li> <li>• 12, 14, 16, 16A &amp; 18 Nowra Street, Moorabbin</li> <li>• 526, 528, 530, 532, 534 &amp; 536 South Road, Moorabbin</li> </ul> <b>Moorabbin East Drain</b> <ul style="list-style-type: none"> <li>• 274-276 &amp; 283-285 Wickham Road, Highett</li> </ul> <b>Moorabbin Main Drain</b> <ul style="list-style-type: none"> <li>• 2/24 Ashlar Road, Moorabbin</li> <li>• 5, 7 &amp; 2/12 Baker Street, Moorabbin</li> <li>• 10, 21 &amp; 23 Biscop Road, Moorabbin</li> <li>• 115, 117 &amp; 119 Chapel Road, Moorabbin</li> <li>• 48 Clay Street, Moorabbin</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>• 8 Doonga Avenue, Moorabbin</li> <li>• 22 &amp; 44 Fiddes Street, Moorabbin</li> <li>• 33 &amp; 34 Gavin Street, Moorabbin</li> <li>• 42 &amp; 45 Gwenda Avenue, Moorabbin</li> <li>• 13, 15, 17, 19, 21, 22, 23, 24, 25A, 26, 28, 30, 1/31, 32, 33 &amp; 34 Isabella Street, Moorabbin</li> <li>• 20 &amp; 24 Joan Street, Moorabbin</li> <li>• 17, 19 &amp; 23 Rosebud Avenue, Moorabbin</li> <li>• 72, 79, 81, 83, 85, 90, 92, 94, 96, 1/97, 2/97, 3/97, 98, 100, 102, 104, 106, 108, 122, 124-126, 159, 161 &amp; 163 Rowans Road, Highett</li> <li>• 6, 8, 10-12, 13 &amp; 14-16 Teton Court, Highett</li> <li>• 29-31 Wannan Street, Highett</li> <li>• 6, 8, 16, 18 &amp; 20 Wimmera Street, Moorabbin</li> </ul> <p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• Holmesglen Institute of TAFE, Moorabbin Campus on South Road, Moorabbin internal car-park flooded</li> </ul> <p><b>Water Over Road (above 300mm depth)</b></p> <ul style="list-style-type: none"> <li>• Chesterville Road, Moorabbin at Keys Road Intersection</li> <li>• Wickham Road, Highett near Chesterville Road</li> <li>• Bulli Street, Moorabbin near Isabella Street</li> <li>• Isabella Street, Moorabbin with significant levels</li> <li>• Doonga Avenue, Moorabbin</li> <li>• Herne Close, Moorabbin</li> <li>• Fletcher Street, Moorabbin</li> <li>• Buchan Street, Moorabbin</li> <li>• Bruthen Street, Moorabbin</li> <li>• South Road, Moorabbin at Rowans Road</li> <li>• Exley Drive, Moorabbin</li> </ul>	

Table C1.6 – Breakdown of possible consequences at various rainfall intensities around Moorabbin with operational considerations

## APPENDIX C2 – HEATHERTON MAIN DRAIN FLOOD EMERGENCY PLAN

### OVERVIEW OF FLOODING CONSEQUENCES

Heatherton Main Drain, with a long catchment area spanning half the length of the City of Kingston begins in Bentleigh East in the City of Glen Eira. The Drain enters the Municipality at the intersection of Warrigal & South Roads where it enters the South Road Retarding Basin. This large retarding basin mitigates flooding along a stretch of the drainage network to the south along Warrigal Road.

Heatherton Main Drain has a number of connecting drains including the Swamp Road and Argus Street Drains. Cochranes Road in Moorabbin is an area of risk along the Swamp Road Drain. At the join of the Argus Street Drain and Heatherton Drain is the Argus Street Retarding Basin. If the Retarding Basin has reached capacity, floodwaters will flow overland across Centre Dandenong Road to the southeast where the Southern Road Retarding Basin is located. From this point the impact to residential properties increases. The drain continues south before joining Mordialloc Creek in Mordialloc. The lower region of Mordialloc contains a light industrial zone with a number of businesses at risk in this relatively flat area.

A river level gauge is located at the Southern Road Retarding Basin and may give an indication of the impacts experienced. It is not used for flood warning because of the way the catchment responds to flash flooding.

### WARNING TIMES

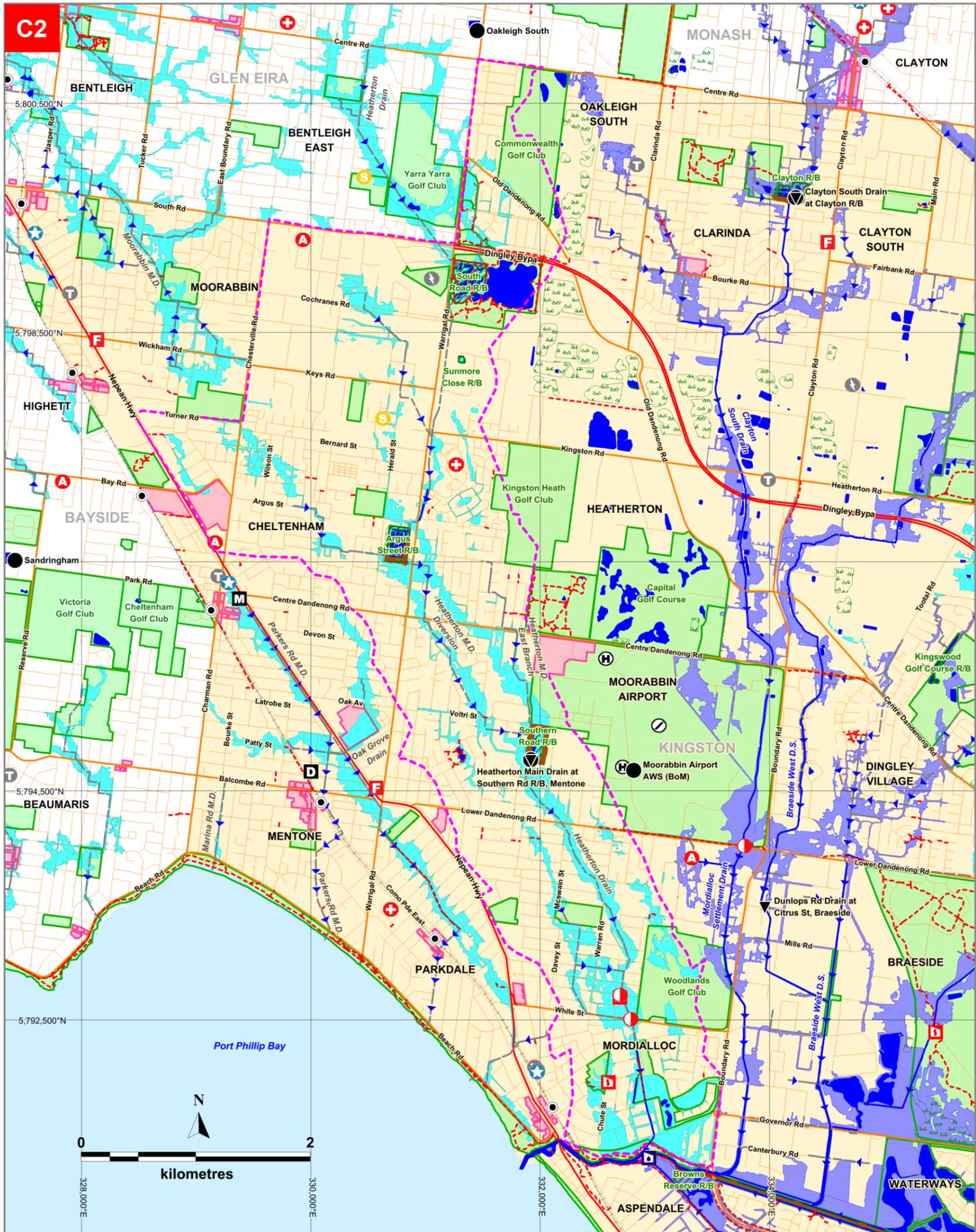
Whilst there are hydrographic/telemetry stations (river gauges) within the municipality, Melbourne Water does not provide any flood warning service at this point, due to the generally short warning times available.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Heatherton Main Drain at Mentone	228262A	At the Southern Rd Retarding Basin, end of Craigmore Avenue, Mentone	✓	✓		87 E5
Oakleigh South	586185	South East Water's Moorabbin Reservoir, Warrigal Road, Bentleigh East		✓		78 E1

Table C2.1 – Hydrographic Monitoring Stations within the Heatherton Main Drain catchment

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/rainfallandriverveldata/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/> or VicSES website <http://www.ses.vic.gov.au/> for any thunderstorm, flood or severe weather warnings present for their area.

AREAS AT FLOOD RISK



Flood Modelling completed by Melbourne Water & GHD, May 2011 - May 2013. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding  
**C2 - Areas of flood risk around the Heatherton Drain**

- |                                 |                                  |                                  |
|---------------------------------|----------------------------------|----------------------------------|
| Building                        | Bicycle / Walking Trail          | Ambulance Station                |
| Area of Interest                | Melbourne Water Stormwater Drain | MFB Fire Station                 |
| 1% AEP Flash Flood Extent       | River / Creek / Channel          | Municipal Offices                |
| 1% AEP Riverine Flood Extent    | Levee / Embankment               | Telephone Exchange               |
| Waterbody                       | Sewer Emergency Relief Structure | Stream level Gauge               |
| Shopping Precinct               | Drainage Pumping Station         | Airport / Airfield               |
| Melbourne Water Retarding Basin | Sewer Pumping Station            | Helipad                          |
| Natural Wetland                 | Municipal Depot                  | Rain Gauge                       |
| Area Boundary for this Appendix | Power Terminal Station           | Hospital                         |
|                                 |                                  | Victoria State Emergency Service |



This map 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.

Figure C2 – Areas of flood risk around Heatherton Drain in the City of Kingston

## PROPERTIES AT FLOOD RISK

Properties listed in the table below are at risk from flooding around the Heatherton Main Drain. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Mordialloc Settlement Drain (Melbourne Water and GHD, May 2013) flood mapping and risk assessment programs.

*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 over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
1	Abercrombie Street	Oakleigh South	Victor Rd Drain	Flash
2	Abercrombie Street	Oakleigh South	Victor Rd Drain	Flash
9	Alex Avenue	Moorabbin	Swamp Rd Drain	Flash
11	Alex Avenue	Moorabbin	Swamp Rd Drain	Flash
3/11	Alma Road	Parkdale	Heatherton Main Drain	Flash
15	Alma Road	Parkdale	Heatherton Main Drain	Flash
1	Axford Crescent	Oakleigh South	Victor Rd Drain	Flash
3	Axford Crescent	Oakleigh South	Victor Rd Drain	Flash
30	Balmoral Drive	Parkdale	Heatherton Main Drain	Flash
32	Balmoral Drive	Parkdale	Heatherton Main Drain	Flash
34	Balmoral Drive	Parkdale	Heatherton Main Drain	Flash
10/111	Barkly Street	Mordialloc	Heatherton Main Drain	Flash
11/111	Barkly Street	Mordialloc	Heatherton Main Drain	Flash
1	Beach Avenue	Mordialloc	Heatherton Main Drain	Flash
3	Beach Avenue	Mordialloc	Heatherton Main Drain	Flash
18-20	Beach Avenue	Mordialloc	Heatherton Main Drain	Flash
22	Beach Avenue	Mordialloc	Heatherton Main Drain	Flash
23	Bear Street	Mordialloc	Heatherton Main Drain	Flash
7/24	Bear Street	Mordialloc	Heatherton Main Drain	Flash
8/24	Bear Street	Mordialloc	Heatherton Main Drain	Flash
9/24	Bear Street	Mordialloc	Heatherton Main Drain	Flash
10/24	Bear Street	Mordialloc	Heatherton Main Drain	Flash
11/24	Bear Street	Mordialloc	Heatherton Main Drain	Flash
12/24	Bear Street	Mordialloc	Heatherton Main Drain	Flash
25	Bear Street	Mordialloc	Heatherton Main Drain	Flash
30	Bear Street	Mordialloc	Heatherton Main Drain	Flash
56	Bear Street	Mordialloc	Heatherton Main Drain	Flash
1/61	Bear Street	Mordialloc	Heatherton Main Drain	Flash
2/61	Bear Street	Mordialloc	Heatherton Main Drain	Flash
3/61	Bear Street	Mordialloc	Heatherton Main Drain	Flash
4/61	Bear Street	Mordialloc	Heatherton Main Drain	Flash
5/61	Bear Street	Mordialloc	Heatherton Main Drain	Flash
63	Bear Street	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2/3	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
5	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
1/7	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
2/7	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
9A	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
9B	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
1/17	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
2/17	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
19	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
4/19	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
2/21	Belle Crescent	Mordialloc	Heatherton Main Drain	Flash
2	Bernard Street	Cheltenham	Argus St Drain	Flash
4	Bernard Street	Cheltenham	Argus St Drain	Flash
1	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
2	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
3	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
4	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
5	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
6	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
7	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
8	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
9	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
10	Bertram Street	Mordialloc	Heatherton Main Drain	Flash
86	Blackwood Avenue	Mentone	Heatherton Main Drain	Flash
88	Blackwood Avenue	Mentone	Heatherton Main Drain	Flash
11	Boundary Road	Mordialloc	Heatherton Main Drain	Flash
13	Boundary Road	Mordialloc	Heatherton Main Drain	Flash
15	Boundary Road	Mordialloc	Heatherton Main Drain	Flash
17	Boundary Road	Mordialloc	Heatherton Main Drain	Flash
3A	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
5	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
7	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
1/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
2/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
3/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
4/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
5/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
6/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
7/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
8/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
9/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
10/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
11/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
12/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
13/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
14/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
15/9	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
11	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
13	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
15	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
17	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
19	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
21	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
23	Bradshaw Street	Mordialloc	Heatherton Main Drain	Flash
36	Brampton Street	Cheltenham	Heatherton Main Drain	Flash
37	Brampton Street	Cheltenham	Heatherton Main Drain	Flash
38	Brampton Street	Cheltenham	Heatherton Main Drain	Flash
38A	Brampton Street	Cheltenham	Heatherton Main Drain	Flash
42	Brampton Street	Cheltenham	Heatherton Main Drain	Flash
2	Brisbane Terrace	Parkdale	Heatherton Main Drain	Flash
46	Brownfield Street	Mordialloc	Heatherton Main Drain	Flash
46A	Brownfield Street	Mordialloc	Heatherton Main Drain	Flash
46B	Brownfield Street	Mordialloc	Heatherton Main Drain	Flash
48	Brownfield Street	Mordialloc	Heatherton Main Drain	Flash
59	Brownfield Street	Mordialloc	Heatherton Main Drain	Flash
61	Brownfield Street	Mordialloc	Heatherton Main Drain	Flash
63	Brownfield Street	Mordialloc	Heatherton Main Drain	Flash
15	Cedar Street	Mentone	Heatherton Main Drain	Flash
1/20	Cedric Street	Parkdale	McKay St Drain	Flash
2/20	Cedric Street	Parkdale	McKay St Drain	Flash
3/20	Cedric Street	Parkdale	McKay St Drain	Flash
4/20	Cedric Street	Parkdale	McKay St Drain	Flash
22	Cedric Street	Parkdale	McKay St Drain	Flash
45	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
47	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
48	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
49	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
50	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
51	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
52	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
53	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
54	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
55	Cedric Street	Mordialloc	Heatherton Main Drain	Flash
159	Centre Dandenong Road	Cheltenham	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
161	Centre Dandenong Road	Cheltenham	Heatherton Main Drain	Flash
204	Centre Dandenong Road	Cheltenham	Heatherton Main Drain	Flash
206	Centre Dandenong Road	Cheltenham	Heatherton Main Drain	Flash
208	Centre Dandenong Road	Cheltenham	Heatherton Main Drain	Flash
210	Centre Dandenong Road	Cheltenham	Heatherton Main Drain	Flash
212	Centre Dandenong Road	Cheltenham	Heatherton Main Drain	Flash
6	Chelsea Street	Cheltenham	Argus St Drain	Flash
8	Chelsea Street	Cheltenham	Argus St Drain	Flash
12	Chelsea Street	Cheltenham	Argus St Drain	Flash
2	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/4	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/4	Chute Street	Mordialloc	Heatherton Main Drain	Flash
6A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
8	Chute Street	Mordialloc	Heatherton Main Drain	Flash
10A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
10B	Chute Street	Mordialloc	Heatherton Main Drain	Flash
12	Chute Street	Mordialloc	Heatherton Main Drain	Flash
12A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
14	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/16	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/16	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
3/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
4/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
6/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
7/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
8/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
9/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
10/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
11/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
12/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
13/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
14/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
15/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
16/18-24	Chute Street	Mordialloc	Heatherton Main Drain	Flash
26	Chute Street	Mordialloc	Heatherton Main Drain	Flash
28	Chute Street	Mordialloc	Heatherton Main Drain	Flash
29	Chute Street	Mordialloc	Heatherton Main Drain	Flash
31	Chute Street	Mordialloc	Heatherton Main Drain	Flash
31A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
32	Chute Street	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
32A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
33	Chute Street	Mordialloc	Heatherton Main Drain	Flash
35B	Chute Street	Mordialloc	Heatherton Main Drain	Flash
37C	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/43	Chute Street	Mordialloc	Heatherton Main Drain	Flash
45	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/47	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/47	Chute Street	Mordialloc	Heatherton Main Drain	Flash
65	Chute Street	Mordialloc	Heatherton Main Drain	Flash
67	Chute Street	Mordialloc	Heatherton Main Drain	Flash
69	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/73	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/73	Chute Street	Mordialloc	Heatherton Main Drain	Flash
75	Chute Street	Mordialloc	Heatherton Main Drain	Flash
77	Chute Street	Mordialloc	Heatherton Main Drain	Flash
79	Chute Street	Mordialloc	Heatherton Main Drain	Flash
81	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/83	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/83	Chute Street	Mordialloc	Heatherton Main Drain	Flash
85A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/87	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/87	Chute Street	Mordialloc	Heatherton Main Drain	Flash
89	Chute Street	Mordialloc	Heatherton Main Drain	Flash
97	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/99	Chute Street	Mordialloc	Heatherton Main Drain	Flash
101	Chute Street	Mordialloc	Heatherton Main Drain	Flash
103	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/104	Chute Street	Mordialloc	Heatherton Main Drain	Flash
3/104	Chute Street	Mordialloc	Heatherton Main Drain	Flash
4/104	Chute Street	Mordialloc	Heatherton Main Drain	Flash
105	Chute Street	Mordialloc	Heatherton Main Drain	Flash
106	Chute Street	Mordialloc	Heatherton Main Drain	Flash
106A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
107	Chute Street	Mordialloc	Heatherton Main Drain	Flash
108	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/110	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/110	Chute Street	Mordialloc	Heatherton Main Drain	Flash
112	Chute Street	Mordialloc	Heatherton Main Drain	Flash
114	Chute Street	Mordialloc	Heatherton Main Drain	Flash
116	Chute Street	Mordialloc	Heatherton Main Drain	Flash
118	Chute Street	Mordialloc	Heatherton Main Drain	Flash
120	Chute Street	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
122	Chute Street	Mordialloc	Heatherton Main Drain	Flash
124	Chute Street	Mordialloc	Heatherton Main Drain	Flash
126	Chute Street	Mordialloc	Heatherton Main Drain	Flash
128	Chute Street	Mordialloc	Heatherton Main Drain	Flash
130	Chute Street	Mordialloc	Heatherton Main Drain	Flash
134	Chute Street	Mordialloc	Heatherton Main Drain	Flash
134A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
136B	Chute Street	Mordialloc	Heatherton Main Drain	Flash
136A	Chute Street	Mordialloc	Heatherton Main Drain	Flash
2/138	Chute Street	Mordialloc	Heatherton Main Drain	Flash
140	Chute Street	Mordialloc	Heatherton Main Drain	Flash
142	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1/144	Chute Street	Mordialloc	Heatherton Main Drain	Flash
146	Chute Street	Mordialloc	Heatherton Main Drain	Flash
154	Chute Street	Mordialloc	Heatherton Main Drain	Flash
156	Chute Street	Mordialloc	Heatherton Main Drain	Flash
1	Clare Street	Parkdale	Heatherton Main Drain	Flash
2C	Clare Street	Parkdale	Heatherton Main Drain	Flash
2	Clare Street	Parkdale	Heatherton Main Drain	Flash
4/3	Clare Street	Parkdale	Heatherton Main Drain	Flash
2/4	Clare Street	Parkdale	Heatherton Main Drain	Flash
59	Cochranes Road	Moorabbin	Swamp Rd Drain	Flash
63	Cochranes Road	Moorabbin	Swamp Rd Drain	Flash
65	Cochranes Road	Moorabbin	Swamp Rd Drain	Flash
21	Cox Street	Cheltenham	Heatherton Main Drain	Flash
23	Cox Street	Cheltenham	Heatherton Main Drain	Flash
24	Cox Street	Cheltenham	Heatherton Main Drain	Flash
25	Cox Street	Cheltenham	Heatherton Main Drain	Flash
26	Cox Street	Cheltenham	Heatherton Main Drain	Flash
27	Cox Street	Cheltenham	Heatherton Main Drain	Flash
1/29	Cox Street	Cheltenham	Heatherton Main Drain	Flash
2/29	Cox Street	Cheltenham	Heatherton Main Drain	Flash
13	Craigmore Avenue	Mentone	Heatherton Main Drain	Flash
15	Craigmore Avenue	Mentone	Heatherton Main Drain	Flash
1/1	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
2/2	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
4	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
1/6	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
2/6	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
3/6	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
4/6	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
1/8	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2/8	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
3/8	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
4/8	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
1/10	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
2/10	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
3/10	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
3/12	Crown Avenue	Mordialloc	Heatherton Main Drain	Flash
8	Daniel Court	Mentone	Heatherton Main Drain	Flash
10	Daniel Court	Mentone	Heatherton Main Drain	Flash
12	Daniel Court	Mentone	Heatherton Main Drain	Flash
1/70	Davey Street	Parkdale	Heatherton Main Drain	Flash
2/70	Davey Street	Parkdale	Heatherton Main Drain	Flash
3/70	Davey Street	Parkdale	Heatherton Main Drain	Flash
8	Edward Street	Mordialloc	Heatherton Main Drain	Flash
9	Edward Street	Mordialloc	Heatherton Main Drain	Flash
10	Edward Street	Mordialloc	Heatherton Main Drain	Flash
11	Edward Street	Mordialloc	Heatherton Main Drain	Flash
31	Ellen Street	Parkdale	Heatherton Main Drain	Flash
33	Ellen Street	Parkdale	Heatherton Main Drain	Flash
11	Elliot Street	Parkdale	McKay St Drain	Flash
13	Elliot Street	Parkdale	McKay St Drain	Flash
14	Elliot Street	Parkdale	McKay St Drain	Flash
15	Elliot Street	Parkdale	McKay St Drain	Flash
1/16	Elliot Street	Parkdale	McKay St Drain	Flash
46	Elliot Street	Mordialloc	Heatherton Main Drain	Flash
48	Elliot Street	Mordialloc	Heatherton Main Drain	Flash
6	Eunice Drive	Cheltenham	Heatherton Main Drain	Flash
8	Eunice Drive	Cheltenham	Heatherton Main Drain	Flash
10	Eunice Drive	Cheltenham	Heatherton Main Drain	Flash
12	Eunice Drive	Cheltenham	Heatherton Main Drain	Flash
14	Eunice Drive	Cheltenham	Heatherton Main Drain	Flash
16	Eunice Drive	Cheltenham	Heatherton Main Drain	Flash
17	Eunice Drive	Cheltenham	Heatherton Main Drain	Flash
18	Eunice Drive	Cheltenham	Heatherton Main Drain	Flash
1	Gainsborough Road	Mentone	Heatherton Main Drain	Flash
2	Gainsborough Road	Mentone	Heatherton Main Drain	Flash
2	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
3	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
1/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
2/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
3/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
4/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
5/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
6/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
7/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
8/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
9/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
10/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
11/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
12/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
13/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
14/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
15/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
16/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
17/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
18/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
19/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
20/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
21/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
22/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
23/4	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
1/5	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
2/5	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
3/5	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
7	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
8	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
1/9	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
2/9	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
3/9	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
4/9	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
10	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
1/11	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
2/11	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
3/11	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
12	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
1/14	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
2/14	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
3/14	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
4/14	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
5/14	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
16	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
18	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
1/21	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
2/21	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
3/21	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
24	Gipps Avenue	Mordialloc	Heatherton Main Drain	Flash
6	Glyn Court	Cheltenham	Argus St Drain	Flash
9	Glyn Court	Cheltenham	Argus St Drain	Flash
1	Governor Road	Mordialloc	Heatherton Main Drain	Flash
3	Governor Road	Mordialloc	Heatherton Main Drain	Flash
5B	Governor Road	Mordialloc	Heatherton Main Drain	Flash
5A	Governor Road	Mordialloc	Heatherton Main Drain	Flash
1/7	Governor Road	Mordialloc	Heatherton Main Drain	Flash
2/7	Governor Road	Mordialloc	Heatherton Main Drain	Flash
3/7	Governor Road	Mordialloc	Heatherton Main Drain	Flash
4/7	Governor Road	Mordialloc	Heatherton Main Drain	Flash
9	Governor Road	Mordialloc	Heatherton Main Drain	Flash
11	Governor Road	Mordialloc	Heatherton Main Drain	Flash
13	Governor Road	Mordialloc	Heatherton Main Drain	Flash
15	Governor Road	Mordialloc	Heatherton Main Drain	Flash
17	Governor Road	Mordialloc	Heatherton Main Drain	Flash
1/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
2/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
3/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
4/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
5/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
6/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
7/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
8/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
9/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
10/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
11/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
12/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
13/19	Governor Road	Mordialloc	Heatherton Main Drain	Flash
21	Governor Road	Mordialloc	Heatherton Main Drain	Flash
27	Governor Road	Mordialloc	Heatherton Main Drain	Flash
29	Governor Road	Mordialloc	Heatherton Main Drain	Flash
47	Governor Road	Mordialloc	Heatherton Main Drain	Flash
49	Governor Road	Mordialloc	Heatherton Main Drain	Flash
1/51	Governor Road	Mordialloc	Heatherton Main Drain	Flash
2/51	Governor Road	Mordialloc	Heatherton Main Drain	Flash
53	Governor Road	Mordialloc	Heatherton Main Drain	Flash
55	Governor Road	Mordialloc	Heatherton Main Drain	Flash
60-68	Governor Road	Mordialloc	Heatherton Main Drain	Flash
78	Governor Road	Mordialloc	Heatherton Main Drain	Flash
80	Governor Road	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
82	Governor Road	Mordialloc	Heatherton Main Drain	Flash
84	Governor Road	Mordialloc	Heatherton Main Drain	Flash
86	Governor Road	Mordialloc	Heatherton Main Drain	Flash
88	Governor Road	Mordialloc	Heatherton Main Drain	Flash
90-94	Governor Road	Mordialloc	Heatherton Main Drain	Flash
27B	Grange Road	Cheltenham	Heatherton Main Drain East Branch	Flash
27	Grange Road	Cheltenham	Heatherton Main Drain East Branch	Flash
29A	Grange Road	Cheltenham	Heatherton Main Drain East Branch	Flash
31-33	Grange Road	Cheltenham	Heatherton Main Drain East Branch	Flash
7	Grey Street	Parkdale	Heatherton Main Drain	Flash
12	Grey Street	Parkdale	Heatherton Main Drain	Flash
14	Grey Street	Parkdale	Heatherton Main Drain	Flash
16	Grey Street	Parkdale	Heatherton Main Drain	Flash
38	Herald Street	Cheltenham	Heatherton Main Drain	Flash
1/40	Herald Street	Cheltenham	Heatherton Main Drain	Flash
2/40	Herald Street	Cheltenham	Heatherton Main Drain	Flash
74	Herald Street	Cheltenham	Heatherton Main Drain	Flash
76	Herald Street	Cheltenham	Heatherton Main Drain	Flash
24-26	Hibiscus Avenue	Cheltenham	Heatherton Main Drain East Branch	Flash
28	Hibiscus Avenue	Cheltenham	Heatherton Main Drain East Branch	Flash
30	Hibiscus Avenue	Cheltenham	Heatherton Main Drain East Branch	Flash
1/1	Jennifer Avenue	Parkdale	Heatherton Main Drain	Flash
3/1	Jennifer Avenue	Parkdale	Heatherton Main Drain	Flash
4/1	Jennifer Avenue	Parkdale	Heatherton Main Drain	Flash
1/1-3	Karen Street	Highett	Argus St Drain	Flash
2/1-3	Karen Street	Highett	Argus St Drain	Flash
3/1-3	Karen Street	Highett	Argus St Drain	Flash
13	Keamy Avenue	Cheltenham	Argus St Drain	Flash
15	Keamy Avenue	Cheltenham	Argus St Drain	Flash
17	Keamy Avenue	Cheltenham	Argus St Drain	Flash
19	Keamy Avenue	Cheltenham	Argus St Drain	Flash
15	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
17	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
19	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
21	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
1/23	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
2/23	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
3/23	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
4/23	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
24	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
25	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
26	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth 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	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
30	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
32	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
34	Keiller Avenue	Parkdale	Heatherton Main Drain	Flash
41	Keith Street	Parkdale	Heatherton Main Drain	Flash
43	Keith Street	Parkdale	Heatherton Main Drain	Flash
45	Keith Street	Parkdale	Heatherton Main Drain	Flash
47	Keith Street	Parkdale	Heatherton Main Drain	Flash
47A	Keith Street	Parkdale	Heatherton Main Drain	Flash
49	Keith Street	Parkdale	Heatherton Main Drain	Flash
51	Keith Street	Parkdale	Heatherton Main Drain	Flash
74	Keith Street	Parkdale	Heatherton Main Drain	Flash
2/76	Keith Street	Parkdale	Heatherton Main Drain	Flash
1/88	Keith Street	Parkdale	Heatherton Main Drain	Flash
2/88	Keith Street	Parkdale	Heatherton Main Drain	Flash
21A	Kershaw Street	Parkdale	McKay St Drain	Flash
21B	Kershaw Street	Parkdale	McKay St Drain	Flash
4/28	Kershaw Street	Parkdale	McKay St Drain	Flash
30	Kershaw Street	Parkdale	McKay St Drain	Flash
39	Kershaw Street	Mordialloc	Heatherton Main Drain	Flash
41	Kershaw Street	Mordialloc	Heatherton Main Drain	Flash
42	Kershaw Street	Mordialloc	Heatherton Main Drain	Flash
1/44	Kershaw Street	Mordialloc	Heatherton Main Drain	Flash
2/44	Kershaw Street	Mordialloc	Heatherton Main Drain	Flash
46	Kershaw Street	Mordialloc	Heatherton Main Drain	Flash
7A	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
9	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
20	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
22	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
1/24	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
2/24	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
3/24	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
26	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
28	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
30	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
32	Kingston Street	Mordialloc	Heatherton Main Drain	Flash
2	Lamana Road	Mordialloc	Heatherton Main Drain	Flash
4	Lamana Road	Mordialloc	Heatherton Main Drain	Flash
2	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
2A	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
1/3	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
3/3	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
4	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
5	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
6	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
7	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
8	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
10	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
12	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
14	Lawborough Avenue	Parkdale	Heatherton Main Drain	Flash
1	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
2	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
3	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
4	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
5	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
6	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
7	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
8	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
9	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
10	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
11	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
12	Lincoln Drive	Cheltenham	Heatherton Main Drain	Flash
2/146	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
1/148	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
2/148	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
10/156	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
11/156	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
12/156	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
13/156	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
14/156	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
15/156	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
24/156	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
25/156	Lower Dandenong Road	Parkdale	Heatherton Main Drain	Flash
159	Lower Dandenong Road	Mentone	Heatherton Main Drain	Flash
161	Lower Dandenong Road	Mentone	Heatherton Main Drain	Flash
163	Lower Dandenong Road	Mentone	Heatherton Main Drain	Flash
165B	Lower Dandenong Road	Mentone	Heatherton Main Drain	Flash
165A	Lower Dandenong Road	Mentone	Heatherton Main Drain	Flash
4	Macao Court	Cheltenham	Heatherton Main Drain	Flash
6	Macao Court	Cheltenham	Heatherton Main Drain	Flash
8	Macao Court	Cheltenham	Heatherton Main Drain	Flash
38	Macgregor Street	Parkdale	Heatherton Main Drain	Flash
40	Macgregor Street	Parkdale	Heatherton Main Drain	Flash
40A	Macgregor Street	Parkdale	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2	Madison Court	Cheltenham	Heatherton Main Drain	Flash
4	Madison Court	Cheltenham	Heatherton Main Drain	Flash
44	Mckay Street	Mordialloc	Heatherton Main Drain	Flash
1	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
2	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
3	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
5	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
7	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
9	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
11	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
13	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
15	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
17	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
19	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
21	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
69	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
71	Mcswain Street	Parkdale	Heatherton Main Drain	Flash
3	Meribah Court	Parkdale	Heatherton Main Drain	Flash
4A-4B	Meribah Court	Parkdale	Heatherton Main Drain	Flash
4	Meribah Court	Parkdale	Heatherton Main Drain	Flash
5	Meribah Court	Parkdale	Heatherton Main Drain	Flash
15	Morris Street	Parkdale	Heatherton Main Drain	Flash
17	Morris Street	Parkdale	Heatherton Main Drain	Flash
19	Morris Street	Parkdale	Heatherton Main Drain	Flash
31	Morris Street	Parkdale	Heatherton Main Drain	Flash
1-5	Myrtle Street	Mordialloc	Heatherton Main Drain	Flash
38	Nancy Street	Cheltenham	Heatherton Main Drain	Flash
17	Newry Street	Cheltenham	Argus St Drain	Flash
1/5-7	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
2/5-7	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
3/5-7	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
4/5-7	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
5/5-7	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
6/5-7	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
7/5-7	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
8/5-7	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
6	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
1/8	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
1/9-11	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
2/9-11	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
3/9-11	Radcliff Avenue	Cheltenham	Argus St Drain	Flash
1	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
3	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
4	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
5	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
6	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
7	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
8	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
10	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
12	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
14	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
16	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
18	Rosewarne Avenue	Cheltenham	Argus St Drain	Flash
85	Scarlet Street	Mordialloc	Heatherton Main Drain	Flash
2	Second Avenue	Moorabbin Airport	Heatherton Main Drain East Branch	Flash
1	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
3	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
5	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
6	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
7	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
8	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
9	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
10	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
11	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
12	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
13	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
14	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
15	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
16	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
17	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
19	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
21	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
23	Sharan Avenue	Mentone	Heatherton Main Drain	Flash
49	Shearson Crescent	Mentone	Heatherton Main Drain	Flash
5	Shirlan Street	Cheltenham	Heatherton Main Drain	Flash
10	Shirlan Street	Cheltenham	Heatherton Main Drain	Flash
9	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
11	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
12	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
13	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
14	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
16	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
18	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
20	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
22	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
24	Snowdon Drive	Cheltenham	Heatherton Main Drain	Flash
6	Southern Road	Mentone	Heatherton Main Drain	Flash
29	Southern Road	Mentone	Heatherton Main Drain	Flash
34	Spray Avenue	Mordialloc	Heatherton Main Drain	Flash
1	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
3	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
7C	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
7B	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
19	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
21	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
23	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
25	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
27A	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
31	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
33	Steedman Street	Mordialloc	Heatherton Main Drain	Flash
13-19	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
21	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
23	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
25	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
4/32	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
37	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
39	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
41	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
43	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
45	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
47	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
49	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
6/51	Taunton Drive	Cheltenham	Heatherton Main Drain East Branch	Flash
5	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
2/5A	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
7	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
9	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
10	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
11	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
12	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
13	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
14	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
15	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
16	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
17	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
18	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
19	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
20	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
21	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
22	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
23	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
24	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
25	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
27	Tiffany Avenue	Cheltenham	Heatherton Main Drain	Flash
72	Voltri Street	Mentone	Heatherton Main Drain	Flash
74	Voltri Street	Mentone	Heatherton Main Drain	Flash
1/96	Voltri Street	Mentone	Heatherton Main Drain East Branch	Flash
3/96	Voltri Street	Mentone	Heatherton Main Drain East Branch	Flash
4/96	Voltri Street	Mentone	Heatherton Main Drain East Branch	Flash
98	Voltri Street	Mentone	Heatherton Main Drain East Branch	Flash
1	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
1A	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
2	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
3	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
4	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
5	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
7	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
9	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
11	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
13	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
15	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
17	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
19	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
21	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
23	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
25	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
27	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
29A	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
29B	Waratah Avenue	Mordialloc	Heatherton Main Drain	Flash
101	Warren Road	Parkdale	Heatherton Main Drain	Flash
1/103	Warren Road	Parkdale	Heatherton Main Drain	Flash
2/103	Warren Road	Parkdale	Heatherton Main Drain	Flash
105A	Warren Road	Parkdale	Heatherton Main Drain	Flash
112	Warren Road	Mordialloc	Heatherton Main Drain	Flash
1/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
2/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
3/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
4/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
5/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
6/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
6A/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
15/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
16/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
17/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
18/114	Warren Road	Mordialloc	Heatherton Main Drain	Flash
116-120	Warren Road	Mordialloc	Heatherton Main Drain	Flash
121	Warren Road	Parkdale	Heatherton Main Drain	Flash
123	Warren Road	Parkdale	Heatherton Main Drain	Flash
126	Warren Road	Mordialloc	Heatherton Main Drain	Flash
253	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
255	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
257	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
259	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
269	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
30/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
31/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
32/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
33/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
34/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
52/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
53/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
54/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
55/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
56/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
57/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
58/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
59/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
60/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
61/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
62/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
63/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
64/310	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
332	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
334	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
336	Warrigal Road	Cheltenham	Heatherton Main Drain	Flash
400	Warrigal Road	Heatherton	Heatherton Main Drain	Flash
1-7	Wells Road	Mordialloc	Heatherton Main Drain	Flash
9	Wells Road	Mordialloc	Heatherton Main Drain	Flash
23-25	Wells Road	Mordialloc	Heatherton Main Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
62	White Street	Mordialloc	Heatherton Main Drain	Flash
64	White Street	Mordialloc	Heatherton Main Drain	Flash
66	White Street	Mordialloc	Heatherton Main Drain	Flash
68	White Street	Mordialloc	Heatherton Main Drain	Flash
70	White Street	Mordialloc	Heatherton Main Drain	Flash
1/72	White Street	Mordialloc	Heatherton Main Drain	Flash
2/72	White Street	Mordialloc	Heatherton Main Drain	Flash
1/74	White Street	Mordialloc	Heatherton Main Drain	Flash
2/74	White Street	Mordialloc	Heatherton Main Drain	Flash
3/74	White Street	Mordialloc	Heatherton Main Drain	Flash
76	White Street	Mordialloc	Heatherton Main Drain	Flash
81	White Street	Mordialloc	Heatherton Main Drain	Flash
83A	White Street	Mordialloc	Heatherton Main Drain	Flash
83B	White Street	Mordialloc	Heatherton Main Drain	Flash
85	White Street	Mordialloc	Heatherton Main Drain	Flash
87	White Street	Mordialloc	Heatherton Main Drain	Flash
89	White Street	Mordialloc	Heatherton Main Drain	Flash
91	White Street	Mordialloc	Heatherton Main Drain	Flash
93	White Street	Mordialloc	Heatherton Main Drain	Flash
2/95-97	White Street	Mordialloc	Heatherton Main Drain	Flash
3/95-97	White Street	Mordialloc	Heatherton Main Drain	Flash
101-103	White Street	Mordialloc	Heatherton Main Drain	Flash
105	White Street	Mordialloc	Heatherton Main Drain	Flash
15	Willow Avenue	Cheltenham	Heatherton Main Drain	Flash
17	Willow Avenue	Cheltenham	Heatherton Main Drain	Flash
19	Willow Avenue	Cheltenham	Heatherton Main Drain	Flash
21	Willow Avenue	Cheltenham	Heatherton Main Drain	Flash
4/16	Woods Avenue	Mordialloc	Heatherton Main Drain	Flash
<b>Total</b>				
<b>733</b>				

Table C2.2 – Properties at risk of flooding along the Heatherton Drain catchment in the City of Kingston

## ISOLATION

No major isolation risks exist for areas around Heatherton Drain during a 1% AEP (100yr ARI) event. Some localised short-duration isolation may occur due to flash flooding.

## ESSENTIAL INFRASTRUCTURE

- A Sewerage Pumping Station and Sewerage Emergency Relief Point located on Cedric Street within floodwaters during a 5% AEP (20yr ARI) event
- Sewerage Pumping Station located on the corner of Chute Street and Bear Street within floodwaters during a 1% AEP (100yr ARI) event
- Sewerage Emergency Relief Point located on White Street within floodwaters during a 5% AEP (20yr ARI) 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 Kingston is available via the website at: [https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23\\_Kingston\\_LAM.pdf](https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23_Kingston_LAM.pdf)

Apart from the roads outlined below, all other essential infrastructure and services areas around Heatherton Drain 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 Heatherton Drain. Check the VicRoads website for more details: [alerts.vicroads.vic.gov.au](https://alerts.vicroads.vic.gov.au)

VicRoads Roads flooded (above 300mm) in a 1% AEP (100yr ARI) event			
• Boundary Road, Mordialloc at Canterbury Road			
• Centre Dandenong Road, Cheltenham at Jells Road			
• Chesterville Road, Cheltenham at Bernard Street			
• Keys Road, Moorabbin at Freighter Road			
• South Road, Moorabbin near Warrigal Road			
• White Street, Mordialloc east of Warren Road and at Myrtle Street			
Table C2.3 – VicRoads Possible Road Closures during a flooding event Kingston City Council Roads flooded (above 300mm) in a 1% AEP (100yr ARI) event			
CHELTENTHAM	HEATHERTON	MOORABBIN AIRPORT	
• Argus Street	• St Andrews Drive	• Second Avenue	• McKay Street
• Brampton Street	HIGHETT	MORDIALLOC	• Myrtle Street
• Cavanagh Street	• Dawn Street	• Avlona Street	• Percy Street
• Chelsea Street	• Karen Street	• Beach Avenue	• Spray Avenue
• Darren Court	MENTONE	• Bear Street	• Waratah Avenue
• Eunice Drive	• Blackwood Avenue	• Bertram Street	• Wells Road
• Evergreen Circuit	• Broome Avenue	• Bradshaw Street	OAKLEIGH SOUTH
• Grange Road	• Cedar Street	• Brownfield Street	• Abercrombie Street
• Herald Street	• Delville Avenue	• Cedric Street	• Axford Crescent
• Hibiscus Avenue	• Derwent Street	• Chute Street	• Louisa Court
• Justin Court	• Sharan Avenue	• Crown Avenue	• Robyn Court
• Lincoln Drive	• Shearson Crescent	• Edward Street	• Sherbrooke Avenue
• Macao Court	• Southern Road	• Elliot Street	PARKDALE
• Nancy Street	• Tamar Court	• Gipps Avenue	• Clare Street
• Radcliff Avenue	MOORABBIN	• Governor Road	• Grey Street
• Remont Court	• Alex Avenue	• Kareela Street	• Keiller Avenue
• Rosewarne Avenue	• Corchranes Road	• Kershaw Street	• Keith Street
• Snowdon Drive	• Corr Street	• Kingston Street	• Lawborough Avenue
			• McSwain Street

---

• Taunton Drive	• Wren Road	• Lamana Road	• Meribah Court
• Tiffany Avenue		• Manikato Avenue	

Table C2.4 – Kingston City Council Possible Road Closures during a flooding event

## 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
Argus Street	Heatherton Drain	48,720m <sup>2</sup>	200ML	28.8m AHD	29.0m AHD	29.7m AHD	High A	21	78B12
South Road	Heatherton Drain	86,160m <sup>2</sup>	748ML	41.6m AHD	41.8m AHD	N/A	Very Low	0	78D7
Southern Road	Heatherton Drain	41,272m <sup>2</sup>	132ML	15.0m AHD	15.3m AHD	15.5m AHD	High C	12	87F5
Sunmore Close	Local Drainage	4,270m <sup>2</sup>	3.2ML	38.6m AHD	38.8m AHD	38.8m AHD	Very Low	0	78D8

Table C2.5 – Melbourne Water Retarding Basins within the Heatherton Drain catchment in the City of Kingston

Kingston City Council Retarding Basin	Location	Area	Melway Reference
Augusta Square	Augusta Square, Heatherton	4,000m <sup>2</sup>	78D12
Barkers Street	Barkers Street Reserve, Heatherton	3,000m <sup>2</sup>	78E8
Bear Street	Bear Street, Mordialloc	1,200m <sup>2</sup>	87G12
Glenelg Drive	Mentone Racecourse Reserve, Mentone	4,000m <sup>2</sup>	87D5
Hall Mark Road	Doug Denyer Reserve, Mordialloc	35,000m <sup>2</sup>	87H12
Oakmont Crescent	Oakmont Crescent, Heatherton	2,000m <sup>2</sup>	78C12
St Georges Crescent	St Georges Crescent, Heatherton	4,500m <sup>2</sup>	78D12
Sunningdale Way	The Heath Common, Heatherton	5,500m <sup>2</sup>	78E11

Table C2.6 – Kingston City Council Retarding Basins within the Heatherton Main Drain catchment

### PUMPING STATIONS

Kingston City Council Pumping Station	Suburb	No. of Pumps	Capacity
Bear Street	Mordialloc	2	200L/s

Table C2.7 – Melbourne Water Pumping Stations along the Heatherton Main Drain

No formal Levees exist along the Heatherton Drain in Heatherton, Cheltenham, Mentone, Parkdale & Mordialloc.

## SEWERAGE INFRASTRUCTURE

Sewerage Infrastructure of note during a severe flood event located within the City of Kingston are contained within the following two tables. To view their locations, view mapping in Appendix F.

### SEWER PUMPING STATIONS

Melbourne Water Sewerage Pumping Station	On Drain / Waterway	Location	Melway Reference
Mordialloc No1 Pumping Station	Local Drainage	Intersection of Chute Street Bear Street, Mordialloc	87G12
Mordialloc No2 Pumping Station	Heatherton Drain	South side of Cedric Street near Chute Street, Mordialloc	87G10

Table C2.8 – Sewer Pumping Stations within the Heatherton Main Drain Catchment in the City of Kingston

### SEWER EMERGENCY RELIEF POINTS

On Drain / Waterway	Location	Melway Reference
Heatherton Drain	South side of Cedric Street near Chute Street, Mordialloc	87G10
Heatherton Drain	North side of White Street at Manikato Avenue, Mordialloc	87G11

Table C2.9 – Sewer Emergency Relief Points in the Heatherton Main Drain Catchment in the City of Kingston

## COMMAND, CONTROL & COORDINATION

VICSES will assume overall control of the response to flood incidents. Other agencies will be requested to support operations as detailed in this Plan. Control and coordination of a flood incident shall be carried out at the lowest effective level and in accordance with the State Emergency Response Plan (EMMV Part 3). During significant events, VICSES will conduct incident management using multi-agency resources.

## FLOOD IMPACTS & REQUIRED ACTIONS

The table below is a breakdown of the number of properties flooded in a 1% AEP (100yr ARI) event. Refer to the following intelligence card/s for Mentone for more details.

Land Use Flooded in a 1% AEP Event	Total
Residential	668
Commercial	1
Industrial	61
Public Land	3
Rural	0
<b>Total</b>	<b>733</b>

Table C2.10 – Breakdown of likely land use flooded in the Heatherton Man Drain Catchment in Kingston during a 1% AEP event

## FLOOD INTELLIGENCE CARD – MENTONE GAUGE, HEATHERTON MAIN DRAIN

Version 3 – September 2017



*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.*

LOCATION	<b>Southern Road Retarding Basin, Craigmore Avenue, Mentone</b>
MELWAY REFERENCE:	<b>87E5</b>
STREAM:	<b>Heatherton Main Drain</b>
GAUGE NUMBER:	<b>228262A</b>
GAUGE ZERO:	<b>10.63m AHD</b>
GAUGE TYPE	<b>Stream Level &amp; Rain</b>

MINOR:	<b>N/A</b>
MODERATE:	<b>N/A</b>
MAJOR	<b>N/A</b>
EMBANKMENT HEIGHT:	<b>15.5m AHD</b>
TELEMETRIC/MANUAL	<b>Telemetric</b>
HIGHEST RECORDED FLOOD:	<b>4.45m (4<sup>th</sup> February 2011)</b>

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
3.24m	29 <sup>th</sup> December 2016 Flood Level Peak		
4.04m	1% AEP (100yr ARI) Flood Level	<p><b>Properties Flooded (above 300mm depth) (Properties likely at risk before this Level)</b></p> <p><b>733 Properties in Total</b></p> <p><b>Argus St Drain</b></p> <ul style="list-style-type: none"> <li>• 2 &amp; 4 Bernard Street, Cheltenham</li> <li>• 6, 8 &amp; 12 Chelsea Street, Cheltenham</li> <li>• 6 &amp; 9 Glyn Court, Cheltenham</li> <li>• 1/1-3, 2/1-3 &amp; 3/1-3 Karen Street, Highett</li> <li>• 13, 15, 17 &amp; 19 Keamy Avenue, Cheltenham</li> <li>• 17 Newry Street, Cheltenham</li> <li>• 1/5-7, 2/5-7, 3/5-7, 4/5-7, 5/5-7, 6/5-7, 7/5-7, 8/5-7, 6, 1/8 &amp; Units 1-3/9-11 Radcliff Avenue, Cheltenham</li> <li>• 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 16 &amp; 18 Rosewarne Avenue, Cheltenham</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<p><b>Heatherton Main Drain</b></p> <ul style="list-style-type: none"> <li>• 3/11 &amp; 15 Alma Road, Parkdale</li> <li>• 30, 32 &amp; 34 Balmoral Drive, Parkdale</li> <li>• 10/111 &amp; 11/111 Barkly Street, Mordialloc</li> <li>• 1, 3, 18-20 &amp; 22 Beach Avenue, Mordialloc</li> <li>• 23, 7/24, 8/24, 9/24, 10/24, 11/24, 12/24, 25, 30, 56, Units 1-5/61 &amp; 63 Bear Street, Mordialloc</li> <li>• 2/3, 5, 1/7, 2/7, 9A, 9B, 1/17, 2/17, 19, 4/19 &amp; 2/21 Belle Crescent, Mordialloc</li> <li>• 1, 2, 3, 4, 5, 6, 7, 8, 9 &amp; 10 Bertram Street, Mordialloc</li> <li>• 86 &amp; 88 Blackwood Avenue, Mentone</li> <li>• 11, 13, 15 &amp; 17 Boundary Road, Mordialloc</li> <li>• 3A, 5, 7, Units 1-15/9, 11, 13, 15, 17, 19, 21 &amp; 23 Bradshaw Street, Mordialloc</li> <li>• 36, 37, 38, 38A &amp; 42 Brampton Street, Cheltenham</li> <li>• 2 Brisbane Terrace, Parkdale</li> <li>• 46, 46A, 46B, 48, 59, 61 &amp; 63 Brownfield Street, Mordialloc</li> <li>• 15 Cedar Street, Mentone</li> <li>• 45, 47, 48, 49, 50, 51, 52, 53, 54 &amp; 55 Cedric Street, Mordialloc</li> <li>• 159, 161, 204, 206, 208, 210 &amp; 212 Centre Dandenong Road, Cheltenham</li> <li>• 2, 1/4, 2/4, 6A, 8, 10A, 10B, 12, 12A, 14, 1/16, 2/16, Units 1-16/18-24, 26, 28, 29, 31, 31A, 32, 32A, 33, 35B, 37C, 2/43, 45, 1/47, 2/47, 65, 67, 69, 1/73, 2/73, 75, 77, 79, 81, 1/83, 2/83, 85A, 1/87, 2/87, 89, 97, 1/99, 101, 103, 2/104, 3/104, 4/104, 105, 106, 106A, 107, 108, 1/110, 2/110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 134, 134A, 136A, 136B, 140, 142, 1/144, 146, 154 &amp; 156 Chute Street, Mordialloc</li> <li>• 1, 2C, 2, 4/3 &amp; 2/4 Clare Street, Parkdale</li> <li>• 21, 23, 24, 25, 26, 27, 1/29 &amp; 2/29 Cox Street, Cheltenham</li> <li>• 13 &amp; 15 Craigmores Avenue, Mentone</li> <li>• 1/1, 2/2, 4, 1/6, 2/6, 3/6, 4/6, 1/8, 2/8, 3/8, 4/8, Units 1-3/10 &amp; 3/12 Crown Avenue, Mordialloc</li> <li>• 8, 10 &amp; 12 Daniel Court, Mentone</li> <li>• 1/70, 2/70 &amp; 3/70 Davey Street, Parkdale</li> <li>• 8, 9, 10 &amp; 11 Edward Street, Mordialloc</li> <li>• 31 &amp; 33 Ellen Street, Parkdale</li> <li>• 46 &amp; 48 Elliot Street, Mordialloc</li> <li>• 6, 8, 10, 12, 14, 16, 17 &amp; 18 Eunice Drive, Cheltenham</li> <li>• 1 &amp; 2 Gainsborough Road, Mentone</li> <li>• 2, 3, Units 1-23/4, Units 1-3/5, 7, 8, Units 1-4/9, 10, Units 1-3/11, 12, Units 1-5/14, 16, 18, Units 1-3/21 &amp; 24 Gipps Avenue, Mordialloc</li> <li>• 1, 3, 5B, 5A, 1/7, 2/7, 3/7, 4/7, 9, 11, 13, 15, 17, Units 1-13/19, 21, 27, 29, 47, 49, Units 1-2/51, 53, 55, 60-68, 78, 80, 82, 84, 86, 88 &amp; 90-94 Governor Road, Mordialloc</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• 7, 12, 14 &amp; 16 Grey Street, Parkdale</li> <li>• 38, 1/40, 2/40, 74 &amp; 76 Herald Street, Cheltenham</li> <li>• 1/1, 3/1 &amp; 4/1 Jennifer Avenue, Parkdale</li> <li>• 15, 17, 19, 21, 1/23, 2/23, 3/23, 4/23, 24, 25, 26, 28, 30, 32 &amp; 34 Keiller Avenue, Parkdale</li> <li>• 41, 43, 45, 47, 47A, 49, 51, 74, 2/76, 1/88 &amp; 2/88 Keith Street, Parkdale</li> <li>• 39, 41, 42, 1/44, 2/44 &amp; 46 Kershaw Street, Mordialloc</li> <li>• 7A, 9, 20, 22, 1/24, 2/24, 3/24, 26, 28, 30 &amp; 32 Kingston Street, Mordialloc</li> <li>• 2 &amp; 4 Lamana Road, Mordialloc</li> <li>• 2, 2A, 1/3, 3/3, 4, 5, 6, 7, 8, 10, 12 &amp; 14 Lawborough Avenue, Parkdale</li> <li>• 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 &amp; 12 Lincoln Drive, Cheltenham</li> <li>• 2/146, 1/148, 2/148, 10/156, 11/156, 12/156, 13/156, 14/156, 15/156, 24/156, 25/156, 159, 161, 163, 165A &amp; 165B Lower Dandenong Road, Parkdale</li> <li>• 4, 6 &amp; 8 Macao Court, Cheltenham</li> <li>• 38, 40 &amp; 40A Macgregor Street, Parkdale</li> <li>• 2 &amp; 4 Madison Court, Cheltenham</li> <li>• 44 Mckay Street, Mordialloc</li> <li>• 1, 2, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 69 &amp; 71 Mcswain Street, Parkdale</li> <li>• 3, 4A-4B, 4 &amp; 5 Meribah Court, Parkdale</li> <li>• 15, 17, 19 &amp; 31 Morris Street, Parkdale</li> <li>• 1-5 Myrtle Street, Mordialloc</li> <li>• 38 Nancy Street, Cheltenham</li> <li>• 85 Scarlet Street, Mordialloc</li> <li>• 1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 21 &amp; 23 Sharan Avenue, Mentone</li> <li>• 49 Shearson Crescent, Mentone</li> <li>• 5 &amp; 10 Shirlian Street, Cheltenham</li> <li>• 9, 11, 12, 13, 14, 16, 18, 20, 22 &amp; 24 Snowdon Drive, Cheltenham</li> <li>• 6 &amp; 29 Southern Road, Mentone</li> <li>• 34 Spray Avenue, Mordialloc</li> <li>• 1, 3, 7C, 7B, 19, 21, 23, 25, 27A, 31 &amp; 33 Steedman Street, Mordialloc</li> <li>• 5, 2/5A, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 &amp; 27 Tiffany Avenue, Cheltenham</li> <li>• 72 &amp; 74 Voltri Street, Mentone</li> <li>• 1, 1A, 2, 3, 4, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29A &amp; 29B Waratah Avenue, Mordialloc</li> <li>• 101, 1/103, 2/103, 105A, 112, Units 1-6/114, 6A/114, Units 15-183/114, 116-120, 121, 123 &amp; 126 Warren Road, Parkdale</li> <li>• 253, 255, 257, 259, 269, Units 30-34/310, Units 52-64/310, 332, 334, 336 &amp; 400</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<p>Warrigal Road, Cheltenham</p> <ul style="list-style-type: none"> <li>• 1-7, 9 &amp; 23-25 Wells Road, Mordialloc</li> <li>• 62, 64, 66, 68, 70, 1/72, 2/72, 1/74, 2/74, 3/74, 76, 81, 83A, 83B, 85, 87, 89, 91, 93, 2/95-7, 3/95-97, 101-103 &amp; 105 White Street, Mordialloc</li> <li>• 15, 17, 19 &amp; 21 Willow Avenue, Cheltenham</li> <li>• 4/16 Woods Avenue, Mordialloc</li> </ul> <p><b>Heatherton Main Drain East Branch</b></p> <ul style="list-style-type: none"> <li>• 27B, 27, 29A &amp; 31-33 Grange Road, Cheltenham</li> <li>• 24-26, 28 &amp; 30 Hibiscus Avenue, Cheltenham</li> <li>• 2 Second Avenue, Moorabbin Airport</li> <li>• 13-19, 21, 23, 25, 4/32, 37, 39, 41, 43, 45, 47, 49 &amp; 6/51 Taunton Drive, Cheltenham</li> <li>• 1/96, 3/96, 4/96 &amp; 98 Voltri Street, Mentone</li> </ul> <p><b>McKay St Drain</b></p> <ul style="list-style-type: none"> <li>• 1/20, 2/20, 3/20, 4/20 &amp; 22 Cedric Street, Parkdale</li> <li>• 11, 13, 14, 15 &amp; 1/16 Elliot Street, Parkdale</li> <li>• 21A, 21B, 4/28 &amp; 30 Kershaw Street, Parkdale</li> </ul> <p><b>Swamp Rd Drain</b></p> <ul style="list-style-type: none"> <li>• 9 &amp; 11 Alex Avenue, Moorabbin</li> <li>• 59, 63 &amp; 65 Cochranes Road, Moorabbin</li> </ul> <p><b>Victor Rd Drain</b></p> <ul style="list-style-type: none"> <li>• 1 &amp; 2 Abercrombie Street, Oakleigh South</li> <li>• 1 &amp; 3 Axford Crescent, Oakleigh South</li> </ul> <p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• St James Terrace Retirement Village on Warrigal Road Cheltenham</li> <li>• Parktone Primary School's Sports Grounds flooded on Robert Street, Parkdale</li> <li>• Elonera Preschool's entrance flooded on Victoria Street, Parkdale</li> <li>• The Elly-Kay Centre (Aged Care Facility) on Elliot Street, Mordialloc may have access restricted with flooding along Elliot, Bradshaw and Brownfield Streets</li> <li>• Nixon Hostel (Aged Care Facility) on Chute Street, Mordialloc may have access restricted with flooding along Chute Street</li> </ul> <p><b>Essential Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• Sewerage Pumping Station and Emergency Relief Point located on Cedric Street, Mordialloc within floodwaters</li> <li>• Sewerage Emergency Relief Point located on White Street within floodwaters</li> <li>• Sewerage Pumping Station located on corner Chute Street and Bear Street within floodwaters</li> </ul> <p><b>Water Over Road (above 300mm depth)</b></p>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<p><b>Victor Road Drain, Oakleigh South</b></p> <ul style="list-style-type: none"> <li>• Abercrombie Street, Oakleigh South</li> <li>• Axford Crescent, Oakleigh South</li> <li>• Louisa Court, Oakleigh South</li> <li>• Robyn Court, Oakleigh South</li> <li>• Sherbrooke Avenue, Oakleigh South</li> </ul> <p><b>Argus Street Drain, Cheltenham</b></p> <ul style="list-style-type: none"> <li>• Karen Street, Highett</li> <li>• Dawn Street, Highett</li> <li>• Chesterville Road, Cheltenham at Bernard Street</li> <li>• Darren Court, Cheltenham</li> <li>• Radcliff Avenue, Cheltenham</li> <li>• Chelsea Street, Cheltenham</li> <li>• Rosewarne Avenue, Cheltenham at Newry Street</li> <li>• Cavanagh Street, Cheltenham at Evergreen Circuit</li> <li>• Evergreen Circuit, Cheltenham</li> </ul> <p><b>Heatherton Main Drain</b></p> <ul style="list-style-type: none"> <li>• South Road, Moorabbin near Warrigal Road</li> <li>• Wren Road, Moorabbin near Warrigal Road</li> <li>• Corr Street, Moorabbin</li> <li>• Alex Avenue, Moorabbin</li> <li>• Cochranes Road, Moorabbin with possible depths &gt;600mm</li> <li>• Keys Road, Moorabbin at Freighter Road</li> <li>• Herald Street, Cheltenham at Elma Road and between Age Street and Argus Street</li> <li>• Argus Street, Cheltenham between Herald Street and Warrigal Road</li> <li>• Remont Court, Cheltenham</li> <li>• St Andrews Drive, Heatherton at Warrigal Road</li> <li>• Macao Court, Cheltenham</li> <li>• Brampton Street, Cheltenham</li> <li>• Eunice Drive, Cheltenham</li> <li>• Lincoln Drive, Cheltenham</li> <li>• Centre Dandenong Road, Cheltenham at Jells Road</li> <li>• Hibiscus Avenue, Cheltenham</li> <li>• Taunton Drive, Cheltenham</li> <li>• Nancy Street, Cheltenham</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Tiffany Avenue, Cheltenham</li> <li>• Justin Court, Cheltenham</li> <li>• Snowdon Drive, Cheltenham</li> <li>• Grange Road, Cheltenham</li> <li>• Second Avenue, Moorabbin Airport</li> <li>• Shearson Crescent, Mentone</li> <li>• Blackwood Avenue, Mentone</li> <li>• Cedar Street, Mentone</li> <li>• Derwent Street, Mentone</li> <li>• Tamar Court, Mentone</li> <li>• Delville Avenue, Mentone</li> <li>• Broome Avenue, Mentone</li> <li>• Southern Road, Mentone between Lower Dandenong Road and Delville Avenue</li> <li>• Sharan Avenue, Mentone</li> <li>• Meribah Court, Parkdale</li> <li>• McSwain Street, Parkdale near Lower Dandenong Road and at Brisbane Terrace</li> <li>• Keith Street, Parkdale</li> <li>• Keiller Avenue, Parkdale</li> <li>• Grey Street, Parkdale</li> <li>• Lawborough Avenue, Parkdale</li> <li>• Clare Street, Parkdale near Warren Road</li> <li>• Waratah Avenue, Mordialloc</li> <li>• Kingston Street, Mordialloc</li> <li>• Brownfield Street, Mordialloc</li> <li>• McKay Street, Mordialloc</li> <li>• Chute Street, Mordialloc between McKay Street and David Street, around Bear Street and between Crown Avenue and Gipps Avenue</li> <li>• Elliot Street, Parkdale and Mordialloc</li> <li>• Cedric Street, Parkdale and Mordialloc</li> <li>• Kershaw Street, Parkdale &amp; Mordialloc</li> <li>• Bradshaw Street, Mordialloc near White Street</li> <li>• White Street, Mordialloc east of Warren Road and at Myrtle Street</li> <li>• Myrtle Street, Mordialloc</li> <li>• Manikato Avenue, Mordialloc</li> <li>• Edward Street, Mordialloc</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Bear Street, Mordialloc west of Chute Street and near Edward Street</li> <li>• Crown Avenue, Mordialloc</li> <li>• Lamana Road, Mordialloc</li> <li>• Avlona Street, Mordialloc</li> <li>• Kareela Street, Mordialloc</li> <li>• Percy Street, Mordialloc</li> <li>• Gipps Avenue, Mordialloc</li> <li>• Bertram Street, Mordialloc</li> <li>• Governor Road, Mordialloc between Chute Street and Boundary Road</li> <li>• Beach Avenue, Mordialloc</li> <li>• Spray Avenue, Mordialloc</li> <li>• Wells Road, Mordialloc</li> <li>• Boundary Road, Mordialloc at Canterbury Road</li> </ul>	
4.45m	4 <sup>th</sup> February 2011 Flood Level Peak		
4.87m		<ul style="list-style-type: none"> <li>• Embankment Level Height at the Southern Road Retarding Basin</li> </ul>	

Table C2.11 – Breakdown of likely consequences at various Mentone gauge level heights along the Heatherton Main Drain with operational considerations

---

## APPENDIX C3 – PARKERS ROAD MAIN DRAIN FLOOD EMERGENCY PLAN

### OVERVIEW OF FLOODING CONSEQUENCES

Parkers Road Main Drain is a drainage system that carries stormwater from approximately the City of Kingston Municipal Offices in Cheltenham to Mordialloc where it discharges directly into Port Phillip Bay. The catchment responds to flash flooding.

Key Infrastructure at risk in the Parkers Road Main Drain catchment is areas of the Cheltenham and Mentone shopping Precincts, with a number of residential properties at risk from overland flow paths as well. Balcombe Road and Warrigal Road near Nepean Highway pose the greatest road infrastructure risks.

### WARNING TIMES

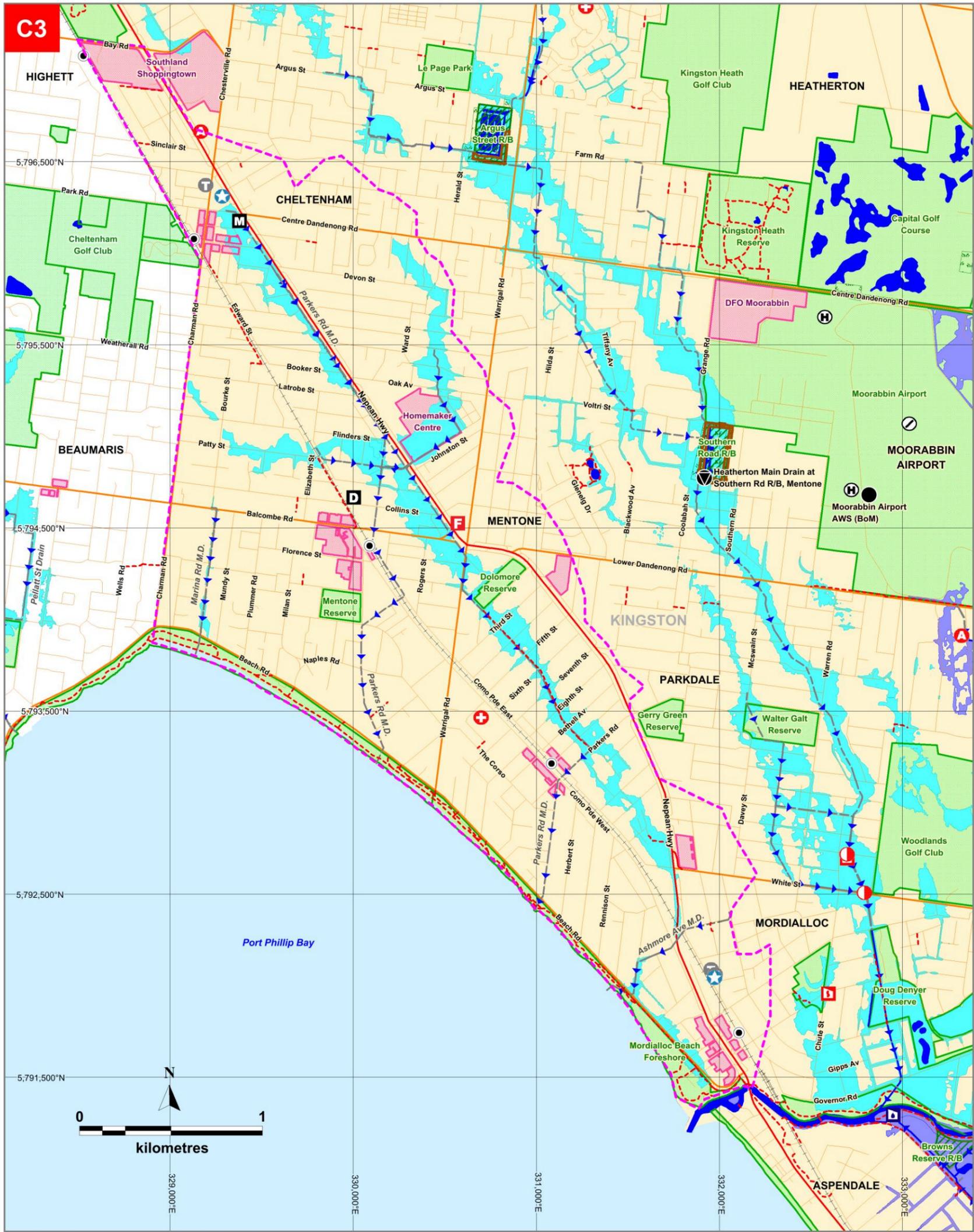
Whilst there are hydrographic/telemetry stations (river gauges) within the municipality, Melbourne Water does not provide any flood warning service at this point, due to the generally short warning times available.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Heatherton Main Drain at Mentone	228262A	At the Southern Rd Retarding Basin, end of Craigmere Avenue, Mentone	✓	✓		87 E5
Sandringham	586184	South East Water's Service Reservoir within the Bayside Waste & Recycling Centre, Talinga Road, Cheltenham		✓		86 D1

Table C3.1 – Hydrographic Monitoring Stations within the Parkers Road Main Drain catchment

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/> or VicSES website <http://www.ses.vic.gov.au/> for any thunderstorm, flood or severe weather warnings present for their area.

AREAS OF FLOOD RISK



Flood Modelling completed by Melbourne Water & Lawson & Treloar, March 2002. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**

1% AEP (100yr ARI) Flooding  
**C3 - Areas of flood risk around the Parkers Rd Main Drain**

- |                                 |                                  |                    |
|---------------------------------|----------------------------------|--------------------|
| Building                        | Bicycle / Walking Trail          | Ambulance Station  |
| Area of Interest                | Melbourne Water Stormwater Drain | MFB Fire Station   |
| 1% AEP Flash Flood Extent       | River / Creek / Channel          | Municipal Offices  |
| 1% AEP Riverine Flood Extent    | Levee / Embankment               | Telephone Exchange |
| Waterbody                       | Sewer Emergency Relief Structure | Stream level Gauge |
| Shopping Precinct               | Drainage Pumping Station         | Police Station     |
| Melbourne Water Retarding Basin | Sewer Pumping Station            | Rain Gauge         |
| Natural Wetland                 | Municipal Depot                  | Airport / Airfield |
| Area Boundary for this Appendix | Power Terminal Station           | Helipad            |
|                                 |                                  | Hospital           |



**Melbourne Water**  
 This map 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.

Figure C3 – Areas affected in Mentone, Parkdale & Mordialloc around Parkers Road Main Drain in the City of Kingston

## PROPERTIES AT FLOOD RISK

Properties listed in the table below are at risk from flooding during a 1% AEP event. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Parkers Road Main Drain (Melbourne Water and Lawsom & Treloar, March 2002) flood mapping and risk assessment programs.

*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 during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
10-12	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
11-13	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
14	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
16	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
17	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
18-20	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
19	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
21	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
22	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
23	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
24	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
26	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
28	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
30	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
32	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
34	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
36-38	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
40	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
42	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
44	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
1/46	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
2/46	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
3/46	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
2/50	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
3/50	Balcombe Road	Mentone	Parkers Rd Main Drain	Flash
2	Bay Street	Mordialloc	Ashmore Ave Main Drain	Flash
182	Beach Road	Parkdale	Ashmore Ave Main Drain	Flash
1/182	Beach Road	Parkdale	Ashmore Ave Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2/182	Beach Road	Parkdale	Ashmore Ave Main Drain	Flash
192	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
192A	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
1/193	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
2/193	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
194	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
194A	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
195	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
1/196	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
200	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
200A	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
1/201-202	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
2/201-202	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
3/201-202	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
4/201-202	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
203	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
2/204-205	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
3/204-205	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
4/204-205	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
206	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
207-208	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
209	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
210	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
211	Beach Road	Mordialloc	Ashmore Ave Main Drain	Flash
15	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
16	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
17	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
18	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
19	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
20	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
21	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
22	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
23	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
24	Bethell Avenue	Parkdale	Parkers Rd Main Drain	Flash
1	Blanche Avenue	Parkdale	Parkers Rd Main Drain	Flash
3	Blanche Avenue	Parkdale	Parkers Rd Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

<b>Properties at risk from Flooding during a 1% AEP event</b>				
<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Rural</b>	<b>Public Use</b>
<b>Street No. at Risk</b>	<b>Street</b>	<b>Suburb</b>	<b>Along Melbourne Water Watercourse</b>	<b>Flood Risk Type</b>
7	Blanche Avenue	Parkdale	Parkers Rd Main Drain	Flash
9	Blanche Avenue	Parkdale	Parkers Rd Main Drain	Flash
16	Blanche Avenue	Parkdale	Parkers Rd Main Drain	Flash
18	Blanche Avenue	Parkdale	Parkers Rd Main Drain	Flash
33	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
35	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
37	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
1/38	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
2/38	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
3/38	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
4/38	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
5/38	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
6/38	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
7/38	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
8/38	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
1/40	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
2/40	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
3/40	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
4/40	Booker Street	Cheltenham	Parkers Rd Main Drain	Flash
1/26	Bourke Street	Mentone	Patty Street Main Drain	Flash
2/26	Bourke Street	Mentone	Patty Street Main Drain	Flash
3/26	Bourke Street	Mentone	Patty Street Main Drain	Flash
4/26	Bourke Street	Mentone	Patty Street Main Drain	Flash
5/26	Bourke Street	Mentone	Patty Street Main Drain	Flash
6/26	Bourke Street	Mentone	Patty Street Main Drain	Flash
28	Bourke Street	Mentone	Patty Street Main Drain	Flash
2/30	Charles Street	Cheltenham	Parkers Rd Main Drain	Flash
25	Childers Street	Mentone	Parkers Rd Main Drain	Flash
27A	Childers Street	Mentone	Parkers Rd Main Drain	Flash
27B	Childers Street	Mentone	Parkers Rd Main Drain	Flash
1/29-31	Childers Street	Mentone	Parkers Rd Main Drain	Flash
2/29-31	Childers Street	Mentone	Parkers Rd Main Drain	Flash
3/29-31	Childers Street	Mentone	Parkers Rd Main Drain	Flash
4/29-31	Childers Street	Mentone	Parkers Rd Main Drain	Flash
5/29-31	Childers Street	Mentone	Parkers Rd Main Drain	Flash
35	Childers Street	Mentone	Parkers Rd Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

<b>Properties at risk from Flooding during a 1% AEP event</b>				
<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Rural</b>	<b>Public Use</b>
<b>Street No. at Risk</b>	<b>Street</b>	<b>Suburb</b>	<b>Along Melbourne Water Watercourse</b>	<b>Flood Risk Type</b>
117	Collins Street	Mentone	Parkers Rd Main Drain	Flash
119	Collins Street	Mentone	Parkers Rd Main Drain	Flash
2/121	Collins Street	Mentone	Parkers Rd Main Drain	Flash
3/121	Collins Street	Mentone	Parkers Rd Main Drain	Flash
123	Collins Street	Mentone	Parkers Rd Main Drain	Flash
125	Collins Street	Mentone	Parkers Rd Main Drain	Flash
127	Collins Street	Mentone	Parkers Rd Main Drain	Flash
129	Collins Street	Mentone	Parkers Rd Main Drain	Flash
1/130	Collins Street	Mentone	Parkers Rd Main Drain	Flash
2/130	Collins Street	Mentone	Parkers Rd Main Drain	Flash
3/130	Collins Street	Mentone	Parkers Rd Main Drain	Flash
131	Collins Street	Mentone	Parkers Rd Main Drain	Flash
132	Collins Street	Mentone	Parkers Rd Main Drain	Flash
133	Collins Street	Mentone	Parkers Rd Main Drain	Flash
1/134	Collins Street	Mentone	Parkers Rd Main Drain	Flash
3/134	Collins Street	Mentone	Parkers Rd Main Drain	Flash
135	Collins Street	Mentone	Parkers Rd Main Drain	Flash
1/136	Collins Street	Mentone	Parkers Rd Main Drain	Flash
2/136	Collins Street	Mentone	Parkers Rd Main Drain	Flash
1/138	Collins Street	Mentone	Parkers Rd Main Drain	Flash
2/140	Collins Street	Mentone	Parkers Rd Main Drain	Flash
1/142	Collins Street	Mentone	Parkers Rd Main Drain	Flash
2/142	Collins Street	Mentone	Parkers Rd Main Drain	Flash
9/144	Collins Street	Mentone	Parkers Rd Main Drain	Flash
3/257	Como Parade	Parkdale	Parkers Rd Main Drain	Flash
259C	Como Parade	Parkdale	Parkers Rd Main Drain	Flash
4/261	Como Parade	Parkdale	Parkers Rd Main Drain	Flash
5/261	Como Parade	Parkdale	Parkers Rd Main Drain	Flash
6/261	Como Parade	Parkdale	Parkers Rd Main Drain	Flash
85	Devon Street	Cheltenham	Oak Grove Drain	Flash
87	Devon Street	Cheltenham	Oak Grove Drain	Flash
89	Devon Street	Cheltenham	Oak Grove Drain	Flash
91	Devon Street	Cheltenham	Oak Grove Drain	Flash
96	Devon Street	Cheltenham	Oak Grove Drain	Flash
98A	Devon Street	Cheltenham	Oak Grove Drain	Flash
98B	Devon Street	Cheltenham	Oak Grove Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

<b>Properties at risk from Flooding during a 1% AEP event</b>				
<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Rural</b>	<b>Public Use</b>
<b>Street No. at Risk</b>	<b>Street</b>	<b>Suburb</b>	<b>Along Melbourne Water Watercourse</b>	<b>Flood Risk Type</b>
100	Devon Street	Cheltenham	Oak Grove Drain	Flash
1/38	Eden Street	Cheltenham	Parkers Rd Main Drain	Flash
5	Egerton Avenue	Cheltenham	Oak Grove Drain	Flash
7	Egerton Avenue	Cheltenham	Oak Grove Drain	Flash
9	Egerton Avenue	Cheltenham	Oak Grove Drain	Flash
16	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
1/18	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
2/18	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
1/19	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
2/19	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
20	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
21	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
21A	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
22	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
24	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
26	Eighth Street	Parkdale	Parkers Rd Main Drain	Flash
18	Elizabeth Street	Mentone	Patty Street Main Drain	Flash
20	Elizabeth Street	Mentone	Patty Street Main Drain	Flash
33	Elizabeth Street	Mentone	Patty Street Main Drain	Flash
17	Elliott Street	Cheltenham	Oak Grove Drain	Flash
18	Elliott Street	Cheltenham	Oak Grove Drain	Flash
19B	Elliott Street	Cheltenham	Oak Grove Drain	Flash
19A	Elliott Street	Cheltenham	Oak Grove Drain	Flash
20	Elliott Street	Cheltenham	Oak Grove Drain	Flash
21	Elliott Street	Cheltenham	Oak Grove Drain	Flash
22	Elliott Street	Cheltenham	Oak Grove Drain	Flash
23A	Elliott Street	Cheltenham	Oak Grove Drain	Flash
23B	Elliott Street	Cheltenham	Oak Grove Drain	Flash
24	Elliott Street	Cheltenham	Oak Grove Drain	Flash
25	Elliott Street	Cheltenham	Oak Grove Drain	Flash
26	Elliott Street	Cheltenham	Oak Grove Drain	Flash
15	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
1/16	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
2/16	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
3/16	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
17	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
18	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
19	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
20	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
21	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
22	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
24	Elm Grove	Parkdale	Parkers Rd Main Drain	Flash
10	Elman Road	Cheltenham	Parkers Rd Main Drain	Flash
17A	Elman Road	Cheltenham	Parkers Rd Main Drain	Flash
19	Elman Road	Cheltenham	Parkers Rd Main Drain	Flash
19	Eveline Avenue	Parkdale	Parkers Rd Main Drain	Flash
21	Eveline Avenue	Parkdale	Parkers Rd Main Drain	Flash
30	Fifth Street	Parkdale	Parkers Rd Main Drain	Flash
30A	Fifth Street	Parkdale	Parkers Rd Main Drain	Flash
32	Fifth Street	Parkdale	Parkers Rd Main Drain	Flash
33	Fifth Street	Parkdale	Parkers Rd Main Drain	Flash
34	Fifth Street	Parkdale	Parkers Rd Main Drain	Flash
35	Fifth Street	Parkdale	Parkers Rd Main Drain	Flash
37	Fifth Street	Parkdale	Parkers Rd Main Drain	Flash
9	First Street	Parkdale	Parkers Rd Main Drain	Flash
76	Flinders Street	Mentone	Patty Street Main Drain	Flash
78	Flinders Street	Mentone	Patty Street Main Drain	Flash
1/80	Flinders Street	Mentone	Patty Street Main Drain	Flash
2/80	Flinders Street	Mentone	Patty Street Main Drain	Flash
84	Flinders Street	Mentone	Patty Street Main Drain	Flash
86	Flinders Street	Mentone	Patty Street Main Drain	Flash
1/88	Flinders Street	Mentone	Patty Street Main Drain	Flash
2/88	Flinders Street	Mentone	Patty Street Main Drain	Flash
90	Flinders Street	Mentone	Patty Street Main Drain	Flash
92	Flinders Street	Mentone	Patty Street Main Drain	Flash
94	Flinders Street	Mentone	Patty Street Main Drain	Flash
96	Flinders Street	Mentone	Patty Street Main Drain	Flash
98	Flinders Street	Mentone	Patty Street Main Drain	Flash
100	Flinders Street	Mentone	Patty Street Main Drain	Flash
102	Flinders Street	Mentone	Patty Street Main Drain	Flash
104	Flinders Street	Mentone	Patty Street Main Drain	Flash
10	Follett Road	Cheltenham	Oak Grove Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

<b>Properties at risk from Flooding during a 1% AEP event</b>				
<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Rural</b>	<b>Public Use</b>
<b>Street No. at Risk</b>	<b>Street</b>	<b>Suburb</b>	<b>Along Melbourne Water Watercourse</b>	<b>Flood Risk Type</b>
1/12	Follett Road	Cheltenham	Oak Grove Drain	Flash
2/12	Follett Road	Cheltenham	Oak Grove Drain	Flash
3/12	Follett Road	Cheltenham	Oak Grove Drain	Flash
14	Follett Road	Cheltenham	Oak Grove Drain	Flash
16	Follett Road	Cheltenham	Oak Grove Drain	Flash
1/29	Follett Road	Cheltenham	Oak Grove Drain	Flash
31	Follett Road	Cheltenham	Oak Grove Drain	Flash
33	Follett Road	Cheltenham	Oak Grove Drain	Flash
23	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
24	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
25	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
26	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
27	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
28	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
29	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
30	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
31A	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
31B	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
32	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
33	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
34	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
35	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
36	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
37	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
39	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
41-43	Fourth Street	Parkdale	Parkers Rd Main Drain	Flash
1/1	Franklin Street	Mentone	Patty Street Main Drain	Flash
2/1	Franklin Street	Mentone	Patty Street Main Drain	Flash
2	Franklin Street	Mentone	Patty Street Main Drain	Flash
3	Franklin Street	Mentone	Patty Street Main Drain	Flash
3A	Franklin Street	Mentone	Patty Street Main Drain	Flash
4B	Franklin Street	Mentone	Patty Street Main Drain	Flash
4A	Franklin Street	Mentone	Patty Street Main Drain	Flash
5	Franklin Street	Mentone	Patty Street Main Drain	Flash
5A	Franklin Street	Mentone	Patty Street Main Drain	Flash
6	Franklin Street	Mentone	Patty Street Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
7	Franklin Street	Mentone	Patty Street Main Drain	Flash
8	Franklin Street	Mentone	Patty Street Main Drain	Flash
10	Franklin Street	Mentone	Patty Street Main Drain	Flash
1/2	Harpley Street	Cheltenham	Oak Grove Drain	Flash
2/2	Harpley Street	Cheltenham	Oak Grove Drain	Flash
1/4	Harpley Street	Cheltenham	Oak Grove Drain	Flash
2/4	Harpley Street	Cheltenham	Oak Grove Drain	Flash
6	Harpley Street	Cheltenham	Oak Grove Drain	Flash
8	Harpley Street	Cheltenham	Oak Grove Drain	Flash
9	Harpley Street	Cheltenham	Oak Grove Drain	Flash
2/10	Harpley Street	Cheltenham	Oak Grove Drain	Flash
11	Harpley Street	Cheltenham	Oak Grove Drain	Flash
12	Harpley Street	Cheltenham	Oak Grove Drain	Flash
1/13	Harpley Street	Cheltenham	Oak Grove Drain	Flash
2/13	Harpley Street	Cheltenham	Oak Grove Drain	Flash
14	Harpley Street	Cheltenham	Oak Grove Drain	Flash
15A	Harpley Street	Cheltenham	Oak Grove Drain	Flash
15B	Harpley Street	Cheltenham	Oak Grove Drain	Flash
16	Harpley Street	Cheltenham	Oak Grove Drain	Flash
17	Harpley Street	Cheltenham	Oak Grove Drain	Flash
18	Harpley Street	Cheltenham	Oak Grove Drain	Flash
19	Harpley Street	Cheltenham	Oak Grove Drain	Flash
20	Harpley Street	Cheltenham	Oak Grove Drain	Flash
21	Harpley Street	Cheltenham	Oak Grove Drain	Flash
23	Harpley Street	Cheltenham	Oak Grove Drain	Flash
25	Harpley Street	Cheltenham	Oak Grove Drain	Flash
1	Holmby Road	Cheltenham	Parkers Rd Main Drain	Flash
3	Holmby Road	Cheltenham	Parkers Rd Main Drain	Flash
5	Holmby Road	Cheltenham	Parkers Rd Main Drain	Flash
7	Holmby Road	Cheltenham	Parkers Rd Main Drain	Flash
9	Holmby Road	Cheltenham	Parkers Rd Main Drain	Flash
11	Holmby Road	Cheltenham	Parkers Rd Main Drain	Flash
13	Holmby Road	Cheltenham	Parkers Rd Main Drain	Flash
1	Ilma Court	Parkdale	Parkers Rd Main Drain	Flash
2	Ilma Court	Parkdale	Parkers Rd Main Drain	Flash
4	Ilma Court	Parkdale	Parkers Rd Main Drain	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
5A	Ilma Court	Parkdale	Parkers Rd Main Drain	Flash
5B	Ilma Court	Parkdale	Parkers Rd Main Drain	Flash
6	Ilma Court	Parkdale	Parkers Rd Main Drain	Flash
7	Ilma Court	Parkdale	Parkers Rd Main Drain	Flash
3	Isabella Street	Parkdale	Parkers Rd Main Drain	Flash
1/4	Isabella Street	Parkdale	Parkers Rd Main Drain	Flash
2/4	Isabella Street	Parkdale	Parkers Rd Main Drain	Flash
1/5	Isabella Street	Parkdale	Parkers Rd Main Drain	Flash
1C	Johnston Street	Mentone	Oak Grove Drain	Flash
1B	Johnston Street	Mentone	Oak Grove Drain	Flash
3	Johnston Street	Mentone	Oak Grove Drain	Flash
5A	Johnston Street	Mentone	Oak Grove Drain	Flash
5B	Johnston Street	Mentone	Oak Grove Drain	Flash
7	Johnston Street	Mentone	Oak Grove Drain	Flash
9	Johnston Street	Mentone	Oak Grove Drain	Flash
1/9	Laburnum Street	Parkdale	Parkers Rd Main Drain	Flash
2/9	Laburnum Street	Parkdale	Parkers Rd Main Drain	Flash
3/9	Laburnum Street	Parkdale	Parkers Rd Main Drain	Flash
4/9	Laburnum Street	Parkdale	Parkers Rd Main Drain	Flash
10	Laburnum Street	Parkdale	Parkers Rd Main Drain	Flash
11	Laburnum Street	Parkdale	Parkers Rd Main Drain	Flash
12	Laburnum Street	Parkdale	Parkers Rd Main Drain	Flash
8	Mena Avenue	Cheltenham	Oak Grove Drain	Flash
14	Moonda Grove	Cheltenham	Oak Grove Drain	Flash
16	Moonda Grove	Cheltenham	Oak Grove Drain	Flash
18	Moonda Grove	Cheltenham	Oak Grove Drain	Flash
20	Moonda Grove	Cheltenham	Oak Grove Drain	Flash
29	Nepean Highway	Mentone	Oak Grove Drain	Flash
61A	Nepean Highway	Mentone	Oak Grove Drain	Flash
61B	Nepean Highway	Mentone	Oak Grove Drain	Flash
66-70	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
78	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
80	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
2/82	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
84	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
86	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
88	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
92	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
94	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
2/96	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
98	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
100	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
102	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
104	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
106	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
108	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
110	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
112	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
114	Nepean Highway	Mentone	Parkers Rd Main Drain	Flash
5/410	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
6/410	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
430	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
9/432	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
1/436	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
2/436	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
3/436	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
4/436	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
5/436	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
6/436	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
7/436	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
8/436	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
1/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
2/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
3/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
4/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
5/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
6/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
7/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
8/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
9/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
10/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
11/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
12/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
13/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
14/438-440	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
442	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
444	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
446	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
4/448	Nepean Highway	Parkdale	Parkers Rd Main Drain	Flash
1228	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1234	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1236	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1238	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
2/1242A	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1244	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
6/1248	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1250	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
3/1252	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1254	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1256	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1258	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1260	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1262	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1264	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1/1268	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
2/1268	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
3/1268	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
4/1268	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1/1270	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
2/1270	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1272	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1274	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1276	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1278	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1/1280	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1282	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1284	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1/1296	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
1/1298	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1/1308	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
2/1308	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1310	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1312	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1312A	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1312B	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1314	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1316	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1318	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1320	Nepean Highway	Cheltenham	Parkers Rd Main Drain	Flash
1	Norland Street	Cheltenham	Oak Grove Drain	Flash
2	Norland Street	Cheltenham	Oak Grove Drain	Flash
3	Norland Street	Cheltenham	Oak Grove Drain	Flash
5B	Norland Street	Cheltenham	Oak Grove Drain	Flash
5A	Norland Street	Cheltenham	Oak Grove Drain	Flash
7A	Norland Street	Cheltenham	Oak Grove Drain	Flash
43	Oak Avenue	Cheltenham	Oak Grove Drain	Flash
1/45	Oak Avenue	Cheltenham	Oak Grove Drain	Flash
2/45	Oak Avenue	Cheltenham	Oak Grove Drain	Flash
47	Oak Avenue	Cheltenham	Oak Grove Drain	Flash
3	Page Street	Cheltenham	Parkers Rd Main Drain	Flash
122B	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
124	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
1/132	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
2/132	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
134	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
3/136	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
153	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
155	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
157	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
159	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
161	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
163	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
165	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
167	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
169	Parkers Road	Parkdale	Parkers Rd Main Drain	Flash
1/20	Patty Street	Mentone	Patty Street Main Drain	Flash
2/20	Patty Street	Mentone	Patty Street Main Drain	Flash
1/22	Patty Street	Mentone	Patty Street Main Drain	Flash
2/22	Patty Street	Mentone	Patty Street Main Drain	Flash
3/22	Patty Street	Mentone	Patty Street Main Drain	Flash
23	Patty Street	Mentone	Patty Street Main Drain	Flash
1/24	Patty Street	Mentone	Patty Street Main Drain	Flash
2/24	Patty Street	Mentone	Patty Street Main Drain	Flash
1/26	Patty Street	Mentone	Patty Street Main Drain	Flash
32	Patty Street	Mentone	Patty Street Main Drain	Flash
34	Patty Street	Mentone	Patty Street Main Drain	Flash
36	Patty Street	Mentone	Patty Street Main Drain	Flash
38	Patty Street	Mentone	Patty Street Main Drain	Flash
42	Patty Street	Mentone	Patty Street Main Drain	Flash
44	Patty Street	Mentone	Patty Street Main Drain	Flash
1/46-48	Patty Street	Mentone	Patty Street Main Drain	Flash
7/46-48	Patty Street	Mentone	Patty Street Main Drain	Flash
8/46-48	Patty Street	Mentone	Patty Street Main Drain	Flash
57	Patty Street	Mentone	Patty Street Main Drain	Flash
1/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
2/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
3/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
4/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
5/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
6/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
7/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
8/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
9/59-61	Patty Street	Mentone	Patty Street Main Drain	Flash
60	Patty Street	Mentone	Patty Street Main Drain	Flash
63	Patty Street	Mentone	Patty Street Main Drain	Flash
65	Patty Street	Mentone	Patty Street Main Drain	Flash
1/67	Patty Street	Mentone	Patty Street Main Drain	Flash
2/67	Patty Street	Mentone	Patty Street Main Drain	Flash
1/69	Patty Street	Mentone	Patty Street Main Drain	Flash
2/69	Patty Street	Mentone	Patty Street Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

<b>Properties at risk from Flooding during a 1% AEP event</b>				
<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Rural</b>	<b>Public Use</b>
<b>Street No. at Risk</b>	<b>Street</b>	<b>Suburb</b>	<b>Along Melbourne Water Watercourse</b>	<b>Flood Risk Type</b>
3/69	Patty Street	Mentone	Patty Street Main Drain	Flash
71	Patty Street	Mentone	Patty Street Main Drain	Flash
73	Patty Street	Mentone	Patty Street Main Drain	Flash
85	Patty Street	Mentone	Patty Street Main Drain	Flash
103	Patty Street	Mentone	Patty Street Main Drain	Flash
105A	Patty Street	Mentone	Patty Street Main Drain	Flash
105B	Patty Street	Mentone	Patty Street Main Drain	Flash
107	Patty Street	Mentone	Patty Street Main Drain	Flash
109	Patty Street	Mentone	Patty Street Main Drain	Flash
110	Patty Street	Mentone	Patty Street Main Drain	Flash
111	Patty Street	Mentone	Patty Street Main Drain	Flash
112	Patty Street	Mentone	Patty Street Main Drain	Flash
113	Patty Street	Mentone	Patty Street Main Drain	Flash
114A	Patty Street	Mentone	Patty Street Main Drain	Flash
114B	Patty Street	Mentone	Patty Street Main Drain	Flash
114	Patty Street	Mentone	Patty Street Main Drain	Flash
115	Patty Street	Mentone	Patty Street Main Drain	Flash
117	Patty Street	Mentone	Patty Street Main Drain	Flash
119	Patty Street	Mentone	Patty Street Main Drain	Flash
4/122-124	Patty Street	Mentone	Parkers Rd Main Drain	Flash
5/122-124	Patty Street	Mentone	Parkers Rd Main Drain	Flash
6/122-124	Patty Street	Mentone	Parkers Rd Main Drain	Flash
3/1	Peter Avenue	Parkdale	Parkers Rd Main Drain	Flash
4/1	Peter Avenue	Parkdale	Parkers Rd Main Drain	Flash
2	Peter Avenue	Parkdale	Parkers Rd Main Drain	Flash
2	Phillip Street	Mentone	Patty Street Main Drain	Flash
4	Phillip Street	Mentone	Patty Street Main Drain	Flash
6	Phillip Street	Mentone	Patty Street Main Drain	Flash
1	Potts Street	Parkdale	Parkers Rd Main Drain	Flash
1/3	Potts Street	Parkdale	Parkers Rd Main Drain	Flash
1/5	Potts Street	Parkdale	Parkers Rd Main Drain	Flash
15	Queen Street	Parkdale	Parkers Rd Main Drain	Flash
17	Queen Street	Parkdale	Parkers Rd Main Drain	Flash
18	Queen Street	Parkdale	Parkers Rd Main Drain	Flash
30	Queen Street	Parkdale	Parkers Rd Main Drain	Flash
2	Rupert Street	Parkdale	Parkers Rd Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
6	Rupert Street	Parkdale	Parkers Rd Main Drain	Flash
18	Second Street	Parkdale	Parkers Rd Main Drain	Flash
20	Second Street	Parkdale	Parkers Rd Main Drain	Flash
20A	Second Street	Parkdale	Parkers Rd Main Drain	Flash
22	Seventh Street	Parkdale	Parkers Rd Main Drain	Flash
23	Seventh Street	Parkdale	Parkers Rd Main Drain	Flash
23A	Seventh Street	Parkdale	Parkers Rd Main Drain	Flash
24	Seventh Street	Parkdale	Parkers Rd Main Drain	Flash
24A	Seventh Street	Parkdale	Parkers Rd Main Drain	Flash
25	Seventh Street	Parkdale	Parkers Rd Main Drain	Flash
1	Shearman Crescent	Mentone	Patty Street Main Drain	Flash
3	Shearman Crescent	Mentone	Patty Street Main Drain	Flash
5	Shearman Crescent	Mentone	Patty Street Main Drain	Flash
7	Shearman Crescent	Mentone	Patty Street Main Drain	Flash
9	Shipston Road	Cheltenham	Oak Grove Drain	Flash
11	Shipston Road	Cheltenham	Oak Grove Drain	Flash
12	Shipston Road	Cheltenham	Oak Grove Drain	Flash
13	Shipston Road	Cheltenham	Oak Grove Drain	Flash
1/14	Shipston Road	Cheltenham	Oak Grove Drain	Flash
2/14	Shipston Road	Cheltenham	Oak Grove Drain	Flash
16	Shipston Road	Cheltenham	Oak Grove Drain	Flash
18	Shipston Road	Cheltenham	Oak Grove Drain	Flash
28	Sixth Street	Parkdale	Parkers Rd Main Drain	Flash
28A	Sixth Street	Parkdale	Parkers Rd Main Drain	Flash
29	Sixth Street	Parkdale	Parkers Rd Main Drain	Flash
30	Sixth Street	Parkdale	Parkers Rd Main Drain	Flash
30A	Sixth Street	Parkdale	Parkers Rd Main Drain	Flash
1/2-4	Spencer Street	Mentone	Patty Street Main Drain	Flash
2/2-4	Spencer Street	Mentone	Patty Street Main Drain	Flash
3/2-4	Spencer Street	Mentone	Patty Street Main Drain	Flash
4/2-4	Spencer Street	Mentone	Patty Street Main Drain	Flash
5/2-4	Spencer Street	Mentone	Patty Street Main Drain	Flash
6/2-4	Spencer Street	Mentone	Patty Street Main Drain	Flash
1/3-5	Spencer Street	Mentone	Patty Street Main Drain	Flash
2/3-5	Spencer Street	Mentone	Patty Street Main Drain	Flash
3/3-5	Spencer Street	Mentone	Patty Street Main Drain	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
4/3-5	Spencer Street	Mentone	Patty Street Main Drain	Flash
5/3-5	Spencer Street	Mentone	Patty Street Main Drain	Flash
6/3-5	Spencer Street	Mentone	Patty Street Main Drain	Flash
10/3-5	Spencer Street	Mentone	Patty Street Main Drain	Flash
11/3-5	Spencer Street	Mentone	Patty Street Main Drain	Flash
1/6	Spencer Street	Mentone	Patty Street Main Drain	Flash
2/6	Spencer Street	Mentone	Patty Street Main Drain	Flash
8	Spencer Street	Mentone	Patty Street Main Drain	Flash
7	Station Road	Cheltenham	Parkers Rd Main Drain	Flash
32	Station Road	Cheltenham	Parkers Rd Main Drain	Flash
34	Station Road	Cheltenham	Parkers Rd Main Drain	Flash
36-42	Station Road	Cheltenham	Parkers Rd Main Drain	Flash
43	Station Road	Cheltenham	Parkers Rd Main Drain	Flash
44	Station Road	Cheltenham	Parkers Rd Main Drain	Flash
46	Station Road	Cheltenham	Parkers Rd Main Drain	Flash
48	Station Road	Cheltenham	Parkers Rd Main Drain	Flash
1/15	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
2/15	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
16	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
17	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
18	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
19	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
20	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
21	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
22	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
23	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
24	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
26	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
28	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
1/30	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
2/30	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
32	Stewart Avenue	Parkdale	Parkers Rd Main Drain	Flash
1/21	Swanston Street	Mentone	Patty Street Main Drain	Flash
23	Swanston Street	Mentone	Patty Street Main Drain	Flash
25	Swanston Street	Mentone	Patty Street Main Drain	Flash
25A	Swanston Street	Mentone	Patty Street Main Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

<b>Properties at risk from Flooding during a 1% AEP event</b>				
<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Rural</b>	<b>Public Use</b>
<b>Street No. at Risk</b>	<b>Street</b>	<b>Suburb</b>	<b>Along Melbourne Water Watercourse</b>	<b>Flood Risk Type</b>
27	Swanston Street	Mentone	Patty Street Main Drain	Flash
29	Swanston Street	Mentone	Patty Street Main Drain	Flash
31-35	Swanston Street	Mentone	Patty Street Main Drain	Flash
39	Swanston Street	Mentone	Patty Street Main Drain	Flash
4	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
6B	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
6A	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
8	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
9	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
1/10	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
2/10	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
11	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
13	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
15	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
17	Tenham Grove	Cheltenham	Oak Grove Drain	Flash
11	Third Street	Parkdale	Parkers Rd Main Drain	Flash
11A	Third Street	Parkdale	Parkers Rd Main Drain	Flash
13	Third Street	Parkdale	Parkers Rd Main Drain	Flash
15B	Third Street	Parkdale	Parkers Rd Main Drain	Flash
26	Third Street	Parkdale	Parkers Rd Main Drain	Flash
28	Third Street	Parkdale	Parkers Rd Main Drain	Flash
32	Third Street	Parkdale	Parkers Rd Main Drain	Flash
34	Third Street	Parkdale	Parkers Rd Main Drain	Flash
36A	Third Street	Parkdale	Parkers Rd Main Drain	Flash
36B	Third Street	Parkdale	Parkers Rd Main Drain	Flash
38	Third Street	Parkdale	Parkers Rd Main Drain	Flash
40	Third Street	Parkdale	Parkers Rd Main Drain	Flash
42	Third Street	Parkdale	Parkers Rd Main Drain	Flash
2	Thomas Court	Parkdale	Parkers Rd Main Drain	Flash
3	Thomas Court	Parkdale	Parkers Rd Main Drain	Flash
4	Thomas Court	Parkdale	Parkers Rd Main Drain	Flash
5	Thomas Court	Parkdale	Parkers Rd Main Drain	Flash
6	Thomas Court	Parkdale	Parkers Rd Main Drain	Flash
7	Thomas Court	Parkdale	Parkers Rd Main Drain	Flash
6/8	Thomas Court	Parkdale	Parkers Rd Main Drain	Flash
23	Tuck Street	Cheltenham	Parkers Rd Main Drain	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
81	Warrigal Road	Mentone	Parkers Rd Main Drain	Flash
110A	Warrigal Road	Parkdale	Parkers Rd Main Drain	Flash
110	Warrigal Road	Parkdale	Parkers Rd Main Drain	Flash
1/112	Warrigal Road	Parkdale	Parkers Rd Main Drain	Flash
2/112	Warrigal Road	Parkdale	Parkers Rd Main Drain	Flash
3/112	Warrigal Road	Parkdale	Parkers Rd Main Drain	Flash
4/112	Warrigal Road	Parkdale	Parkers Rd Main Drain	Flash
1/3	White Street	Parkdale	Parkers Rd Main Drain	Flash
5	White Street	Parkdale	Parkers Rd Main Drain	Flash
7	Williams Street	Mentone	Parkers Rd Main Drain	Flash
9	Williams Street	Mentone	Parkers Rd Main Drain	Flash
10A	Williams Street	Mentone	Parkers Rd Main Drain	Flash
10B	Williams Street	Mentone	Parkers Rd Main Drain	Flash
11	Williams Street	Mentone	Parkers Rd Main Drain	Flash
14	Williams Street	Mentone	Parkers Rd Main Drain	Flash
16	Williams Street	Mentone	Parkers Rd Main Drain	Flash
18	Williams Street	Mentone	Parkers Rd Main Drain	Flash
1/20	Williams Street	Mentone	Parkers Rd Main Drain	Flash
2/20	Williams Street	Mentone	Parkers Rd Main Drain	Flash
22	Williams Street	Mentone	Parkers Rd Main Drain	Flash
22A	Williams Street	Mentone	Parkers Rd Main Drain	Flash
24	Williams Street	Mentone	Parkers Rd Main Drain	Flash
<b>Total</b>				
<b>625</b>				

Table C3.2 – Properties at risk of flooding along the Parkers Road Main Drain catchment in the City of Kingston

## ISOLATION

No major isolation risks exist for areas in Mentone, Parkdale & Mordialloc around the Parkers Road Main Drain during a 1% AEP (100yr ARI) event. Some localised short-duration isolation may occur due to flash flooding.

## ESSENTIAL INFRASTRUCTURE

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 Kingston is available via the website at: [https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23\\_Kingston\\_LAM.pdf](https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23_Kingston_LAM.pdf)

Apart from the roads outlined below, all other essential infrastructure and services areas in Mentone, Parkdale & Mordialloc around the Parkers Road Main Drain 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 in Mentone & Parkdale around the Parkers Road Main Drain. Check the VicRoads website for more details: <http://alerts.vicroads.vic.gov.au/>

VicRoads Roads affected in a 1% AEP event
<ul style="list-style-type: none"> <li>Beach Road, Mordialloc at Owen Street and Centre Way</li> </ul>
<ul style="list-style-type: none"> <li>Nepean Highway, Mordialloc at Railway Underpass</li> </ul>

Table C3.3 – VicRoads Possible Road Closures during a flooding event

Kingston City Council Roads affected in a 1% AEP event			
CHELTHENHAM	MENTONE	PARKDALE	
<ul style="list-style-type: none"> <li>Harpley Street</li> </ul>	<ul style="list-style-type: none"> <li>Childers Street</li> </ul>	<ul style="list-style-type: none"> <li>Bethell Avenue</li> </ul>	<ul style="list-style-type: none"> <li>Stewart Avenue</li> </ul>
<ul style="list-style-type: none"> <li>Page Street</li> </ul>	<ul style="list-style-type: none"> <li>Collins Street</li> </ul>	<ul style="list-style-type: none"> <li>Eighth Street</li> </ul>	<ul style="list-style-type: none"> <li>Third Street</li> </ul>
<ul style="list-style-type: none"> <li>Park Road</li> </ul>	<ul style="list-style-type: none"> <li>Franklin Street</li> </ul>	<ul style="list-style-type: none"> <li>Fourth Street</li> </ul>	<ul style="list-style-type: none"> <li>Thomas Court</li> </ul>
	<ul style="list-style-type: none"> <li>Patty Street</li> </ul>	<ul style="list-style-type: none"> <li>Ilma Court</li> </ul>	
	<ul style="list-style-type: none"> <li>Phillip Street</li> </ul>	<ul style="list-style-type: none"> <li>Seventh Street</li> </ul>	

Table C3.4 – Kingston City Council Possible Road Closures during a flooding event

## FLOOD MITIGATION

### PUMPING STATIONS

Kingston City Council Pumping Station	Suburb	No. of Pumps	Capacity
Nepean Highway	Mordialloc	1	200L/s

Table C3.5 – Kingston City Pumping Stations along the Parkers Road Main Drain

No formal Retarding Basins or Levees exist in Mentone, Parkdale & Mordialloc around the Parkers Road Main Drain.

## COMMAND, CONTROL & COORDINATION

VICSES will assume overall control of the response to flood incidents. Other agencies will be requested to support operations as detailed in this Plan. Control and coordination of a flood incident shall be carried out at the lowest effective level and in accordance with the State Emergency Response Plan (EMMV Part 3). During significant events, VICSES will conduct incident management using multi-agency resources.

---

## FLOOD IMPACTS & REQUIRED ACTIONS

The table below is a breakdown of the number of properties flooded in a 1% AEP (100yr ARI) event. Refer to the following intelligence card/s for Mentone/Parkdale for more details.

Land Use Flooded in a 1% AEP Event	Total
Residential	577
Commercial	48
Industrial	0
Public Land	0
Rural	0
<b>Total</b>	<b>625</b>

Table C3.6 – Breakdown of likely land use flooded in the Parkers Road Main Drain Catchment in Kingston during a 1% AEP event

## FLOOD INTELLIGENCE CARD – PARKERS ROAD MAIN DRAIN, MENTONE/PARKDALE (UNGAUGED)

Version 3 – September 2017



*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.*

CLOSEST RAIN GAUGE	Sandringham
LOCATION	South East Water's Service Reservoir within the Bayside Waste & Recycling Centre, Talinga Road, Cheltenham
MELWAY REF:	86 D1

GAUGE NUMBER	586184
GAUGE TYPE	Rain
TELEMETRIC/MANUAL	Telemetric

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
22mm in 10 mins; 36mm in 30 mins; 47mm in 1 hour; 59mm in 2 hours; 82mm in 6 hours; or 101mm in 12 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.	1% AEP (100 year ARI)	<p><b>Properties at Flood Risk (Properties likely at risk before this Level)</b></p> <p><b>625 Properties in Total</b></p> <p><b>Ashmore Ave Main Drain</b></p> <ul style="list-style-type: none"> <li>• 2 Bay Street, Mordialloc</li> <li>• 182, 1/182, 2/182, 192, 192A, 1/193, 2/193, 194, 194A, 195, 1/196, 200, 200A, Units 1-4/201-202, 203, Units 2-4/204-205, 206, 207-208, 209, 210 &amp; 2/11 Beach Road, Parkdale</li> </ul> <p><b>Oak Grove Drain</b></p> <ul style="list-style-type: none"> <li>• 85, 87, 89, 91, 96, 98A, 98B &amp; 100 Devon Street, Cheltenham</li> <li>• 5, 7 &amp; 9 Egerton Avenue, Cheltenham</li> <li>• 17, 18, 19B, 19A, 20, 21, 22, 23A, 23B, 24, 25 &amp; 26 Elliott Street, Cheltenham</li> <li>• 10, 1/12, 2/12, 3/12, 14, 16, 1/29, 31 &amp; 33 Follett Road, Cheltenham</li> <li>• 1/2, 2/2, 1/4, 2/4, 6, 8, 9, 2/10, 11, 12, 1/13, 2/13, 14, 15A, 15B, 16, 17, 18, 19, 20, 21, 23 &amp; 25 Harpley Street, Cheltenham</li> <li>• 1C, 1B, 3, 5A, 5B, 7 &amp; 9 Johnston Street, Mentone</li> <li>• 8 Mena Avenue, Cheltenham</li> <li>• 14, 16, 18 &amp; 20 Moonda Grove, Cheltenham</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>• 29, 61A &amp; 61B Nepean Highway, Mentone</li> <li>• 1, 2, 3, 5B, 5A &amp; 7A Norland Street, Cheltenham</li> <li>• 43, 1/45, 2/45 &amp; 47 Oak Avenue, Cheltenham</li> <li>• 9, 11, 12, 13, 1/14, 2/14, 16 &amp; 18 Shipston Road, Cheltenham</li> <li>• 4, 6B, 6A, 8, 9, 1/10, 2/10, 11, 13, 15 &amp; 17 Tenham Grove, Cheltenham</li> <li>• <b>Parkers Rd Main Drain</b></li> <li>• 10-12, 11-13, 14, 16, 17, 18-20, 19, 21, 22, 23, 24, 36-38, 40, 42, 44, Units 1-3/46 &amp; Units 2-3/50 Balcombe Road, Mentone</li> <li>• 15, 16, 17, 18, 19, 20, 21, 22, 23 &amp; 24 Bethell Avenue, Parkdale</li> <li>• 1, 3, 7, 9, 16 &amp; 18 Blanche Avenue, Parkdale</li> <li>• 33, 35, 37, 1/38, 2/38, 3/38, 4/38, 5/38, 6/38, 7/38, 8/38 &amp; Units 1-4/40 Booker Street, Cheltenham</li> <li>• 2/30 Charles Street, Cheltenham</li> <li>• 25, 27A, 27B, 1/29-31, 2/29-31, 3/29-31, 4/29-31, 5/29-31 &amp; 106/35 Childers Street, Mentone</li> <li>• 117, 119, 2/121, 3/121, 123, 125, 127, 129, 1/130, 2/130, 3/130, 131, 132, 133, 1/134, 3/134, 135, 1/136, 2/136, 1/138, 2/140, 1/142, 2/142 &amp; 9/144 Collins Street, Mentone</li> <li>• 3/257, 259C, 4/261, 5/261 &amp; 6/261 Como Parade, Parkdale</li> <li>• 1/38 Eden Street, Cheltenham</li> <li>• 16, 1/18, 2/18, 1/19, 2/19, 20, 21, 21A, 22, 24 &amp; 26 Eighth Street, Parkdale</li> <li>• 15, 1/16, 2/16, 3/16, 17, 18, 19, 20, 21, 22 &amp; 24 Elm Grove, Parkdale</li> <li>• 10, 17A &amp; 19 Elman Road, Cheltenham</li> <li>• 19 &amp; 21 Eveline Avenue, Parkdale</li> <li>• 30, 30A, 32, 33, 34, 35 &amp; 37 Fifth Street, Parkdale</li> <li>• 9 First Street, Parkdale</li> <li>• 23, 24, 25, 26, 27, 28, 29, 30, 31A, 31B, 32, 33, 34, 35, 36, 37, 39 &amp; 41-43 Fourth Street, Parkdale</li> <li>• 1, 3, 5, 7, 9, 11 &amp; 13 Holmby Road, Cheltenham</li> <li>• 1, 2, 4, 5A, 5B, 6 &amp; 7 Ilma Court, Parkdale</li> <li>• 3, 1/4, 2/4 &amp; 1/5 Isabella Street, Parkdale</li> <li>• 1/9, 2/9, 3/9, 4/9, 10, 11 &amp; 12 Laburnum Street, Parkdale</li> <li>• 66-70, 78, 80, 2/82, 84, 86, 88, 92, 94, 2/96, 98, 100, 102, 104, 106, 108, 110, 112 &amp; 114 Nepean Highway, Mentone</li> <li>• 5/410, 6/410, 430, 9/432, Units 1-8/436, Units 1-14/438-440, 442, 444, 446 &amp; 448 Nepean Highway, Parkdale</li> <li>• 1228, 1234, 1236, 1238, 2/1242A, 1244, 6/1248, 1250, 3/1252, 1254, 1256, 1258, 1260, 1262, 1264, Units 1-4/1268, 1/1270, 2/1270, 1272, 1274, 1276, 1278, 1/1280,</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<p>1282, 1284, 1/1296, 1/1298, 1/1308, 2/1308, 1310, 1312, 1312A, 1312B, 1314, 1316, 1318 &amp; 1320 Nepean Highway, Cheltenham</p> <ul style="list-style-type: none"> <li>• 3 Page Street, Cheltenham</li> <li>• 122B, 124, 1/132, 2/132, 134, 3/136, 153, 155, 157, 159, 161, 163, 165, 167 &amp; 169 Parkers Road, Parkdale</li> <li>• 4/122-124, 5/122-124 &amp; 6/122-124 Patty Street, Mentone</li> <li>• 3/1, 4/1 &amp; 2 Peter Avenue, Parkdale</li> <li>• 1, 1/3 &amp; 1/5 Potts Street, Parkdale</li> <li>• 15, 17, 18 &amp; 30 Queen Street, Parkdale</li> <li>• 2 &amp; 6 Rupert Street, Parkdale</li> <li>• 18, 20 &amp; 20A Second Street, Parkdale</li> <li>• 22, 23, 23A, 24, 24A &amp; 25 Seventh Street, Parkdale</li> <li>• 28, 28A, 29, 30 &amp; 30A Sixth Street, Parkdale</li> <li>• 7, 32, 34, 36-42, 43, 44, 46 &amp; 48 Station Road, Cheltenham</li> <li>• 1/15, 2/15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 1/30, 2/30 &amp; 32 Stewart Avenue, Parkdale</li> <li>• 11, 11A, 13, 15B, 26, 28, 32, 34, 36A, 36B, 38, 40 &amp; 42 Third Street, Parkdale</li> <li>• 2, 3, 4, 5, 6, 7 &amp; 6/8 Thomas Court, Parkdale</li> <li>• 23 Tuck Street, Cheltenham</li> <li>• 110A, 110, 1/112, 2/112, 3/112 &amp; 4/112 Warrigal Road, Parkdale</li> <li>• 1/3 &amp; 5 White Street, Parkdale</li> <li>• 7, 9, 10A, 10B, 11, 14, 16, 18, 1/20, 2/20, 22, 22A &amp; 24 Williams Street, Mentone</li> </ul> <p><b>Patty Street Main Drain</b></p> <ul style="list-style-type: none"> <li>• Units 1-6/26 &amp; 28 Bourke Street, Mentone</li> <li>• 18, 20 &amp; 33 Elizabeth Street, Mentone</li> <li>• 76, 78, 1/80, 2/80, 84, 86, 1/88, 2/88, 90, 92, 94, 96, 98, 100, 102 &amp; 104 Flinders Street, Mentone</li> <li>• 1/1, 2/1, 2, 3, 3A, 4B, 4A, 5, 5A, 6, 7, 8 &amp; 10 Franklin Street, Mentone</li> <li>• 1/20, 2/20, 1/22, 2/22, 3/22, 23, 1/24, 2/24, 1/26, 32, 34, 36, 38, 42, 44, 1/46-48, 7/46-48, 8/46-48, 57, Units 1-9/59-61, 60, 63, 65, 1/67, 2/67, 1/69, 2/69, 3/69, 71, 73, 85, 103, 105A, 105B, 107, 109, 110, 111, 112, 113, 114A, 114B, 114, 115, 117 &amp; 119 Patty Street, Mentone</li> <li>• 2, 4 &amp; 6 Phillip Street, Mentone</li> <li>• 1, 3, 5 &amp; 7 Shearman Crescent, Mentone</li> <li>• Units 1-6/2-4, Units 1-6/3-5, 10/3-5, 11/3-5, 1/6, 2/6 &amp; 8 Spencer Street, Mentone</li> <li>• 1/21, 23, 25, 25A, 27, 29, 31-35 &amp; 39 Swanston Street, Mentone</li> </ul> <p><b>Water Over Road</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>• Park Road, Cheltenham near Nepean Highway</li> <li>• Page Street, Cheltenham</li> <li>• Harpley Street, Cheltenham</li> <li>• Patty Street, Mentone west of railway line</li> <li>• Phillip Street, Mentone</li> <li>• Franklin Street, Mentone</li> <li>• Collins Street, Mentone</li> <li>• Childers Street, Mentone</li> <li>• Third Street, Parkdale</li> <li>• Fourth Street, Parkdale</li> <li>• Seventh Street, Parkdale</li> <li>• Eighth Street, Parkdale</li> <li>• Bethell Avenue, Parkdale</li> <li>• Stewart Avenue, Parkdale</li> <li>• Ilma Court, Parkdale</li> <li>• Thomas Court, Parkdale</li> <li>• Nepean Highway, Mordialloc at Railway Underpass</li> <li>• Beach Road, Mordialloc at Owen Street and Centre Way</li> </ul>	

Table C3.7 – Breakdown of possible consequences at various rainfall intensities around the Parkers Road Main Drain with operational considerations

## APPENDIX C4 – MORDIALLOC SETTLEMENT DRAIN FLOOD EMERGENCY PLAN

### OVERVIEW OF FLOODING CONSEQUENCES

The Mordialloc Settlement Drain is a large stormwater drainage system, with a relatively large catchment area stretching from Clayton in the City of Monash to the north to the join with Mordialloc Creek in Mordialloc to the south. The Drainage system comprises of the Clayton, Clayton South, Clarinda, Carrol Road & Bourke Road Drains.

The Clayton Retarding Basin is located in Clayton South, designed to reduce the flooding impacts in the area. Recently redesigned and completed in May 2013, it is now expected to protect to the 1% AEP flood level.

The area comprises of mixed residential, industrial and green wedge zones. Key Infrastructure in the area and at risk is the Moorabbin Airport and a number of major roads including Boundary Road, Centre Road, Clayton Road, Heatherton Road, Lower Dandenong Road & Old Dandenong Road.

### WARNING TIMES

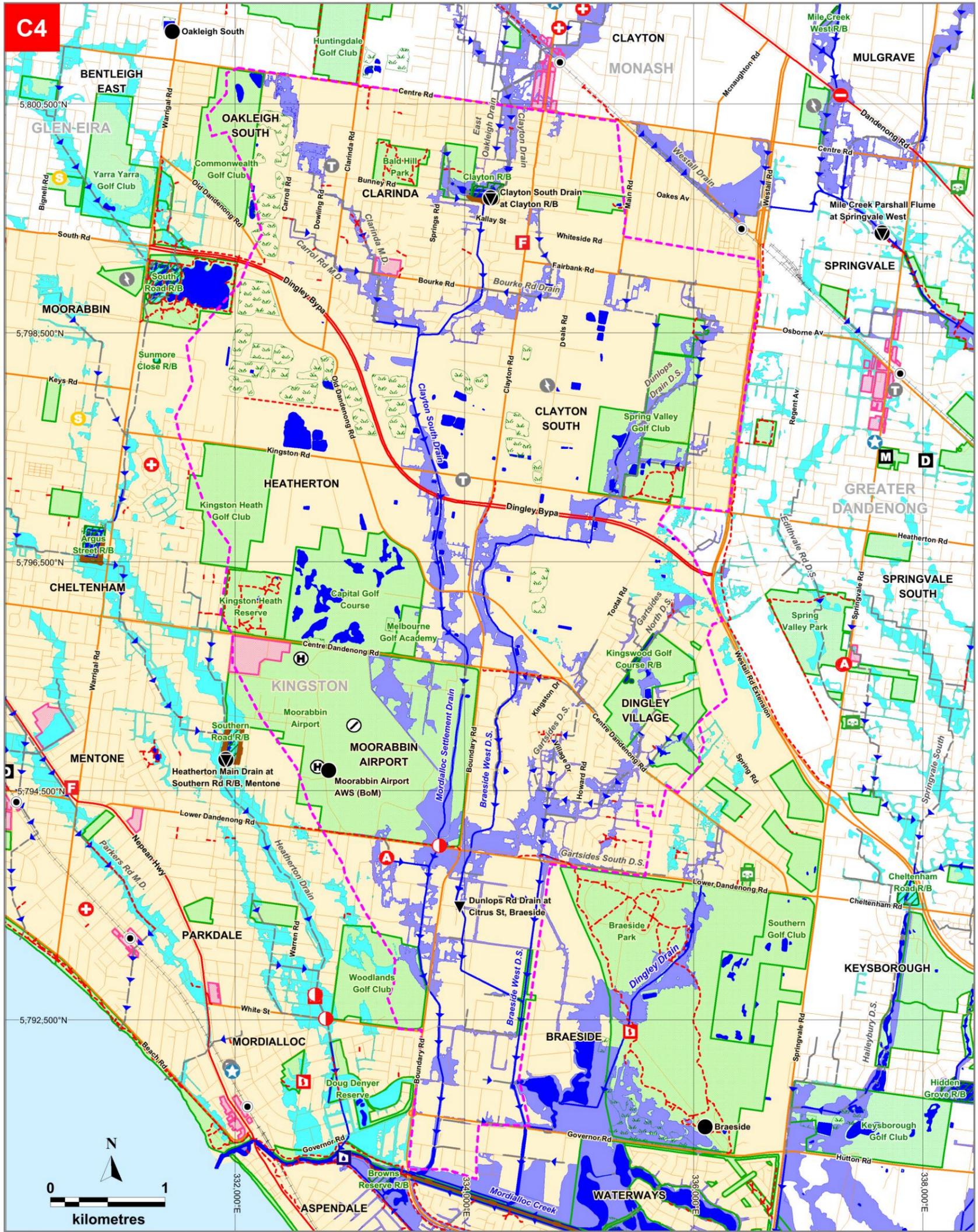
Whilst there are hydrographic/telemetry stations (river gauges) within the municipality, Melbourne Water does not provide any flood warning service at this point, due to the generally short warning times available.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Braeside	586095	Southern end of Braeside Park, 300m from Governor Road, Braeside		✓		93 F1
Clayton South Drain at Clayton R/Basin	228603A	80m past the end of Merlyn Avenue in the Clayton Retarding Basin, Clayton South	✓	✓		79 B5
Dunlops Road Drain at Braeside	228358A	East bank of the channel, north side of the Citrus Street Bridge, Braeside	✓			88 A8

Table C4.1 – Hydrographic Monitoring Stations within the Mordialloc Settlement Drain catchment

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/> or VicSES website <http://www.ses.vic.gov.au/> for any thunderstorm, flood or severe weather warnings present for their area.

AREAS OF FLOOD RISK



Flood Modelling completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**

1% AEP (100yr ARI) Flooding  
**C4 - Areas of flood risk around the Mordialloc Settlement & Braeside West Drains**

- |                                 |                                  |                                  |
|---------------------------------|----------------------------------|----------------------------------|
| Building                        | Bicycle / Walking Trail          | Ambulance Station                |
| Area of Interest                | Melbourne Water Stormwater Drain | MFB Fire Station                 |
| 1% AEP Flash Flood Extent       | River / Creek / Channel          | Municipal Offices                |
| 1% AEP Riverine Flood Extent    | Levee / Embankment               | Caravan Park                     |
| Waterbody                       | Sewer Emergency Relief Structure | Telephone Exchange               |
| Shopping Precinct               | Drainage Pumping Station         | Stream Level Gauge               |
| Melbourne Water Retarding Basin | Sewer Pumping Station            | Police Station                   |
| Natural Wetland                 | Municipal Depot                  | Rain Gauge                       |
| Area Boundary for this Appendix | Power Terminal Station           | Hospital                         |
|                                 |                                  | Victoria State Emergency Service |



This map 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.

Figure C4 – Areas of flood risk around the Mordialloc Settlement Drain in the City of Kingston

## PROPERTIES AT FLOOD RISK

Properties listed in the table below are at risk from flooding over 300mm depth within the current SBO and LSIO overlays. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Mordialloc Settlement Drain (Melbourne Water and GHD, May 2013) flood mapping and risk assessment programs.

*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 over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
4	Bond Street	Mordialloc	Mordialloc Settlement Drain	Riverine
174	Boundary Road	Braeside	Mordialloc Settlement Drain	Riverine
221-223	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
267-269	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
3/271	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
1/272-280	Boundary Road	Braeside	Braeside West Drain	Riverine
2/272-280	Boundary Road	Braeside	Braeside West Drain	Riverine
282-284	Boundary Road	Braeside	Braeside West Drain	Riverine
1-2/286-290	Boundary Road	Braeside	Braeside West Drain	Riverine
2/292	Boundary Road	Dingley Village	Braeside West Drain	Flash
3/292	Boundary Road	Dingley Village	Braeside West Drain	Flash
4/292	Boundary Road	Dingley Village	Braeside West Drain	Flash
1/294-296	Boundary Road	Dingley Village	Braeside West Drain	Flash
4/309	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
5/309	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
6/309	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
7/309	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
3/311	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
4/311	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
5/311	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
313	Boundary Road	Mordialloc	Mordialloc Settlement Drain	Riverine
409-429	Boundary Road	Heatherton	Clayton South Drain	Riverine
431	Boundary Road	Heatherton	Clayton South Drain	Riverine
2	Camdale Street	Clarinda	Bourke Rd Drain	Flash
4	Camdale Street	Clarinda	Bourke Rd Drain	Flash
5	Camdale Street	Clarinda	Bourke Rd Drain	Flash
6	Camdale Street	Clarinda	Bourke Rd Drain	Flash
7	Camdale Street	Clarinda	Bourke Rd Drain	Flash
1/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash
2/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash
3/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash
4/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash
5/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash
6/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash
7/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
8/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash
9/4A	Campbell Grove	Dingley Village	Gartsides Drain	Flash
6	Campbell Grove	Dingley Village	Gartsides Drain	Flash
7	Campbell Grove	Dingley Village	Gartsides Drain	Flash
8	Campbell Grove	Dingley Village	Gartsides Drain	Flash
9	Campbell Grove	Dingley Village	Gartsides Drain	Flash
11	Campbell Grove	Dingley Village	Gartsides Drain	Flash
8	Casco Place	Dingley Village	Gartsides South Drain	Flash
1290-1294	Centre Road	Clayton South	Clayton Drain	Flash
1296	Centre Road	Clayton South	Clayton Drain	Flash
1298	Centre Road	Clayton South	Clayton Drain	Flash
1300	Centre Road	Clayton South	Clayton Drain	Flash
1302	Centre Road	Clayton South	Clayton Drain	Flash
1304	Centre Road	Clayton South	Clayton Drain	Flash
1306	Centre Road	Clayton South	Clayton Drain	Flash
1308	Centre Road	Clayton South	Clayton Drain	Flash
1/1310	Centre Road	Clayton South	Clayton Drain	Flash
2/1310	Centre Road	Clayton South	Clayton Drain	Flash
3/1310	Centre Road	Clayton South	Clayton Drain	Flash
1312	Centre Road	Clayton South	Clayton Drain	Flash
1/260	Centre Dandenong Road	Dingley Village	Braeside West Drain	Flash
455	Centre Dandenong Road	Heatherton	Clayton South Drain	Riverine
465	Centre Dandenong Road	Heatherton	Clayton South Drain	Riverine
5	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
6	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
7	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
8	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
9	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
10	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
11	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
12	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
13	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
14	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
16	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
1/18	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
2/18	Century Drive	Braeside	Mordialloc Settlement Drain	Riverine
2/464	Clayton Road	Clayton South	Bourke Rd Drain	Flash
536-546	Clayton Road	Clayton South	Bourke Rd Drain	Flash
567	Clayton Road	Clarinda	Bourke Rd Drain	Flash
569	Clayton Road	Clarinda	Bourke Rd Drain	Flash
583	Clayton Road	Clarinda	Bourke Rd Drain	Flash
585	Clayton Road	Clarinda	Bourke Rd Drain	Flash
4	Ely Court	Dingley Village	Gartsides Drain	Flash
1	Ferndale Close	Dingley Village	Gartsides Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event

Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
3	Ferndale Close	Dingley Village	Gartsides Drain	Flash
1/2	Fonceca Street	Mordialloc	Mordialloc Settlement Drain	Riverine
2/2	Fonceca Street	Mordialloc	Mordialloc Settlement Drain	Riverine
3/2	Fonceca Street	Mordialloc	Mordialloc Settlement Drain	Riverine
4/2	Fonceca Street	Mordialloc	Mordialloc Settlement Drain	Riverine
1/4	Fonceca Street	Mordialloc	Mordialloc Settlement Drain	Riverine
2/4	Fonceca Street	Mordialloc	Mordialloc Settlement Drain	Riverine
3/4	Fonceca Street	Mordialloc	Mordialloc Settlement Drain	Riverine
51	Frank Avenue	Clayton South	Clayton Drain	Flash
5	Gairs Court	Clayton South	Clayton Drain	Flash
6	Gairs Court	Clayton South	Clayton Drain	Flash
1/8-10	Golfwood Close	Dingley Village	Gartsides North Drain	Flash
2/8-10	Golfwood Close	Dingley Village	Gartsides North Drain	Flash
3/8-10	Golfwood Close	Dingley Village	Gartsides North Drain	Flash
4/8-10	Golfwood Close	Dingley Village	Gartsides North Drain	Flash
5/8-10	Golfwood Close	Dingley Village	Gartsides North Drain	Flash
6/8-10	Golfwood Close	Dingley Village	Gartsides North Drain	Flash
245-247	Governor Road	Braeside	Braeside West Drain	Riverine
131	Howard Road	Dingley Village	Gartsides South Drain	Flash
240	Kingston Road	Clarinda	Clayton South Drain	Riverine
241-271	Kingston Road	Clarinda	Clayton South Drain	Riverine
316-318	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
320-322	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
330	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
332-348	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
1/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
2/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
3/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
4/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
5/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
6/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
7/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
8/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
9/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
10/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
11/350	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
1/352	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
2/352	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
354	Lower Dandenong Road	Mordialloc	Mordialloc Settlement Drain	Riverine
355	Lower Dandenong Road	Dingley Village	Braeside West Drain	Flash
357	Lower Dandenong Road	Dingley Village	Braeside West Drain	Flash
359-367	Lower Dandenong Road	Dingley Village	Braeside West Drain	Flash
369-377	Lower Dandenong Road	Dingley Village	Braeside West Drain	Flash
379-383	Lower Dandenong Road	Dingley Village	Braeside West Drain	Flash

Properties at risk from Flooding over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
435	Lower Dandenong Road	Dingley Village	Gartsides South Drain	Flash
437	Lower Dandenong Road	Dingley Village	Gartsides South Drain	Flash
1	Murphy Street	Clarinda	Bourke Rd Drain	Flash
2	Murphy Street	Clarinda	Bourke Rd Drain	Flash
3	Murphy Street	Clarinda	Bourke Rd Drain	Flash
4	Murphy Street	Clarinda	Bourke Rd Drain	Flash
5	Murphy Street	Clarinda	Bourke Rd Drain	Flash
1/25	Newport Road	Clayton South	Clayton Drain	Flash
2/25	Newport Road	Clayton South	Clayton Drain	Flash
3/25	Newport Road	Clayton South	Clayton Drain	Flash
233	Old Dandenong Road	Heatherton	Clayton South Drain	Riverine
2/32	Simon Street	Clayton South	Springs Rd Drain	Flash
43A	Springs Road	Clayton South	Springs Rd Drain	Flash
43B	Springs Road	Clayton South	Springs Rd Drain	Flash
26	Timms Crescent	Dingley Village	Gartsides Drain	Flash
28	Timms Crescent	Dingley Village	Gartsides Drain	Flash
30	Timms Crescent	Dingley Village	Gartsides Drain	Flash
3	Torquay Close	Dingley Village	Gartsides Drain	Flash
6	Torquay Close	Dingley Village	Gartsides Drain	Flash
8	Torquay Close	Dingley Village	Gartsides Drain	Flash
2A	Walker Street	Braeside	Mordialloc Settlement Drain	Riverine
2/2	Walker Street	Braeside	Mordialloc Settlement Drain	Riverine
3/2	Walker Street	Braeside	Mordialloc Settlement Drain	Riverine
<b>Total</b>				
<b>146</b>				

Table C4.2 – Properties at risk of flooding along the Mordialloc Settlement and Braeside West Drain catchments in the City of Kingston

## ISOLATION

No major isolation risks exist for areas around the Mordialloc Settlement Drain and Braeside West Drain in Oakleigh South, Clarinda, Clayton South, Heatherton, Dingley Village, Moorabbin Airport, Mordialloc & Braeside during a 1% AEP (100yr ARI) event. Some localised short-duration isolation may occur due to flash flooding.

## ESSENTIAL INFRASTRUCTURE

- Moorabbin Airport possibly impacted with flooding to southern end of runways L31 & R31 during a 2% AEP (50yr ARI) event.
- A Sewer Emergency Relief Point on Lower Dandenong Road at Moorabbin Airport is located along Mordialloc Settlement Drain and may be submersed within floodwaters during a 5% AEP (20yr ARI) event.
- Access may be restricted to Mordialloc Ambulance Station on Sibthorpe Street, Mordialloc during a 2% AEP (50yr ARI) 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 Kingston

---

is available via the website at:  
[https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23\\_Kingston\\_LAM.pdf](https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23_Kingston_LAM.pdf)

Apart from the roads outlined below, all other essential infrastructure and services areas around the Mordialloc Settlement Drain and Braeside West Drain 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 the Mordialloc Settlement Drain in Oakleigh South, Clarinda, Clayton South, Heatherton, Dingley Village, Moorabbin Airport, Mordialloc & Braeside. Check the VicRoads website for more details: <http://alerts.vicroads.vic.gov.au/>

VicRoads Roads affected in a 1% AEP event
• Boundary Road, Clarinda between Old Dandenong Road and Centre Dandenong Road
• Boundary Road, Mordialloc between Mills Road and Walker Road
• Centre Road, Clayton South between Knight Street & Frank Avenue
• Clayton Road, Clayton South at Kallay Street
• Heatherton Road, Clayton South at Spring Valley Golf Club
• Lower Dandenong Road, Braeside east of Boundary Road
• Lower Dandenong Road, Mordialloc west of Boundary Road
• Old Dandenong Road, Clarinda at Capital Golf Course west of Boundary Road
• Old Dandenong Road, Dingley Village east of Boundary Road

Table C4.3 – VicRoads Possible Road Closures during a flooding event

Kingston City Council Roads affected in a 1% AEP event			
<b>BRAESIDE</b>	• Hendon Court	• McMillan Street	• Torquay Close
• Darling Road	• Mack Crescent	• Miranda Close	• Village Drive
• Industrial Drive	• Mia Street	• Murchison Crescent	• Von Nida Court
• Malcolm Road	• Murphy Street	• Osborne Avenue	• Wendon Court
• Tarnard Drive	• Peace Road	• Whiteside Road	• Woodland Court
• Woodlands Drive	• Rosella Avenue	<b>DINGLEY VILLAGE</b>	• Wyndarra Crescent
<b>CLARINDA</b>	• Schneider Crescent	• Campbell Grove	<b>MORDIALLOC</b>
• Allwen Court	• Springs Road	• Casco Place	• Bond Street
• Andrew Court	• Tatra Close	• Chifley Court	• De Havilland Road
• Bourke Road	• Viney Street	• Ely Court	• Fonceca Street
• Bushland Avenue	<b>CLAYTON SOUTH</b>	• Golfwood Close	• Japaddy Street
• Carbine Avenue	• Brandon Way	• Grange Road	• Nicholls Court
• Carndale Street	• Cleary Court	• Hillingdon Court	• Sibthorpe Street
• Cerise Court	• Eileen Road	• Holland Avenue	<b>OAKLEIGH SOUTH</b>
• Cooinda Crescent	• Frank Avenue	• Howard Road	• Benambra Street
• Dalbeattie Drive	• Gairs Court	• Lackenheath Court	• Cleeland Road
• Davanzo Avenue	• James Street	• Liberty Court	• Dalwood Court
• Debbie Close	• Mallawa Street	• Lord Avenue	• Dowling Road
• Elder Street	• Maltarra Street	• Redwood Drive	

Table C4.4 – Kingston City Council Possible Road Closures during a flooding event

## 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
Clayton	Clayton Drain	57,120m <sup>2</sup>	93.5ML	42.8m AHD	43.4m AHD	43.4m AHD	Low	3	79A5
Kingswood Golf Course	Gartsides North Drain	17,150m <sup>2</sup>	22ML	N/A	Unavailable	24.0m AHD	Very Low	0	88E3

Table C4.5 – Melbourne Water Retarding Basins within the Mordialloc Settlement and Braeside West Drain catchment in the City of Kingston

No formal Pumping Stations or Levees exist around the Mordialloc Settlement Drain.

## SEWERAGE INFRASTRUCTURE

Sewerage Infrastructure of note during a severe flood event located around the Mordialloc Settlement Drain are contained within the following table.

### SEWER EMERGENCY RELIEF POINTS

On Drain / Waterway	Location	Melway Reference
Mordialloc Settlement Drain	North side of Lower Dandenong Road near Boundary Road, Moorabbin Airport	87K7

Table C4.6 – Sewer Emergency Relief Points in the Mordialloc Settlement and Braeside West Drain Catchment in the City of Kingston

## COMMAND, CONTROL & COORDINATION

VICSES will assume overall control of the response to flood incidents. Other agencies will be requested to support operations as detailed in this Plan. Control and coordination of a flood incident shall be carried out at the lowest effective level and in accordance with the State Emergency Response Plan (EMMV Part 3). During significant events, VICSES will conduct incident management using multi-agency resources.

---

## FLOOD IMPACTS & REQUIRED ACTIONS

The table below is a breakdown of the number of properties flooded in a 1% AEP (100yr ARI) event. Refer to the following intelligence card/s for Clayton Retarding Basin and Braeside for more details.

Land Use Flooded in a 1% AEP Event	Total
Residential	58
Commercial	12
Industrial	69
Public Land	0
Rural	7
<b>Total</b>	<b>146</b>

Table C4.7 – Breakdown of likely land use flooded in the Mordialloc Settlement and Braeside West Catchment in Kingston during a 1% AEP event

## FLOOD INTELLIGENCE CARD – CLAYTON SOUTH GAUGE, CLAYTON SOUTH DRAIN

Version 3 – September 2017



*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.*

LOCATION	<b>Clayton Retarding Basin on Merlyn Avenue, Clayton South</b>
MELWAY REFERENCE:	<b>79B5</b>
STREAM:	<b>Clayton South Drain</b>
GAUGE NUMBER:	<b>228603A</b>
GAUGE ZERO:	<b>40.32m AHD</b>
GAUGE TYPE	<b>Stream Level &amp; Rain</b>

MINOR:	<b>N/A</b>
MODERATE:	<b>N/A</b>
MAJOR	<b>N/A</b>
EMBANKMENT HEIGHT:	<b>3.08m (43.4m AHD)</b>
TELEMETRIC/MANUAL	<b>Telemetric</b>
HIGHEST RECORDED FLOOD:	<b>2.68m (14<sup>th</sup> December 1993)</b>

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
2.01m	20% AEP (5yr ARI) Flood Level	<b>Water Over Road</b> <b>Bourke Road Drain, Clayton South</b> <ul style="list-style-type: none"> <li>Whiteside Road, Clayton South</li> <li>Murphy Street, Clarinda</li> </ul> <b>Clayton / Clayton South Drain, Clayton South</b> <ul style="list-style-type: none"> <li>Boundary Road southbound lane, Clarinda between Old Dandenong Road and Centre Dandenong Road</li> </ul>	
2.25m	10% AEP (10yr ARI) Flood Level	<b>Water Over Road</b> <b>Bourke Road Drain, Clayton South</b> <ul style="list-style-type: none"> <li>Whiteside Road, Clayton South</li> <li>Osborne Avenue, Clayton South at Clayton Road</li> <li>Murphy Street, Clarinda</li> </ul> <b>Clarinda Main Drain / Carrol Road Drain</b> <ul style="list-style-type: none"> <li>Dalbeattie Drive, Clarinda</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Schneider Crescent, Clarinda</li> <li>• Tatra Close, Clarinda</li> <li>• Hendon Court, Clarinda</li> <li>• Davanzo Avenue, Clarinda</li> <li>• <b>Clayton / Clayton South Drain, Clayton South</b></li> <li>• Boundary Road southbound lane, Clarinda between Old Dandenong Road and Centre Dandenong Road</li> </ul>	
2.48m		<ul style="list-style-type: none"> <li>• Spillway Level Reached at Clayton Retarding Basin</li> </ul>	
2.53m	5% AEP (20yr ARI) Flood Level	<p><b>Essential Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• Sewer Emergency Relief Point on Lower Dandenong Road at Moorabbin Airport located within floodwaters</li> </ul> <p><b>Water Over Road</b></p> <p><b>Bourke Road Drain, Clayton South</b></p> <ul style="list-style-type: none"> <li>• James Street, Clayton South</li> <li>• Mallawa Street, Clayton South</li> <li>• Cleary Court, Clayton South</li> <li>• Whiteside Road, Clayton South</li> <li>• Osborne Avenue, Clayton South at Clayton Road</li> <li>• Murphy Street, Clarinda</li> <li>• Camdale Street, Clarinda</li> </ul> <p><b>Clarinda Main Drain / Carrol Road Drain</b></p> <ul style="list-style-type: none"> <li>• Cleeland Road, Oakleigh South</li> <li>• Dalwood Court, Oakleigh South</li> <li>• Dalbeattie Drive, Clarinda</li> <li>• Coinda Crescent, Clarinda</li> <li>• Schneider Crescent, Clarinda</li> <li>• Dowling Road, Oakleigh South</li> <li>• Bourke Road, Clarinda near Clarinda Road</li> <li>• Tatra Close, Clarinda</li> <li>• Carbine Avenue, Clarinda</li> <li>• Hendon Court, Clarinda</li> <li>• Davanzo Avenue, Clarinda</li> </ul> <p><b>Clayton / Clayton South Drain, Clayton South</b></p> <ul style="list-style-type: none"> <li>• Springs Road, Clarinda at St Andrews Catholic Primary School</li> <li>• Mia Street, Clarinda</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Allwen Court, Clarinda</li> <li>• Peace Road, Clarinda</li> <li>• Old Dandenong Road, Clarinda west of Boundary Road</li> <li>• Boundary Road, Clarinda between Old Dandenong Road and Centre Dandenong Road</li> </ul>	
2.76m	2% AEP (50yr ARI) Flood Level	<p><b>Essential Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• Moorabbin Airport possibly impacted with flooding to southern end of runways L31 &amp; R31</li> <li>• Sewer Emergency Relief Point on Lower Dandenong Road at Moorabbin Airport located within floodwaters</li> <li>• Access may be restricted to Mordialloc Ambulance Station on Sibthorpe Street, Mordialloc</li> </ul> <p><b>Water Over Road</b></p> <p><b>Bourke Road Drain, Clayton South</b></p> <ul style="list-style-type: none"> <li>• James Street, Clayton South</li> <li>• McMillan Street, Clayton South</li> <li>• Mallawa Street, Clayton South</li> <li>• Cleary Court, Clayton South</li> <li>• Whiteside Road, Clayton South</li> <li>• Osborne Avenue, Clayton South at Clayton Road</li> <li>• Murphy Street, Clarinda</li> <li>• Camdale Street, Clarinda</li> </ul> <p><b>Clarinda Main Drain / Carrol Road Drain</b></p> <ul style="list-style-type: none"> <li>• Cleeland Road, Oakleigh South</li> <li>• Benambra Street, Oakleigh South</li> <li>• Dalwood Court, Oakleigh South</li> <li>• Dalbeattie Drive, Clarinda</li> <li>• Cooina Crescent, Clarinda</li> <li>• Schneider Crescent, Clarinda</li> <li>• Viney Street, Clarinda at Bourke Road</li> <li>• Dowling Road, Oakleigh South</li> <li>• Bourke Road, Clarinda near Clarinda Road</li> <li>• Debbie Close, Clarinda</li> <li>• Rosella Avenue, Clarinda</li> <li>• Tatra Close, Clarinda</li> <li>• Andrew Court, Clarinda</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Carbine Avenue, Clarinda</li> <li>• Hendon Court, Clarinda</li> <li>• Davanzo Avenue, Clarinda</li> <li>• Elder Street, Clarinda at Elder South Street</li> <li>• <b>Clayton / Clayton South Drain, Clayton South</b></li> <li>• Centre Road, Clayton South between Knight Street &amp; Frank Avenue</li> <li>• Frank Avenue, Clayton South</li> <li>• Springs Road, Clarinda at St Andrews Catholic Primary School</li> <li>• Mack Crescent, Clarinda</li> <li>• Mia Street, Clarinda</li> <li>• Allwen Court, Clarinda</li> <li>• Peace Road, Clarinda</li> <li>• Old Dandenong Road, Clarinda west of Boundary Road</li> <li>• Boundary Road, Clarinda between Old Dandenong Road and Centre Dandenong Road</li> <li>• <b>Mordialloc Settlement Drain, Mordialloc</b></li> <li>• Lower Dandenong Road, Mordialloc west of Boundary Road</li> <li>• De Havilland Road, Mordialloc</li> <li>• Japaddy Street, Mordialloc</li> <li>• Sibthorpe Street, Mordialloc</li> <li>• Fonceca Street, Mordialloc</li> <li>• Nicholls Court, Mordialloc</li> <li>• Bond Street, Mordialloc</li> <li>• Boundary Road, Mordialloc between Mills Road and Walker Street</li> </ul>	
2.90m	1% AEP (100yr ARI) Flood Level	<p><b>Properties at Flood Risk (above 300mm depth) (Properties likely at risk before this Level)</b></p> <p><b>98 Properties in Total</b></p> <p><b>Bourke Rd Drain</b></p> <ul style="list-style-type: none"> <li>• 2, 4, 5, 6 &amp; 7 Camdale Street, Clarinda</li> <li>• 2/464, 567, 569, 583 &amp; 585 Clayton Road, Clayton South</li> <li>• 1, 2, 3, 4 &amp; 5 Murphy Street, Clarinda</li> <li>• 536-546 Clayton Road, Clayton South</li> </ul> <p><b>Clayton Drain</b></p> <ul style="list-style-type: none"> <li>• 1290-1294, 1296, 1298, 1300, 1302, 1304, 1306, 1308, 1/1310, 2/1310, 3/1310 &amp; 1312 Centre Road, Clayton South</li> <li>• 51 Frank Avenue, Clayton South</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• 5 &amp; 6 Gairs Court, Clayton South</li> <li>• 1/25, 2/25 &amp; 3/25 Newport Road, Clayton South</li> <li><b>Clayton South Drain</b></li> <li>• 241-271, 409-429, 431, 455, 465, 233 &amp; 240 Kingston Road, Clarinda</li> <li>• 409-429 &amp; 431 Boundary Road, Heatherton</li> <li>• 455 &amp; 465 Centre Dandenong Road, Heatherton</li> <li>• 233 Old Dandenong Road, Heatherton</li> <li>• 240 Kingston Road, Clarinda</li> <li><b>Mordialloc Settlement Drain</b></li> <li>• 4 Bond Street, Mordialloc</li> <li>• 174, 221-223, 267-269 &amp; 3/271 Boundary Road, Braeside</li> <li>• 4/309, 5/309, 6/309, 7/309, 3/311, 4/311, 5/311 &amp; 313 Boundary Road, Mordialloc</li> <li>• 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 1/18 &amp; 2/18 Century Drive, Braeside</li> <li>• 1/2, 2/2, 3/2, 4/2, 1/4, 2/4 &amp; 3/4 Fonceca Street, Mordialloc</li> <li>• 316-318, 320-322, 330, 332-348, Factories 1-11/350 &amp; Factories 1-2/352 Lower Dandenong Road, Mordialloc</li> <li><b>Springs Rd Drain</b></li> <li>• 2/32 Simon Street, Clayton South</li> <li>• 43A &amp; 43B Springs Road, Clayton South</li> <li><b>Essential Infrastructure Flooded</b></li> <li>• Moorabbin Airport possibly impacted with flooding to southern end of runways L31 &amp; R31</li> <li>• Sewer Emergency Relief Point on Lower Dandenong Road at Moorabbin Airport located within floodwaters</li> <li>• Access may be restricted to Mordialloc Ambulance Station on Sibthorpe Street, Mordialloc</li> <li><b>Water Over Road</b></li> <li><b>Bourke Road Drain, Clayton South</b></li> <li>• James Street, Clayton South</li> <li>• McMillan Street, Clayton South</li> <li>• Mallawa Street, Clayton South</li> <li>• Cleary Court, Clayton South</li> <li>• Clayton Road, Clayton South at Kallay Street</li> <li>• Whiteside Road, Clayton South</li> <li>• Osborne Avenue, Clayton South at Clayton Road</li> <li>• Murphy Street, Clarinda</li> <li>• Camdale Street, Clarinda</li> <li><b>Clarinda Main Drain / Carrol Road Drain</b></li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Cleeland Road, Oakleigh South</li> <li>• Benambra Street, Oakleigh South</li> <li>• Dalwood Court, Oakleigh South</li> <li>• Dalbeattie Drive, Clarinda</li> <li>• Cooinda Crescent, Clarinda</li> <li>• Schneider Crescent, Clarinda</li> <li>• Viney Street, Clarinda at Bourke Road</li> <li>• Dowling Road, Oakleigh South</li> <li>• Bourke Road, Clarinda near Clarinda Road</li> <li>• Debbie Close, Clarinda</li> <li>• Rosella Avenue, Clarinda</li> <li>• Tatra Close, Clarinda</li> <li>• Andrew Court, Clarinda</li> <li>• Carbine Avenue, Clarinda</li> <li>• Hendon Court, Clarinda</li> <li>• Cerise Court, Clarinda</li> <li>• Davanzo Avenue, Clarinda</li> <li>• Elder Street, Clarinda at Elder South Street</li> <li>• <b>Clayton / Clayton South Drain, Clayton South</b></li> <li>• Centre Road, Clayton South between Knight Street &amp; Frank Avenue</li> <li>• Frank Avenue, Clayton South</li> <li>• Maltarra Street, Clayton South</li> <li>• Gairs Court, Clayton South</li> <li>• Springs Road, Clarinda at St Andrews Catholic Primary School</li> <li>• Mack Crescent, Clarinda</li> <li>• Mia Street, Clarinda</li> <li>• Allwen Court, Clarinda</li> <li>• Bushland Avenue, Clarinda</li> <li>• Peace Road, Clarinda</li> <li>• Old Dandenong Road, Clarinda at Capital Golf Course west of Boundary Road</li> <li>• Boundary Road, Clarinda between Old Dandenong Road and Centre Dandenong Road</li> <li>• <b>Mordialloc Settlement Drain, Mordialloc</b></li> <li>• Lower Dandenong Road, Mordialloc west of Boundary Road</li> <li>• De Havilland Road, Mordialloc</li> <li>• Japaddy Street, Mordialloc</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Sibthorpe Street, Mordialloc</li> <li>• Fonceca Street, Mordialloc</li> <li>• Nicholls Court, Mordialloc</li> <li>• Bond Street, Mordialloc</li> <li>• Boundary Road, Mordialloc between Mills Road and Walker Street</li> <li>• Industrial Drive, Braeside</li> </ul>	
3.08m	4 <sup>th</sup> May 1992 Flood Level Peak	<ul style="list-style-type: none"> <li>• Full Supply Level Reached at the Redesigned (May 2013) Clayton Retarding Basin. Water at top of Embankment Crest Height.</li> </ul>	

Table C4.8 – Breakdown of likely consequences at various Clayton South gauge level heights along the Clayton South and Mordialloc Settlement Drains with operational considerations

## FLOOD INTELLIGENCE CARD – BRAESIDE GAUGE, DUNLOPS ROAD DRAIN

Version 3 – September 2017



*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.*

LOCATION	<b>Citrus Street, Braeside</b>
MELWAY REFERENCE:	<b>88A8</b>
STREAM:	<b>Braeside West Drain (downstream of Dunlops Road Drain)</b>
GAUGE NUMBER:	<b>228358A</b>
GAUGE ZERO:	<b>4.00m AHD (Since July 1995)</b>
GAUGE TYPE	<b>Stream Level</b>

MINOR:	<b>N/A</b>
MODERATE:	<b>N/A</b>
MAJOR	<b>N/A</b>
LEVEE HEIGHT:	<b>N/A</b>
TELEMETRIC/MANUAL	<b>Telemetric</b>
HIGHEST RECORDED FLOOD:	<b>5.42m* (18<sup>th</sup> July 1990) *gauge since repositioned (July 1995) resulting in different flood levels</b>

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
1.10m	20% AEP (5yr ARI) Flood Level	<b>Water Over Road</b> <b>Dunlops Drain, Clayton South</b> <ul style="list-style-type: none"> <li>• Miranda Close, Clayton South</li> <li>• Murchison Crescent, Clayton South</li> </ul> <b>Braeside West Drain, Braeside</b> <ul style="list-style-type: none"> <li>• Darling Road, Braeside</li> </ul>	
1.23m	10% AEP (10yr ARI) Flood Level	<b>Water Over Road</b> <b>Dunlops Drain, Clayton South</b> <ul style="list-style-type: none"> <li>• Brandon Way, Clayton South</li> <li>• Miranda Close, Clayton South</li> <li>• Murchison Crescent, Clayton South</li> </ul> <b>Braeside West Drain, Braeside</b> <ul style="list-style-type: none"> <li>• Redwood Drive, Dingley Village</li> </ul>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>Darling Road, Braeside</li> </ul>	
1.38m	5% AEP (20yr ARI) Flood Level	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>Spring Valley Golf Club flooded</li> </ul> <p><b>Water Over Road</b></p> <p><b>Dunlops Drain, Clayton South</b></p> <ul style="list-style-type: none"> <li>Brandon Way, Clayton South</li> <li>Miranda Close, Clayton South</li> <li>Murchison Crescent, Clayton South</li> </ul> <p><b>Old Dandenong Drain, Dingley Village</b></p> <ul style="list-style-type: none"> <li>Grange Road, Dingley Village</li> </ul> <p><b>Braeside West Drain, Braeside</b></p> <ul style="list-style-type: none"> <li>Redwood Drive, Dingley Village</li> <li>Lower Dandenong Road, Braeside east of Boundary Road</li> <li>Darling Road, Braeside</li> </ul>	
1.61m	2% AEP (50yr ARI) Flood Level	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>Spring Valley Golf Club flooded</li> </ul> <p><b>Water Over Road</b></p> <p><b>Dunlops Drain, Clayton South</b></p> <ul style="list-style-type: none"> <li>Brandon Way, Clayton South</li> <li>Miranda Close, Clayton South</li> <li>Murchison Crescent, Clayton South</li> <li>Eileen Road, Clayton South</li> <li>Heatherton Road, Clayton South at Spring Valley Golf Club</li> </ul> <p><b>Old Dandenong Drain, Dingley Village</b></p> <ul style="list-style-type: none"> <li>Grange Road, Dingley Village</li> <li>Old Dandenong Road, Dingley Village east of Boundary Road</li> </ul> <p><b>Braeside West Drain, Braeside</b></p> <ul style="list-style-type: none"> <li>Redwood Drive, Dingley Village</li> <li>Lower Dandenong Road, Braeside east of Boundary Road</li> <li>Tarnard Drive, Braeside</li> <li>Malcolm Road, Braeside</li> <li>Darling Road, Braeside</li> </ul>	
1.88m	1% AEP (100yr ARI) Flood Level	<p><b>Properties at Flood Risk (Properties likely at risk before this Level)</b></p> <p><b>15 Properties in Total</b></p>	

Drain Height	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<p><b>Braeside West Drain</b></p> <ul style="list-style-type: none"> <li>• 1/260 Centre Dandenong Road, Dingley Village</li> <li>• 1/272-280, 2/272-280, 282-284, 1-2/286-290, 2/292, 3/292, 4/292 &amp; 1/294-296 Boundary Road, Braeside</li> <li>• 245-247 Governor Road, Braeside</li> <li>• 355, 357, 359-367, 369-377 &amp; 379-383 Lower Dandenong Road, Dingley Village</li> </ul> <p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• Spring Valley Golf Club flooded</li> </ul> <p><b>Water Over Road</b></p> <p><b>Dunlops Drain, Clayton South</b></p> <ul style="list-style-type: none"> <li>• Brandon Way, Clayton South</li> <li>• Miranda Close, Clayton South</li> <li>• Murchison Crescent, Clayton South</li> <li>• Eileen Road, Clayton South</li> <li>• Heatherston Road, Clayton South at Spring Valley Golf Club</li> </ul> <p><b>Old Dandenong Drain, Dingley Village</b></p> <ul style="list-style-type: none"> <li>• Grange Road, Dingley Village</li> <li>• Old Dandenong Road, Dingley Village east of Boundary Road</li> </ul> <p><b>Braeside West Drain, Braeside</b></p> <ul style="list-style-type: none"> <li>• Redwood Drive, Dingley Village</li> <li>• Lower Dandenong Road, Braeside east of Boundary Road</li> <li>• Tarnard Drive, Braeside</li> <li>• Malcolm Road, Braeside</li> <li>• Darling Road, Braeside</li> </ul>	

Table C4.9 – Breakdown of possible consequences at various rainfall intensities around the Braeside West Drain with operational considerations

## FLOOD INTELLIGENCE CARD – GARTSIDES DRAIN, DINGLEY VILLAGE (UNGAUGED)

Version 3 – September 2017



*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.*

CLOSEST RAIN GAUGE	<b>Braeside</b>
LOCATION	<b>Braeside Park</b>
MELWAY REF:	<b>93F1</b>

GAUGE NUMBER	<b>586095</b>
GAUGE TYPE	<b>Rain</b>
TELEMETRIC/MANUAL	<b>Telemetric</b>

Design Rainfall Depths (mm) – <i>Indication of Possible Flooding</i>	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
10mm in 10 mins; 18mm in 30 mins; 23mm in 1 hour; 30mm in 2 hours; 45mm in 6 hours; or 58mm in 12 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)	<b>Water Over Road</b> <b>Gartsides Drain System</b> <ul style="list-style-type: none"> <li>Torquay Close, Dingley Village</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
<p>12mm in 10 mins; 20mm in 30 mins; 27mm in 1 hour; 35mm in 2 hours; 52mm in 6 hours; or 66mm in 12 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>	10% AEP (10 year ARI)	<p><b>Water Over Road</b></p> <p><b>Gartsides Drain System</b></p> <ul style="list-style-type: none"> <li>• Campbell Grove, Dingley Village</li> <li>• Liberty Court, Dingley Village</li> <li>• Lord Avenue, Dingley Village</li> <li>• Torquay Close, Dingley Village</li> <li>• Holland Avenue, Dingley Village</li> </ul>	
<p>15mm in 10 mins; 24mm in 30 mins; 32mm in 1 hour; 41mm in 2 hours; 60mm in 6 hours; or 77mm in 12 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>	5% AEP (20 year ARI)	<p><b>Water Over Road</b></p> <p><b>Gartsides Drain System</b></p> <ul style="list-style-type: none"> <li>• Campbell Grove, Dingley Village</li> <li>• Ely Court, Dingley Village</li> <li>• Liberty Court, Dingley Village</li> <li>• Lord Avenue, Dingley Village</li> <li>• Torquay Close, Dingley Village</li> <li>• Holland Avenue, Dingley Village</li> </ul> <p><b>Gartsides South Drain</b></p> <ul style="list-style-type: none"> <li>• Howard Road, Dingley Village</li> <li>• Woodlands Drive, Braeside</li> </ul>	
<p>18mm in 10 mins; 30mm in 30 mins; 39mm in 1 hour;</p>	2% AEP (50 year ARI)	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• Kingswood Golf Club on Centre Dandenong Road, Dingley Village flooded</li> </ul> <p><b>Water Over Road</b></p> <p><b>Gartsides North Drain System</b></p>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
<p>50mm in 2 hours; 73mm in 6 hours; or 92mm in 12 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>		<ul style="list-style-type: none"> <li>• Wyndarra Crescent, Dingley Village</li> <li>• Woodland Court, Dingley Village</li> <li>• Hillingdon Court, Dingley Village</li> <li>• Wendon Court, Dingley Village</li> <li>• Golfwood Close, Dingley Village</li> </ul> <p><b>Gartsides Drain System</b></p> <ul style="list-style-type: none"> <li>• Campbell Grove, Dingley Village</li> <li>• Von Nida Court, Dingley Village</li> <li>• Ely Court, Dingley Village</li> <li>• Liberty Court, Dingley Village</li> <li>• Chifley Court, Dingley Village</li> <li>• Lord Avenue, Dingley Village</li> <li>• Torquay Close, Dingley Village</li> <li>• Holland Avenue, Dingley Village</li> </ul> <p><b>Gartsides South Drain</b></p> <ul style="list-style-type: none"> <li>• Howard Road, Dingley Village</li> <li>• Casco Place, Dingley Village</li> <li>• Woodlands Drive, Braeside</li> </ul>	
<p>21mm in 10 mins; 35mm in 30 mins; 44mm in 1 hour; 57mm in 2 hours; 82mm in 6 hours; or 104mm in 12 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>	1% AEP (100 year ARI)	<p><b>Properties at Flood Risk (over 300mm depth) (Properties likely at risk before this Level)</b></p> <p><b>33 Properties in Total</b></p> <p><b>Gartsides Drain</b></p> <ul style="list-style-type: none"> <li>• 1/4A, 2/4A, 3/4A, 4/4A, 5/4A, 6/4A, 7/4A, 8/4A, 9/4A, 6, 7, 8, 9 &amp; 11 Campbell Grove, Dingley Village</li> <li>• 4 Ely Court, Dingley Village</li> <li>• 1 &amp; 3 Ferndale Close, Dingley Village</li> <li>• 26, 28 &amp; 30 Timms Crescent, Dingley Village</li> <li>• 3, 6 &amp; 8 Torquay Close, Dingley Village</li> </ul> <p><b>Gartsides North Drain</b></p> <ul style="list-style-type: none"> <li>• 1/8-10, 2/8-10, 3/8-10, 4/8-10, 5/8-10 &amp; 6/8-10 Golfwood Close, Dingley Village</li> </ul> <p><b>Gartsides South Drain</b></p> <ul style="list-style-type: none"> <li>• 8 Casco Place, Dingley Village</li> <li>• 131 Howard Road, Dingley Village</li> <li>• 435 &amp; 437 Lower Dandenong Road, Dingley Village</li> </ul> <p><b>Community Infrastructure Flooded</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>• Kingswood Golf Club on Centre Dandenong Road, Dingley Village flooded</li> </ul> <p><b>Water Over Road</b></p> <p><b>Gartsides North Drain System</b></p> <ul style="list-style-type: none"> <li>• Wyndarra Crescent, Dingley Village</li> <li>• Lackenheath Court, Dingley Village</li> <li>• Woodland Court, Dingley Village</li> <li>• Hillingdon Court, Dingley Village</li> <li>• Wendon Court, Dingley Village</li> <li>• Golfwood Close, Dingley Village</li> </ul> <p><b>Gartsides Drain System</b></p> <ul style="list-style-type: none"> <li>• Campbell Grove, Dingley Village</li> <li>• Von Nida Court, Dingley Village</li> <li>• Ely Court, Dingley Village</li> <li>• Liberty Court, Dingley Village</li> <li>• Chifley Court, Dingley Village</li> <li>• Lord Avenue, Dingley Village</li> <li>• Torquay Close, Dingley Village</li> <li>• Village Drive, Dingley Drive at Ferndale Close</li> <li>• Holland Avenue, Dingley Village</li> </ul> <p><b>Gartsides South Drain</b></p> <ul style="list-style-type: none"> <li>• Howard Road, Dingley Village</li> <li>• Casco Place, Dingley Village</li> <li>• Woodlands Drive, Braeside</li> </ul>	

Table C4.10 – Breakdown of possible consequences at various rainfall intensities around the Gartsides Drain in Dingley Village with operational considerations

# APPENDIX C5 – MORDIALLOC CREEK, WATERWAYS & DINGLEY DRAIN FLOOD EMERGENCY PLAN

## OVERVIEW OF FLOODING CONSEQUENCES

Mordialloc Creek is an open waterway transferring drainage from Dandenong Creek to the east through the City of Greater Dandenong and stormwater from the Haileybury, Braeside West, Mordialloc Settlement and Heatherton Drains from the north and the Centre Swamp Drain to the south.

Levees have been constructed on both banks of the creek with a freeboard of 800mm during a 1% AEP (100yr ARI) event in the sections through the City of Kingston. Areas adjacent to the creek however may experience flooding due either from backup of stormwater discharging along either one of the drainage systems mentioned above or because of the flat terrain in the region. One of these areas at risk is the suburb of Waterways. While most properties have been built above the expected 1% AEP flood level, isolation is a risk with limited access routes along Governor Road and Springvale Road.

Storm Surges along the coast of Port Phillip Bay may make their way up Mordialloc Creek during a 1% AEP event but are expected only to impact reserves and parkland adjacent to the Creek.

Browns Reserve Retarding Basin is located on the southern bank of the Creek in Aspendale, restricting flows into the Creek and protecting industrial businesses on the northern bank in Mordialloc. A Pumping Station (Browns Reserve Pumping Station) is located at this retarding basin, which helps to maintain flows.

## WARNING TIMES

Whilst there are hydrographic/telemetry stations (river gauges) within the municipality, Melbourne Water does not provide any flood warning service at this point, due to the generally short warning times available.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Braeside	586095	Southern end of Braeside Park, 300m from Governor Road, Braeside		✓		93 F1
Dunlops Road Drain at Braeside	228358A	East bank of the channel, north side of the Citrus Street Bridge, Braeside	✓			88 A8
Dandenong Creek at Keysborough	228356B	East side of the channel, along the Bicycle / Walking Trail under the Eastlink Bridge. 400m south of Arkwright Drive, Dandenong South	✓	✓		94 H5

Table C5.1 – Hydrographic Monitoring Stations within the Mordialloc Creek catchment

---

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/> or VicSES website <http://www.ses.vic.gov.au/> for any thunderstorm, flood or severe weather warnings present for their area.

AREAS OF FLOOD RISK



Flood Modelling completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**

1% AEP (100yr ARI) Flooding  
**C5 - Areas of flood risk around the Mordialloc Creek & Dingley Drain**

- |                                 |                                  |                    |
|---------------------------------|----------------------------------|--------------------|
| Building                        | Bicycle / Walking Trail          | Ambulance Station  |
| Area of Interest                | Melbourne Water Stormwater Drain | Caravan Park       |
| 1% AEP Flash Flood Extent       | River / Creek / Channel          | Airport / Airfield |
| 1% AEP Riverine Flood Extent    | Levee / Embankment               | Telephone Exchange |
| Waterbody                       | Sewer Emergency Relief Structure | Stream Level Gauge |
| Shopping Precinct               | Drainage Pumping Station         | Police Station     |
| Melbourne Water Retarding Basin | Sewer Pumping Station            | Rain Gauge         |
| Natural Wetland                 | Helipad                          |                    |
| Area Boundary for this Appendix |                                  |                    |



This map 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.

Figure C5 – Areas affected around Mordialloc Creek, Waterways and the Dingley Drain in the City of Kingston

## PROPERTIES AT FLOOD RISK

Properties listed in the table below are at risk from flooding over 300mm depth. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Mordialloc Settlement Drain (Melbourne Water and GHD, May 2013) flood mapping and risk assessment programs.

*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 over 300mm depth during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
23/52-70	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
24/52-70	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
50/52-70	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
51/52-70	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
58/52-70	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
108-110	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
1/112-114	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
2/112-114	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
3/112-114	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
4/112-114	Centre Dandenong Road	Dingley Village	Dingley Drain	Flash
14	Chadree Court	Dingley Village	Dingley Drain	Flash
11	Colin Court	Dingley Village	Dingley Drain	Flash
16-18	Colin Court	Dingley Village	Dingley Drain	Flash
4	Elliott Crescent	Dingley Village	Dingley Drain	Flash
5	Elliott Crescent	Dingley Village	Dingley Drain	Flash
6	Elliott Crescent	Dingley Village	Dingley Drain	Flash
7	Elliott Crescent	Dingley Village	Dingley Drain	Flash
8	Elliott Crescent	Dingley Village	Dingley Drain	Flash
12	Mcardle Street	Dingley Village	Dingley Drain	Flash
14	Mcardle Street	Dingley Village	Dingley Drain	Flash
25-27	Park Way	Braeside	Dingley Drain	Riverine
1/145-149	Woodlands Drive	Braeside	Dingley Drain	Riverine
2/145-149	Woodlands Drive	Braeside	Dingley Drain	Riverine
<b>Total</b>				
<b>23</b>				

Table C5.2 – Properties at risk of flooding along the Mordialloc Creek & Dingley Drain catchment in the City of Kingston

## ISOLATION

It is possible, given an extreme rainfall event greater than a 1% AEP (100yr ARI), that residents in the Waterways may become isolated if Governor Road and Springvale Road become flooded. Nepean Highway may also be cut by Mordialloc Creek during an event greater than 1% AEP (100yr ARI), possibly isolating residents in Aspendale to Bonbeach.

No major isolation risks exist for areas around Dingley Drain or Mordialloc Creek during a 1% AEP (100yr ARI) event. Some localised short-duration isolation may occur due to flash flooding.

---

## ESSENTIAL INFRASTRUCTURE

- A Sewerage Pumping Station is located along the Dingley Drain in Braeside Park (Melway 88D11). It is not expected however to be within floodwaters during a 1% AEP (100yr ARI) 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 Kingston is available via the website at: [https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23\\_Kingston\\_LAM.pdf](https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23_Kingston_LAM.pdf)

Apart from the roads outlined below, all other essential infrastructure and services areas around Mordialloc Creek, Waterways and the Dingley Drain 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 Mordialloc Creek, Waterways and the Dingley Drain. Check the VicRoads website for more details: <http://alerts.vicroads.vic.gov.au/>

### VicRoads Roads flooded (above 300mm) in a 1% AEP (100yr ARI) event

- Governor Road, Braeside near Springvale Road

Table C5.3 – VicRoads Possible Road Closures during a flooding event

### Kingston City Council Roads flooded (above 300mm) in a 1% AEP (100yr ARI) event

DINGLEY VILLAGE	WATERWAYS
• Chadree Court	• Bowen Parkway
• Meadow Court	• Island Point Avenue
• Elliott Crescent	• Lake King Circle
• Meadow Court	• Merri Drive
• McArdle Street	• Mitta Avenue
• Sun View Court	• Waterside Drive

Table C5.4 – Kingston City Council Possible Road Closures during a flooding event

## 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
Browns Reserve	Centre Swamp Drain	22,680m <sup>2</sup>	~100ML	N/A	Unavailable	2.3m AHD	Very Low	0	92J2

Table C5.5 – Melbourne Water Retarding Basins within the Mordialloc Creek and Dingley Drain catchment in the City of Kingston

### PUMPING STATIONS

Melbourne Water Pumping Station	On Drain / Waterway	Location	No. of Pumps	Capacity	Melway Reference
Browns Reserve	Centre Swamp Drain Edithvale Road to Mordialloc Creek	Browns Reserve near convergence with Mordialloc Creek in Aspendale	3	Pump 1: 5ML/day Pump 2: 125ML/day Pump 3: 250ML/day	92H2

Table C5.6 – Melbourne Water Pumping Stations along Mordialloc Creek

### LEVEES

Melbourne Water Levee	Reach	Side	Levee Height	Levee Length	Expected Level of Protection	ANCOLD Hazard Rating	Houses at risk behind Levee	Melway Reference
Mordialloc Creek	Springvale Road to Browns Reserve Pump Station	South	2m (4.1m AHD) upstream to 1m (2.9m AHD) downstream	2.7km	800mm freeboard in 100yr ARI Event	Significant	13	93G5-92H2

Table C5.7 – Melbourne Water Levees in the Mordialloc Creek Catchment in the City of Kingston

## COMMAND, CONTROL & COORDINATION

VICSES will assume overall control of the response to flood incidents. Other agencies will be requested to support operations as detailed in this Plan. Control and coordination of a flood incident shall be carried out at the lowest effective level and in accordance with the State Emergency Response Plan (EMMV Part 3). During significant events, VICSES will conduct incident management using multi-agency resources.

---

## FLOOD IMPACTS & REQUIRED ACTIONS

The table below is a breakdown of the number of properties flooded in a 1% AEP (100yr ARI) event. Refer to the following intelligence card/s for Mordialloc Creek & the Dingley Drain for more details.

Land Use Flooded in a 1% AEP Event	Total
Residential	20
Commercial	0
Industrial	3
Public Land	0
Rural	0
<b>Total</b>	<b>23</b>

Table C5.8 – Breakdown of likely land use flooded in the Mordialloc Creek & Dingley Drain Catchments in Kingston during a 1% AEP event

## FLOOD INTELLIGENCE CARD – DINGLEY DRAIN, MORDIALLOC CREEK & WATERWAYS (UNGAUGED)

Version 2 – June 2014



*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.*

CLOSEST RAIN GAUGE	<b>Braeside</b>
LOCATION	<b>Braeside Park, Governor Road Entrance</b>
MELWAY REF:	<b>93 F1</b>

GAUGE NUMBER	<b>586095</b>
GAUGE TYPE	<b>RAIN</b>
TELEMETRIC/MANUAL	<b>TELEMETRIC</b>

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability	Consequence / Impact	Operational Considerations
10mm in 10 mins; 18mm in 30 mins; 23mm in 1 hour; 30mm in 2 hours; 45mm in 6 hours; or 58mm in 12 hours  Note: rainfall depths are a very rough method of estimating flood events and have been used due to the ungaged nature of the catchment. This should be used as a guide only.	20% AEP (5 year ARI)	<b>Community Infrastructure Flooded</b> <ul style="list-style-type: none"> <li>Braeside Park, Braeside</li> </ul> <b>Water Over Road (above 300mm depth)</b> <ul style="list-style-type: none"> <li><b>Dingley Drain (Dingley Village &amp; Braeside)</b></li> <li>Chadree Court, Dingley Village</li> </ul> <b>Waterways</b> <ul style="list-style-type: none"> <li>Mitta Avenue, Waterways</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability	Consequence / Impact	Operational Considerations
<p>12mm in 10 mins; 20mm in 30 mins; 27mm in 1 hour; 35mm in 2 hours; 52mm in 6 hours; or 66mm in 12 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>10% AEP (10 year ARI)</p>	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>Braeside Park, Braeside</li> </ul> <p><b>Water Over Road (above 300mm depth)</b></p> <p><b>Dingley Drain (Dingley Village &amp; Braeside)</b></p> <ul style="list-style-type: none"> <li>Chadree Court, Dingley Village</li> <li>Governor Road, Braeside near Springvale Road</li> </ul> <p><b>Waterways</b></p> <ul style="list-style-type: none"> <li>Mitta Avenue, Waterways</li> </ul>	
<p>15mm in 10 mins; 24mm in 30 mins; 32mm in 1 hour; 41mm in 2 hours; 60mm in 6 hours; or 77mm in 12 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>5% AEP (20 year ARI)</p>	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>Braeside Park, Braeside</li> </ul> <p><b>Water Over Road (above 300mm depth)</b></p> <p><b>Dingley Drain (Dingley Village &amp; Braeside)</b></p> <ul style="list-style-type: none"> <li>Chadree Court, Dingley Village</li> <li>Elliott Crescent, Dingley Village</li> <li>McArdle Street, Dingley Village</li> <li>Sun View Court, Dingley Village</li> <li>Governor Road, Braeside near Springvale Road</li> </ul> <p><b>Waterways</b></p> <ul style="list-style-type: none"> <li>Mitta Avenue, Waterways</li> </ul>	
<p>18mm in 10 mins; 30mm in 30 mins; 39mm in 1 hour;</p>	<p>2% AEP (50 year ARI)</p>	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>Braeside Park, Braeside</li> </ul> <p><b>Water Over Road (above 300mm depth)</b></p> <p><b>Dingley Drain (Dingley Village &amp; Braeside)</b></p>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability	Consequence / Impact	Operational Considerations
<p>50mm in 2 hours; 73mm in 6 hours; or 92mm in 12 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>		<ul style="list-style-type: none"> <li>• Chadree Court, Dingley Village</li> <li>• Elliott Crescent, Dingley Village</li> <li>• Meadow Court, Dingley Village</li> <li>• McArdle Street, Dingley Village</li> <li>• Sun View Court, Dingley Village</li> <li>• Governor Road, Braeside near Springvale Road</li> </ul> <p><b>Waterways</b></p> <ul style="list-style-type: none"> <li>• Lake King Circle, Waterways</li> <li>• Mitta Avenue, Waterways</li> <li>• Bowen Parkway, Waterways</li> </ul>	
<p>21mm in 10 mins; 35mm in 30 mins; 44mm in 1 hour; 57mm in 2 hours; 82mm in 6 hours; or 104mm in 12 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 Flooded (above 300mm depth) (Properties likely at risk before this Level)</b> <b>23 Properties in Total</b></p> <p><b>Dingley Drain</b></p> <ul style="list-style-type: none"> <li>• 23/52-70, 24/52-70, 50/52-70, 51/52-70, 58/52-70, 108-110, 1/112-114, 2/112-114, 3/112-114 &amp; 4/112-114 Centre Dandenong Road, Dingley Village</li> <li>• 14 Chadree Court, Dingley Village</li> <li>• 11 &amp; 16-18 Colin Court, Dingley Village</li> <li>• 4, 5, 6, 7 &amp; 8 Elliott Crescent, Dingley Village</li> <li>• 12 &amp; 14 McArdle Street, Dingley Village</li> <li>• 25-27 Park Way, Braeside</li> <li>• 1/145-149 &amp; 2/145-149 Woodlands Drive, Braeside</li> </ul> <p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• Parts of the Greenwood Village Mews (Retirement Village) on Centre Dandenong Road, Dingley Village flooded</li> <li>• Braeside Park, Braeside</li> </ul> <p><b>Water Over Road (above 300mm depth)</b> <b>Dingley Drain (Dingley Village &amp; Braeside)</b></p> <ul style="list-style-type: none"> <li>• Chadree Court, Dingley Village</li> <li>• Elliott Crescent, Dingley Village</li> <li>• Colin Court, Dingley Village</li> <li>• Meadow Court, Dingley Village</li> <li>• McArdle Street, Dingley Village</li> <li>• Sun View Court, Dingley Village</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Governor Road, Braeside near Springvale Road</li> <li><b>Waterways</b></li> <li>• Lake King Circle, Waterways</li> <li>• Merri Drive, Waterways</li> <li>• Waterside Drive, Waterways</li> <li>• Mitta Avenue, Waterways</li> <li>• Island Point Avenue, Waterways</li> <li>• Bowen Parkway, Waterways</li> </ul>	

Table C5.9 – Breakdown of possible consequences at various rainfall intensities around Mordialloc Creek and Dingley Drain with operational considerations

---

## **APPENDIX C6 – CENTRE SWAMP DRAIN FLOOD EMERGENCY PLAN**

### **OVERVIEW OF FLOODING CONSEQUENCES**

The Centre Swamp Drain has a catchment area of 2464 hectares and is bound by the Frankston Railway to the west, by the Mordialloc Creek and Patterson River Levees to the north and south respectively (Centre Swamp Drain Report, Melbourne Water 2012).

Key Infrastructure at risk in the Centre Swamp Drain Catchment is fore mostly Edithvale Road, which begins being overtopped during a 20% AEP (5yr ARI) event and secondarily Thames Promenade, another important thoroughfare in Chelsea expected to overtop during a 1% AEP (100yr ARI) event. Areas of residential properties are also at risk including those on Sherwood Avenue in Chelsea and Mascot Avenue in Bonbeach.

The region was formally a natural wetland and as such has areas of height below mean sea level. Because of this, drainage pumping stations are required to remove stormwater for discharge into Mordialloc Creek and Patterson River. These pumping stations include Browns Road to the north, Edithvale Road in the centre and Centre Swamp Drain to the south. Were any of these pumping stations to fail, flooding impacts would be exacerbated. Details of these scenarios can be found in the Centre Swamp Drain flood report (Melbourne Water, 2012). A number of City of Kingston owned and operated Pumping Stations exist in the region. Their locations are contained within this appendix.

Levees along Mordialloc Creek and Patterson River protect residents adjacent to the waterways to 800mm and 1m freeboard during a 1% AEP event respectively.

The area west of the Centre Swamp Drain is at risk of isolation during an event greater than 1% AEP with limited access routes, those being Nepean Highway to the north and south and Edithvale Road and Thames Promenade to the east.

Areas directly on the coast may experience minor impacts from Port Phillip Bay storm surges during a 1% AEP event.

---

## WARNING TIMES

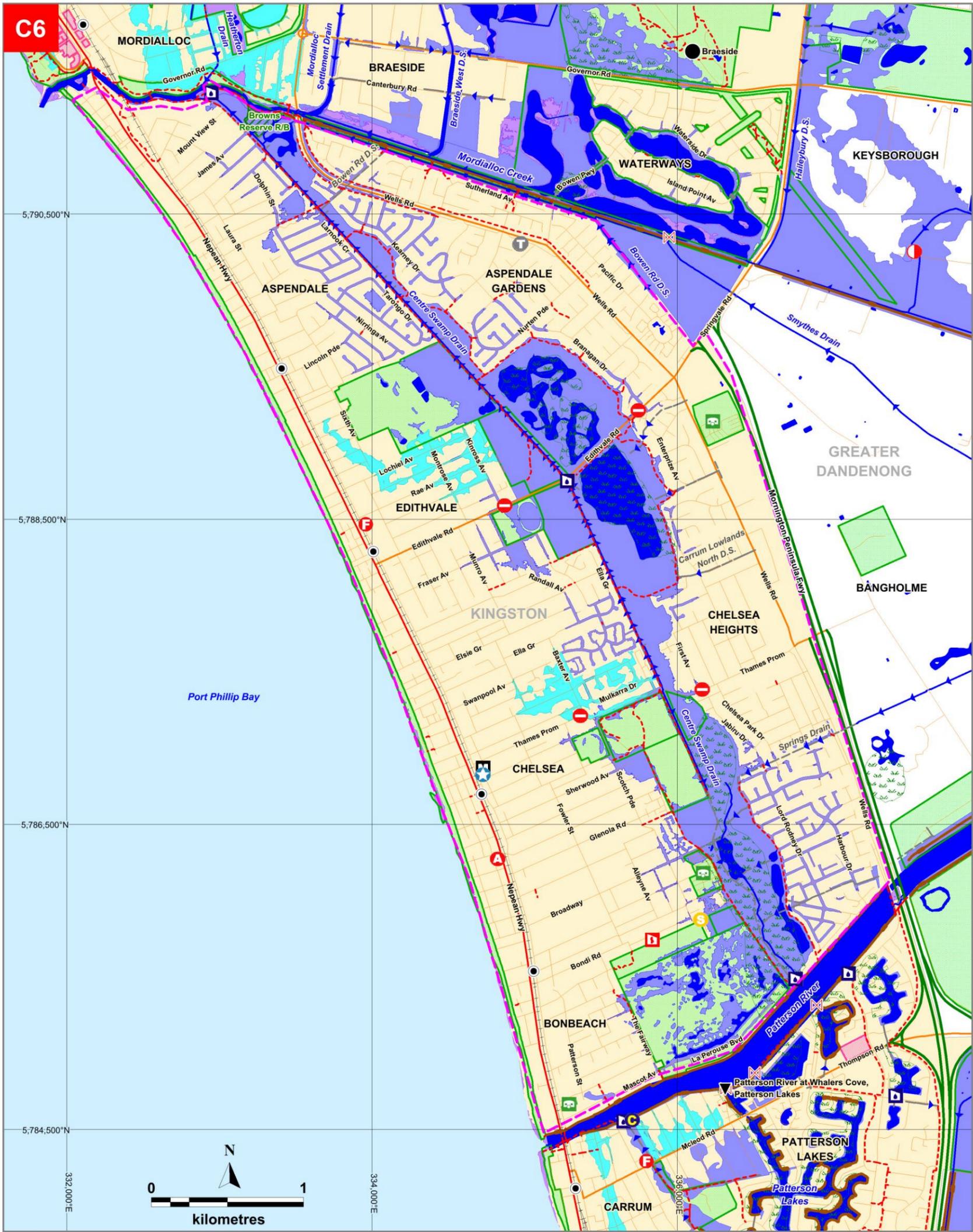
Whilst there are hydrographic/telemetry stations (river gauges) within the municipality, Melbourne Water does not provide any flood warning service at this point, due to the generally short warning times available.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Braeside	586095	Southern end of Braeside Park, 300m from Governor Road, Braeside		✓		93 F1
Patterson River at Patterson Lakes	228383A	Dandenong Creek Trail at the eastern end of the Patterson River Boat Launch Car Park , Patterson Lakes at mouth of the Tidal Canal			✓	97 F6

Table C6.1 – Hydrographic Monitoring Stations within the Centre Swamp Drain catchment

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/rainfallandriverveldata/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/> or VicSES website <http://www.ses.vic.gov.au/> for any thunderstorm, flood or severe weather warnings present for their area.

AREAS AT FLOOD RISK



Flood Modelling completed by Melbourne Water, October 2012. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding  
**C6 - Areas of flood risk around the Centre Swamp Drain & Edithvale Wetlands**

- |                                 |                                  |                    |
|---------------------------------|----------------------------------|--------------------|
| Building                        | 1% AEP Storm Surge Extent        | Ambulance Station  |
| Area of Interest                | Bicycle / Walking Trail          | Caravan Park       |
| 1% AEP Flash Flood Extent       | Melbourne Water Stormwater Drain | Municipal Offices  |
| 1% AEP Riverine Flood Extent    | River / Creek / Channel          | Telephone Exchange |
| Waterbody                       | Levee / Embankment               | Stream level Gauge |
| Shopping Precinct               | Sewer Emergency Relief Structure | Police Station     |
| Melbourne Water Retarding Basin | Drainage Pumping Station         | Coast Guard        |
| Natural Wetland                 | Sewer Pumping Station            | Rain Gauge         |
| Area Boundary for this Appendix | Road Closure Likely in Flood     | CFA Fire Station   |
|                                 |                                  | VicSES             |
|                                 |                                  | Tidal Flood Gate   |



**Melbourne Water**  
 This map 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.

Figure C6 – Areas of flood risk around the Centre Swamp Drain in the City of Kingston

## PROPERTIES AT FLOOD RISK

Properties listed in the table below are at risk from flooding during a 1% AEP event. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Centre Swamp Drain (Melbourne Water, October 2012) and Kingston City Council flood mapping and risk assessment programs.

*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 during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
1	Aruma Court	Chelsea	Local Drainage	Flash
3	Aruma Court	Chelsea	Local Drainage	Flash
4	Aruma Court	Chelsea	Local Drainage	Flash
5	Aruma Court	Chelsea	Local Drainage	Flash
6	Aruma Court	Chelsea	Local Drainage	Flash
31	Baxter Avenue	Chelsea	Local Drainage	Flash
33	Baxter Avenue	Chelsea	Local Drainage	Flash
35	Baxter Avenue	Chelsea	Local Drainage	Flash
37	Baxter Avenue	Chelsea	Local Drainage	Flash
39	Baxter Avenue	Chelsea	Local Drainage	Flash
41	Baxter Avenue	Chelsea	Local Drainage	Flash
46	Baxter Avenue	Chelsea	Local Drainage	Flash
48	Baxter Avenue	Chelsea	Local Drainage	Flash
100	Broadway	Bonbeach	Centre Swamp Drain	Riverine
37-53	Dolphin Street	Aspendale	Centre Swamp Drain	Riverine
88-120	Edithvale Road	Edithvale	Centre Swamp Drain	Riverine
109-115	Edithvale Road	Edithvale	Centre Swamp Drain	Riverine
120A	Edithvale Road	Edithvale	Centre Swamp Drain	Riverine
1/38	Embankment Grove	Chelsea	Local Drainage	Flash
1/40	Embankment Grove	Chelsea	Local Drainage	Flash
1/42	Embankment Grove	Chelsea	Local Drainage	Flash
2/42	Embankment Grove	Chelsea	Local Drainage	Flash
3/42	Embankment Grove	Chelsea	Local Drainage	Flash
1/44	Embankment Grove	Chelsea	Local Drainage	Flash
2/44	Embankment Grove	Chelsea	Local Drainage	Flash
45	Embankment Grove	Chelsea	Local Drainage	Flash
1/46	Embankment Grove	Chelsea	Local Drainage	Flash
2/46	Embankment Grove	Chelsea	Local Drainage	Flash
47	Embankment Grove	Chelsea	Local Drainage	Flash
1/48	Embankment Grove	Chelsea	Local Drainage	Flash
2/48	Embankment Grove	Chelsea	Local Drainage	Flash
3/48	Embankment Grove	Chelsea	Local Drainage	Flash
4/48	Embankment Grove	Chelsea	Local Drainage	Flash
5/48	Embankment Grove	Chelsea	Local Drainage	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
1/49	Embankment Grove	Chelsea	Local Drainage	Flash
1/50	Embankment Grove	Chelsea	Local Drainage	Flash
2/50	Embankment Grove	Chelsea	Local Drainage	Flash
3/50	Embankment Grove	Chelsea	Local Drainage	Flash
51	Embankment Grove	Chelsea	Local Drainage	Flash
52	Embankment Grove	Chelsea	Local Drainage	Flash
53	Embankment Grove	Chelsea	Local Drainage	Flash
53A	Embankment Grove	Chelsea	Local Drainage	Flash
1/54	Embankment Grove	Chelsea	Local Drainage	Flash
2/54	Embankment Grove	Chelsea	Local Drainage	Flash
55	Embankment Grove	Chelsea	Local Drainage	Flash
1/56	Embankment Grove	Chelsea	Local Drainage	Flash
2/56	Embankment Grove	Chelsea	Local Drainage	Flash
57	Embankment Grove	Chelsea	Local Drainage	Flash
1/58	Embankment Grove	Chelsea	Local Drainage	Flash
2/58	Embankment Grove	Chelsea	Local Drainage	Flash
1/59	Embankment Grove	Chelsea	Local Drainage	Flash
60	Embankment Grove	Chelsea	Local Drainage	Flash
61	Embankment Grove	Chelsea	Local Drainage	Flash
1/62	Embankment Grove	Chelsea	Local Drainage	Flash
1/63-65	Embankment Grove	Chelsea	Local Drainage	Flash
2/63-65	Embankment Grove	Chelsea	Local Drainage	Flash
4/63-65	Embankment Grove	Chelsea	Local Drainage	Flash
5/63-65	Embankment Grove	Chelsea	Local Drainage	Flash
64	Embankment Grove	Chelsea	Local Drainage	Flash
1/66	Embankment Grove	Chelsea	Local Drainage	Flash
2/66	Embankment Grove	Chelsea	Local Drainage	Flash
1/67	Embankment Grove	Chelsea	Local Drainage	Flash
68	Embankment Grove	Chelsea	Local Drainage	Flash
69	Embankment Grove	Chelsea	Local Drainage	Flash
69A	Embankment Grove	Chelsea	Local Drainage	Flash
70	Embankment Grove	Chelsea	Local Drainage	Flash
1/71	Embankment Grove	Chelsea	Local Drainage	Flash
3/71	Embankment Grove	Chelsea	Local Drainage	Flash
73	Embankment Grove	Chelsea	Local Drainage	Flash
75	Embankment Grove	Chelsea	Local Drainage	Flash
112	Fraser Avenue	Edithvale	Centre Swamp Drain	Riverine
112	Fraser Avenue	Edithvale	Centre Swamp Drain	Riverine
26	Inlet Street	Aspendale	Local Drainage	Flash
28	Inlet Street	Aspendale	Local Drainage	Flash
87	Keith Avenue	Edithvale	Local Drainage	Flash
89	Keith Avenue	Edithvale	Local Drainage	Flash
91	Keith Avenue	Edithvale	Local Drainage	Flash
85	Kinross Avenue	Edithvale	Local Drainage	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
87	Kinross Avenue	Edithvale	Local Drainage	Flash
89	Kinross Avenue	Edithvale	Local Drainage	Flash
90	Kinross Avenue	Edithvale	Local Drainage	Flash
91	Kinross Avenue	Edithvale	Local Drainage	Flash
92	Kinross Avenue	Edithvale	Local Drainage	Flash
93	Kinross Avenue	Edithvale	Local Drainage	Flash
95	Kinross Avenue	Edithvale	Local Drainage	Flash
29	Larnook Crescent	Aspendale	Centre Swamp Drain	Riverine
23	Laura Street	Aspendale	Local Drainage	Flash
26	Mary Avenue	Edithvale	Local Drainage	Flash
27	Mary Avenue	Edithvale	Local Drainage	Flash
28	Mary Avenue	Edithvale	Local Drainage	Flash
29	Mary Avenue	Edithvale	Local Drainage	Flash
30	Mary Avenue	Edithvale	Local Drainage	Flash
2/23	Mascot Avenue	Bonbeach	Local Drainage	Flash
25	Mascot Avenue	Bonbeach	Local Drainage	Flash
27	Mascot Avenue	Bonbeach	Local Drainage	Flash
1/29	Mascot Avenue	Bonbeach	Local Drainage	Flash
31	Mascot Avenue	Bonbeach	Local Drainage	Flash
33	Mascot Avenue	Bonbeach	Local Drainage	Flash
10	Mernda Avenue	Bonbeach	Local Drainage	Flash
12	Mernda Avenue	Bonbeach	Local Drainage	Flash
12	Mulkarra Drive	Chelsea	Local Drainage	Flash
19	Mulkarra Drive	Chelsea	Local Drainage	Flash
21	Mulkarra Drive	Chelsea	Local Drainage	Flash
99	Rae Avenue	Edithvale	Local Drainage	Flash
100	Rae Avenue	Edithvale	Local Drainage	Flash
101A	Rae Avenue	Edithvale	Local Drainage	Flash
101B	Rae Avenue	Edithvale	Local Drainage	Flash
102-104	Rae Avenue	Edithvale	Local Drainage	Flash
103	Rae Avenue	Edithvale	Local Drainage	Flash
1	Scotch Parade	Chelsea	Centre Swamp Drain	Riverine
41A	Scotch Parade	Bonbeach	Centre Swamp Drain	Riverine
2/45	Scotch Parade	Bonbeach	Centre Swamp Drain	Riverine
77	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
79	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
1/81	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
2/81	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
83	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
84	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
85	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
86	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
88B	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine
88A	Sherwood Avenue	Chelsea	Centre Swamp Drain	Riverine

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
5	Sturdee Street	Chelsea	Centre Swamp Drain	Riverine
2/7	Sturdee Street	Chelsea	Centre Swamp Drain	Riverine
9	Sturdee Street	Chelsea	Centre Swamp Drain	Riverine
10	Sturdee Street	Chelsea	Centre Swamp Drain	Riverine
11	Sturdee Street	Chelsea	Centre Swamp Drain	Riverine
1/68	Swan Walk	Chelsea	Local Drainage	Flash
2/68	Swan Walk	Chelsea	Local Drainage	Flash
3/68	Swan Walk	Chelsea	Local Drainage	Flash
1/69	Swan Walk	Chelsea	Local Drainage	Flash
3/72	Swan Walk	Chelsea	Local Drainage	Flash
4/72	Swan Walk	Chelsea	Local Drainage	Flash
2/59	Thames Promenade	Chelsea	Local Drainage	Flash
1/61	Thames Promenade	Chelsea	Local Drainage	Flash
2/61	Thames Promenade	Chelsea	Local Drainage	Flash
3/61	Thames Promenade	Chelsea	Local Drainage	Flash
4/61	Thames Promenade	Chelsea	Local Drainage	Flash
63	Thames Promenade	Chelsea	Local Drainage	Flash
1/77	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
79	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
81	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
83	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
84-130	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
103	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
105	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
107	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
109	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
111	Thames Promenade	Chelsea	Centre Swamp Drain	Riverine
140-172	Thames Promenade	Chelsea Heights	Centre Swamp Drain	Riverine
1	The Fairway	Bonbeach	Centre Swamp Drain	Riverine
2	Tudor Court	Edithvale	Local Drainage	Flash
6	Tudor Court	Edithvale	Local Drainage	Flash
8	Tudor Court	Edithvale	Local Drainage	Flash
9	Tudor Court	Edithvale	Local Drainage	Flash
10	Tudor Court	Edithvale	Local Drainage	Flash
11	Tudor Court	Edithvale	Local Drainage	Flash
14	Tudor Court	Edithvale	Local Drainage	Flash
16	Tudor Court	Edithvale	Local Drainage	Flash
17	Tudor Court	Edithvale	Local Drainage	Flash
18	Tudor Court	Edithvale	Local Drainage	Flash
20	Tudor Court	Edithvale	Local Drainage	Flash
21	Tudor Court	Edithvale	Local Drainage	Flash
22	Tudor Court	Edithvale	Local Drainage	Flash
23	Tudor Court	Edithvale	Local Drainage	Flash
33	Tudor Court	Edithvale	Local Drainage	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
35	Tudor Court	Edithvale	Local Drainage	Flash
37	Tudor Court	Edithvale	Local Drainage	Flash
39	Tudor Court	Edithvale	Local Drainage	Flash
41	Tudor Court	Edithvale	Local Drainage	Flash
43	Tudor Court	Edithvale	Local Drainage	Flash
45	Tudor Court	Edithvale	Local Drainage	Flash
47	Tudor Court	Edithvale	Local Drainage	Flash
49	Tudor Court	Edithvale	Local Drainage	Flash
51	Tudor Court	Edithvale	Local Drainage	Flash
53	Tudor Court	Edithvale	Local Drainage	Flash
55	Tudor Court	Edithvale	Local Drainage	Flash
<b>Total</b>				
<b>177</b>				

Table C6.2 – Properties at risk of flooding along the Centre Swamp Drain catchment in the City of Kingston

## ISOLATION

Residents in the southern half of the Municipality of Kingston bounded by Mordialloc Creek, Centre Swamp Drain and Patterson Creek are at risk of isolation during a flooding event greater than 1% AEP (100yr ARI). Edithvale Road, an access route to the east will likely be cut during a 10% AEP event, while Thames Promenade the other eastern access route cut during a 1% AEP event. Nepean Highway is the only northern and southern access route if access across the Centre Swamp Drain to the east is cut. While it is expected that the Highway remain open across Mordialloc Creek to the north and Patterson River to the south during a 1% AEP event, a greater than 1% AEP event may restrict access via these points. Nepean Highway may also experience flash flooding with standing water at various points between Mordialloc Creek and Patterson River. Some localised short-duration isolation may occur due to flash flooding.

## ESSENTIAL INFRASTRUCTURE

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 Kingston is available via the website at: [https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23\\_Kingston\\_LAM.pdf](https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23_Kingston_LAM.pdf)

Apart from the roads outlined below, all other essential infrastructure and services areas along the Centre Swamp Drain in Aspendale, Aspendale Gardens, Edithvale, Chelsea, Chelsea Heights, Bonbeach and Part of Patterson Lakes 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 along the Centre Swamp Drain in Aspendale, Aspendale Gardens, Edithvale, Chelsea, Chelsea Heights, Bonbeach and Part of Patterson Lakes. Check the VicRoads website for more details: <http://alerts.vicroads.vic.gov.au/>

### VicRoads Roads flooded in a 1% AEP event

- Edithvale Road at Edithvale Wetlands crossing, Aspendale Gardens

Table C6.3 – VicRoads Possible Road Closures during a flooding event

### Kingston City Council Roads flooded in a 1% AEP event

ASPENDALE	BONBEACH	CHELSEA	CHELSEA HEIGHTS
• Ebb Street	• Broadway	• Baxter Avenue	• Dunscombe Place
• Foam Street	• Crampton Square	• Dobell Drive	<b>EDITHVALE</b>
• Iluka Avenue	• La Perouse Boulevard	• Embankment Grove	• Fraser Avenue
• Kiewa Court	• Mascot Avenue	• Mulkarra Drive	• Keith Avenue
• Larnook Crescent	• Mernda Avenue	• Scotch Parade	• Kinross Avenue
• Longbeach Close	• Royal Road	• Sherwood Avenue	• Randal Avenue
• Mill Street		• Thames Promenade	• Tudor Court
• Nirringa Avenue			
• Wanda Court			

Table C6.4 – Kingston City Council Possible Road Closures during a flooding event

## 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
Browns Reserve	Centre Swamp Drain	22,680m <sup>2</sup>	~100ML	N/A	Unavailable	2.3m AHD	Very Low	0	92J2

Table C6.5 – Melbourne Water Retarding Basins within the Centre Swamp Drain catchment in the City of Kingston

### PUMPING STATIONS

Melbourne Water Pumping Station	On Drain / Waterway	Location	No. of Pumps	Capacity	Trigger Levels (Start and Stop)	Melway Reference
Browns Reserve	Centre Swamp Drain Edithvale Road to Mordialloc Creek	Browns Reserve near convergence with Mordialloc Creek in Aspendale	3	Pump 1(A): 5ML/day (Auto) Pump 2(B): 125ML/day (Auto) Pump 3(C): 250ML/day (Manual)	Pump 1: -2.13m AHD to -1.53m AHD Pump 2: -1.53m AHD to -0.63m AHD Pump 3: -0.48m AHD to -2.77m AHD	92H2
Edithvale Wetlands	Centre Swamp Drain, Edithvale Wetlands (Environmental)	Edithvale Road, Edithvale	1	Unavailable	Unavailable	93D8
Centre Swamp Drain	Centre Swamp Drain, Wetlands over Levee to Patterson River	Wannarkladdin Wetlands, Bonbeach at convergence with Patterson River	5	Minor Pumps 1-2: 11ML/day Main Pumps 1-3: 90ML/day Total: 268ML/day	Unknown. Failure may result in major flooding impacting ~1000 properties	97G4

Table C6.6 – Melbourne Water Pumping Stations along the Centre Swamp Drain

Kingston City Council Pumping Station	Suburb	No. of Pumps	Capacity
Fowler Stand Glenola Road	Chelsea	1	200L/s
Wells Road	Aspendale	1	200L/s
The Fairway	Bonbeach	2	200L/s

Table C6.7 – Kingston City Pumping Stations along the Centre Swamp Drain

## LEVEES

Melbourne Water Levee	Reach	Side	Levee Height	Levee Length	Expected Level of Protection	ANCOLD Hazard Rating	Houses at risk behind Levee	Melway Reference
Mordialloc Creek	Springvale Road to Browns Reserve Pump Station	South	2m (4.1m AHD) upstream to 1m (2.9m AHD) downstream	2.7km	800mm freeboard in 100yr ARI Event	Significant	13	93G5-92H2
Patterson River	Mornington Peninsula Freeway to Seawall	North	4.0m (5.4m AHD) upstream to (2.73m AHD) downstream	2.8km	1m freeboard in 100yr ARI Event	High A	407	97J3-97C7

Table C6.8 – Melbourne Water Levees in the Centre Swamp Drain Catchment in the City of Kingston

## SEWERAGE INFRASTRUCTURE

### SEWER PUMPING STATIONS

Melbourne Water Pumping Station	On Drain / Waterway	Location	Melway Reference
Bondi Road Pumping Station	Local Drainage	South side of Bondi Road, Bonbeach	97E3

Table C6.9 – Sewer Pumping Stations within the Centre Swamp Drain Catchment in the City of Kingston

## COMMAND, CONTROL & COORDINATION

VICSES will assume overall control of the response to flood incidents. Other agencies will be requested to support operations as detailed in this Plan. Control and coordination of a flood incident shall be carried out at the lowest effective level and in accordance with the State Emergency Response Plan (EMMV Part 3). During significant events, VICSES will conduct incident management using multi-agency resources.

---

## FLOOD IMPACTS & REQUIRED ACTIONS

The table below is a breakdown of the number of properties flooded in a 1% AEP (100yr ARI) event. Refer to the following intelligence card for Centre Swamp Drain for more details.

Land Use Flooded in a 1% AEP Event	Total
Residential	167
Commercial	4
Industrial	0
Public Land	6
Rural	0
<b>Total</b>	<b>177</b>

Table C6.10 – Breakdown of likely land use flooded in the Centre Swamp Drain Catchment in Kingston during a 1% AEP event

## FLOOD INTELLIGENCE CARD – CENTRE SWAMP DRAIN (UNGAUGED)

Version 3 – September 2017



*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.*

CLOSEST RAIN GAUGE	<b>Braeside</b>
LOCATION	<b>Braeside Park, Governor Road Entrance</b>
MELWAY REF:	<b>93 F1</b>

GAUGE NUMBER	<b>586095</b>
GAUGE TYPE	<b>Rain</b>
TELEMETRIC/MANUAL	<b>Telemetric</b>

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
10mm in 10 mins; 18mm in 30 mins; 23mm in 1 hour; 30mm in 2 hours; 45mm in 6 hours; or 58mm in 12 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) (0.65m AHD)	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• Bike/Pedestrian Path along Centre Swamp Drain flooded at various points from Connewarra Avenue, Aspendale to Ella Grove, Edithvale</li> <li>• Bike/Pedestrian Path along the Edithvale Wetlands flooded at various points from Connewarra Avenue, Aspendale to Endeavour Drive, Chelsea Heights</li> <li>• Edithvale Road bike/pedestrian path flooded at Edithvale Wetlands</li> <li>• Chelsea Public Golf Course on Edithvale Road, Edithvale flooded</li> <li>• Chelsea Pony Club on Broadway, Bonbeach flooded</li> <li>• Bike/Pedestrian Path along Centre Swamp Drain flooded at various points from Bicentennial Park, Chelsea to Crampton Square, Bonbeach</li> </ul> <p><b>Essential Infrastructure</b></p> <ul style="list-style-type: none"> <li>• Drainage Pump Station at Browns Reserve in operation (Manual Pump 3(C))</li> <li>• Environmental Pump Station located the Edithvale Wetlands may be in operation</li> <li>• Drainage Pump Station (Centre Swamp Drain) at Wannarkladdin Wetlands likely to be in operation (trigger level unknown)</li> </ul> <p><b>Water Over Road</b></p> <ul style="list-style-type: none"> <li>• Edithvale Road at Edithvale Wetlands crossing, Aspendale Gardens flooded at</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
<p>12mm in 10 mins; 20mm in 30 mins; 27mm in 1 hour; 35mm in 2 hours; 52mm in 6 hours; or 66mm in 12 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>10% AEP (10 year ARI) (0.85m AHD)</p>	<p>lowest point</p> <p><b>Water Over Road</b></p> <ul style="list-style-type: none"> <li>Increased flooding on Edithvale Road at Edithvale Wetlands crossing, Aspendale Gardens</li> </ul>	
<p>15mm in 10 mins; 24mm in 30 mins; 32mm in 1 hour; 41mm in 2 hours; 60mm in 6 hours; or 77mm in 12 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>5% AEP (20 year ARI) (1.10m AHD)</p>	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>Rossdale Golf Club on Sixth Avenue, Aspendale with flooding in parts</li> <li>Patterson River Country Club, The Fairway, Bonbeach with flooding in parts</li> </ul> <p><b>Water Over Road</b></p> <ul style="list-style-type: none"> <li>Edithvale Road at Edithvale Wetlands crossing, Aspendale Gardens expected to be flooded with significant depths</li> <li>Sherwood Avenue, Chelsea</li> </ul>	
<p>18mm in 10 mins; 30mm in 30 mins;</p>	<p>2% AEP (50 year ARI) (1.35m AHD)</p>	<p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>Chelsea Heights Tennis Club on Thames Promenade, Chelsea Heights</li> <li>Beazley Reserve on Thames Promenade, Chelsea Heights</li> </ul>	

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
<p>39mm in 1 hour; 50mm in 2 hours; 73mm in 6 hours; or 92mm in 12 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>		<ul style="list-style-type: none"> <li>Chelsea Sportswomen’s Centre car-park on Sturdee Street, Chelsea</li> </ul> <p><b>Water Over Road</b></p> <ul style="list-style-type: none"> <li>Kinross Avenue, Edithvale</li> <li>Fraser Avenue, Edithvale east of Munro Avenue</li> <li>Dunscombe Place, Chelsea Heights</li> <li>Baxter Avenue, Chelsea</li> <li>Scotch Parade, Chelsea at Chelsea Bicentennial Park</li> <li>La Perouse Boulevard, Bonbeach</li> </ul>	
<p>21mm in 10 mins; 35mm in 30 mins; 44mm in 1 hour; 57mm in 2 hours; 82mm in 6 hours; or 104mm in 12 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) (1.55m AHD)</p>	<p><b>Properties at Flood Risk (Properties likely at risk before this Level)</b></p> <p><b>177 Properties in Total</b></p> <p><b>Centre Swamp Drain</b></p> <ul style="list-style-type: none"> <li>100 Broadway , Bonbeach</li> <li>37-53 Dolphin Street, Aspendale</li> <li>88-120, 109-115 &amp; 120A Edithvale Road, Edithvale</li> <li>112 &amp; 112 Fraser Avenue, Edithvale</li> <li>29 Larnook Crescent, Aspendale</li> <li>1, 41A &amp; 2/45 Scotch Parade, Chelsea</li> <li>77, 79, 1/81, 2/81, 83, 84, 85, 86, 88B &amp; 88A Sherwood Avenue, Chelsea</li> <li>5, 2/7, 9, 10 &amp; 11 Sturdee Street, Chelsea</li> <li>1/77, 79, 81, 83, 84-130, 103, 105, 107, 109, 111 &amp; 140-172 Thames Promenade, Chelsea</li> <li>1 The Fairway , Bonbeach</li> </ul> <p><b>Local Drainage</b></p> <ul style="list-style-type: none"> <li>1, 3, 4, 5 &amp; 6 Aruma Court, Chelsea</li> <li>31, 33, 35, 37, 39, 41, 46 &amp; 48 Baxter Avenue, Chelsea</li> <li>1/38, 1/40, 1/42, 2/42, 3/42, 1/44, 2/44, 45, 1/46, 2/46, 47, Units 1-5/48, 1/49, Units 1-3/50, 51, 52, 53, 53A, 1/54, 2/54, 55, 1/56, 2/56, 57, 1/58, 2/58, 1/59, 60, 61, 1/62, Units 1-2/63-65, Units 4-5/63-65, 64, 1/66, 2/66, 1/67, 68, 69, 69A, 70, 1/71, 3/71, 73 &amp; 75 Embankment Grove, Chelsea</li> <li>26 &amp; 28 Inlet Street, Aspendale</li> <li>87, 89 &amp; 91 Keith Avenue, Edithvale</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>• 85, 87, 89, 90, 91, 92, 93 &amp; 95 Kinross Avenue, Edithvale</li> <li>• 23 Laura Street, Aspendale</li> <li>• 26, 27, 28, 29 &amp; 30 Mary Avenue, Edithvale</li> <li>• 2/23, 25, 27, 1/29, 31 &amp; 33 Mascot Avenue, Bonbeach</li> <li>• 10 &amp; 12 Mernda Avenue, Bonbeach</li> <li>• 12, 19 &amp; 21 Mulkarra Drive, Chelsea</li> <li>• 99, 100, 101A, 101B, 102-104 &amp; 103 Rae Avenue, Edithvale</li> <li>• 1/68, 2/68, 3/68, 1/69, 3/72 &amp; 4/72 Swan Walk, Chelsea</li> <li>• 2/59, 1/61, 2/61, 3/61, 4/61 &amp; 63 Thames Promenade, Chelsea</li> <li>• 2, 6, 8, 9, 10, 11, 14, 16, 17, 18, 20, 21, 22, 23, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53 &amp; 55 Tudor Court, Edithvale</li> </ul> <p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• St Louis de Montfort's School on Dolphin Avenue, Aspendale</li> <li>• Aspendale Primary School's sports grounds on Laura Street, Aspendale</li> <li>• Iluka Reserve on Iluka Avenue, Aspendale</li> <li>• Kingston Parks &amp; Gardens Depot on Scotch Parade, Bonbeach</li> <li>• Edithvale Bowling Club on Edithvale Road, Edithvale</li> <li>• Edithvale Recreation Reserve on Edithvale Road, Edithvale</li> <li>• Discovery Holiday Park Chelsea on Central Drive, Bonbeach flooded in parts near Broadway</li> </ul> <p><b>Water Over Road</b></p> <ul style="list-style-type: none"> <li>• Mill Street, Aspendale at Aspendale</li> <li>• Ebb Street, Aspendale</li> <li>• Foam Street, Aspendale</li> <li>• Longbeach Close, Aspendale</li> <li>• Larnook Crescent, Aspendale</li> <li>• Iluka Avenue, Aspendale</li> <li>• Wanda Court, Aspendale</li> <li>• Kiewa Court, Aspendale</li> <li>• Niringa Avenue, Aspendale</li> <li>• Tudor Court, Edithvale</li> <li>• Keith Avenue, Edithvale east of Montrose Avenue</li> <li>• Randal Avenue, Edithvale</li> <li>• Dobell Drive, Chelsea</li> <li>• Embankment Grove, Chelsea at Baxter Avenue</li> </ul>	

Design Rainfall Depths (mm) – <i>Indication of Possible Flooding</i>	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
		<ul style="list-style-type: none"> <li>• Mulkarra Drive, Chelsea</li> <li>• Thames Promenade, Chelsea from Scotch Parade to First Avenue, Chelsea Heights</li> <li>• Broadway, Bonbeach east of Scotch Parade</li> <li>• Royal Road, Bonbeach east of Scotch Parade</li> <li>• Mernda Avenue, Bonbeach</li> <li>• Mascot Avenue, Bonbeach</li> <li>• Crampton Square, Bonbeach</li> </ul>	

## APPENDIX C7 – PATTERSON LAKES FLOOD EMERGENCY PLAN

### OVERVIEW OF FLOODING CONSEQUENCES

Patterson Lakes and Carrum are bounded by the Patterson River Levee to the north, Mornington Peninsula Freeway to the east and Eel Race Drain levee to the south. The area comprises part of the former Edithvale & Seaford wetlands and because of this some areas were below mean sea level. These areas have been converted into a series of man-made lakes which help control flooding to the residential and commercial parts of the region. Most residential properties in Patterson Lakes have been built above the 1% AEP (100yr ARI) flood level, however older properties in Carrum are at risk at this level from flooding along the Whatley's Drain.

Key Infrastructure at risk in Patterson Lakes and Carrum Thompson Road and McLeod Road which provide an important access route to residents in the area, while residents along Canberra Street & Valetta Street are also of concern.

Other Key Infrastructure in the region comprises of three tidal gates along Patterson River which help block tidal flows coming up Patterson River from entering the residential areas of Patterson Lakes. Levees exist along the length of Patterson River and Eel Race Drain, protecting residents with a 1m freeboard from Patterson River during a 1% AEP event and events higher than 1% AEP events from Eel Race Drain. A number of Melbourne Water and Council owned Pumping Stations are located along Patterson River and Eel Race Drain which help transport stormwater over the levees along these waterways. Were any of these Tidal Gates, Levees or Pumping Stations fail, major impacts could be experienced with approx. 4,000 properties located in Patterson Lakes and Carrum and up to 3,000 properties approximately potentially impacted.

### WARNING TIMES

Warnings are available for flooding expected along Patterson River at Patterson Lakes. For other hydrographic/telemetry (river gauges) within the Municipality, Melbourne Water does not provide any flood warning service at this point, due to the generally short warning times available.

Hydrographic Monitoring Station	Station No.	Location	Stream Level & Flow Gauge	Rain Gauge	Tide Gauge	Melway Reference
Dandenong Creek at Keysborough	228356B	East side of the channel, along the Bicycle / Walking Trail under the Eastlink Bridge. 400m south of Arkwright Drive, Dandenong South	✓	✓		94 H5
Eel Race Drain at Seaford North	228371A	Pedestrian Crossing along Riviera Street, Seaford	✓	✓		97 D11
Patterson River at Patterson Lakes	228383A	Dandenong Creek Trail at the eastern end of the Patterson River Boat Launch Car Park , Patterson Lakes at mouth of the Tidal Canal			✓	97 F6

Table C7.1 – Hydrographic Monitoring Stations the Patterson River and Eel Race Drain 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/rainfallandriverleveledata/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/> or VicSES website <http://www.ses.vic.gov.au/> for any thunderstorm, flood or severe weather warnings present for their area.

AREAS OF FLOOD RISK

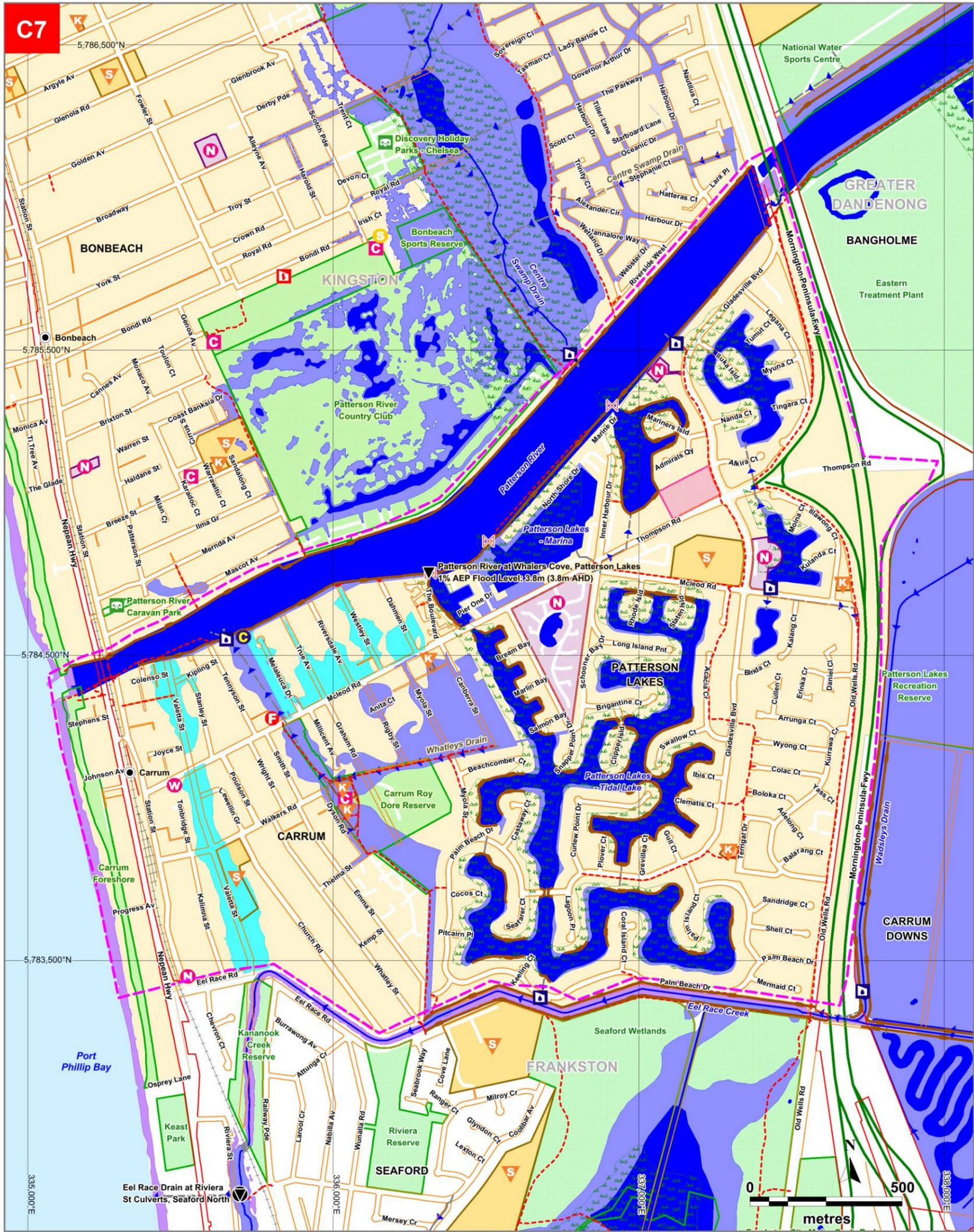


Figure C7 – Areas affected around Patterson Lakes in the City of Kingston

## PROPERTIES AT FLOOD RISK

Properties listed in the table below are at risk from flooding during a 1% AEP event. As more intelligence becomes available, this list may change. This table has been populated based on modelling work as part of the Patterson Lakes (Melbourne Water, July 2001) and the Kingston City Council flood mapping and risk assessment programs.

*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 during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2	Canberra Street	Carrum	Whatley's Drain	Flash
3	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
1/4	Canberra Street	Carrum	Whatley's Drain	Flash
2/4	Canberra Street	Carrum	Whatley's Drain	Flash
3/4	Canberra Street	Carrum	Whatley's Drain	Flash
1/5	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/5	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
6-8	Canberra Street	Carrum	Whatley's Drain	Flash
1/7	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/7	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
9	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
10B	Canberra Street	Carrum	Whatley's Drain	Flash
10A	Canberra Street	Carrum	Whatley's Drain	Flash
11	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
1/12	Canberra Street	Carrum	Whatley's Drain	Flash
2/12	Canberra Street	Carrum	Whatley's Drain	Flash
13	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
13A	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
1/14	Canberra Street	Carrum	Whatley's Drain	Flash
2/14	Canberra Street	Carrum	Whatley's Drain	Flash
3/14	Canberra Street	Carrum	Whatley's Drain	Flash
1/15	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/15	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
3/15	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
16	Canberra Street	Carrum	Whatley's Drain	Flash
16A	Canberra Street	Carrum	Whatley's Drain	Flash
1/17	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/17	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
3/17	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
4/17	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
1/18	Canberra Street	Carrum	Whatley's Drain	Flash
2/18	Canberra Street	Carrum	Whatley's Drain	Flash
3/18	Canberra Street	Carrum	Whatley's Drain	Flash
20	Canberra Street	Carrum	Whatley's Drain	Flash
20A	Canberra Street	Carrum	Whatley's Drain	Flash
1/21-23	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/21-23	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
3/21-23	Canberra Street	Patterson Lakes	Whatley's Drain	Flash

**Properties at risk from Flooding during a 1% AEP event**

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
4/21-23	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
5/21-23	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
6/21-23	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
1/22	Canberra Street	Carrum	Whatley's Drain	Flash
2/22	Canberra Street	Carrum	Whatley's Drain	Flash
3/22	Canberra Street	Carrum	Whatley's Drain	Flash
1/24	Canberra Street	Carrum	Whatley's Drain	Flash
2/24	Canberra Street	Carrum	Whatley's Drain	Flash
25B	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
26	Canberra Street	Carrum	Whatley's Drain	Flash
27A	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
27B	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
1/28-30	Canberra Street	Carrum	Whatley's Drain	Flash
2/28-30	Canberra Street	Carrum	Whatley's Drain	Flash
3/28-30	Canberra Street	Carrum	Whatley's Drain	Flash
4/28-30	Canberra Street	Carrum	Whatley's Drain	Flash
5/28-30	Canberra Street	Carrum	Whatley's Drain	Flash
2/29	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
30	Canberra Street	Carrum	Whatley's Drain	Flash
1/31-33	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/31-33	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
3/31-33	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
4/31-33	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
5/31-33	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
6/31-33	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
7/31-33	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
32	Canberra Street	Carrum	Whatley's Drain	Flash
32A	Canberra Street	Carrum	Whatley's Drain	Flash
1/34	Canberra Street	Carrum	Whatley's Drain	Flash
2/34	Canberra Street	Carrum	Whatley's Drain	Flash
3/34	Canberra Street	Carrum	Whatley's Drain	Flash
1/35	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/35	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
3/35	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
4/35	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
5/35	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
6/35	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
7/35	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
1/36	Canberra Street	Carrum	Whatley's Drain	Flash
2/36	Canberra Street	Carrum	Whatley's Drain	Flash
3/36	Canberra Street	Carrum	Whatley's Drain	Flash
37	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
38	Canberra Street	Carrum	Whatley's Drain	Flash
1/39	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/39	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
3/39	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
4/39	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2-6	Church Road	Carrum	Local Drainage	Flash
19	Dahmen Street	Carrum	Local Drainage	Flash

Properties at risk from Flooding during a 1% AEP event

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
1/21	Dahmen Street	Carrum	Local Drainage	Flash
2/21	Dahmen Street	Carrum	Local Drainage	Flash
23	Dahmen Street	Carrum	Local Drainage	Flash
25	Dahmen Street	Carrum	Local Drainage	Flash
30	Dahmen Street	Carrum	Local Drainage	Flash
32	Dahmen Street	Carrum	Local Drainage	Flash
34	Dahmen Street	Carrum	Local Drainage	Flash
36	Dahmen Street	Carrum	Local Drainage	Flash
38	Dahmen Street	Carrum	Local Drainage	Flash
5	Dyson Road	Carrum	Whatley's Drain	Flash
9	Dyson Road	Carrum	Whatley's Drain	Flash
17	Dyson Road	Carrum	Whatley's Drain	Flash
3	Eel Race Road	Carrum	Local Drainage	Flash
5	Eel Race Road	Carrum	Local Drainage	Flash
16B	Graham Road	Carrum	Whatley's Drain	Flash
16A	Graham Road	Carrum	Whatley's Drain	Flash
18	Graham Road	Carrum	Whatley's Drain	Flash
1/19	Graham Road	Carrum	Whatley's Drain	Flash
1/21	Graham Road	Carrum	Whatley's Drain	Flash
2/21	Graham Road	Carrum	Whatley's Drain	Flash
3/21	Graham Road	Carrum	Whatley's Drain	Flash
4/21	Graham Road	Carrum	Whatley's Drain	Flash
24-40	Graham Road	Carrum	Whatley's Drain	Flash
24A	Graham Road	Carrum	Whatley's Drain	Flash
1	Kipling Street	Carrum	Local Drainage	Flash
2	Kipling Street	Carrum	Local Drainage	Flash
1	Lewellin Grove	Carrum	Local Drainage	Flash
2B	Lewellin Grove	Carrum	Local Drainage	Flash
3	Lewellin Grove	Carrum	Local Drainage	Flash
18	Mcleod Road	Carrum	Local Drainage	Flash
20	Mcleod Road	Carrum	Local Drainage	Flash
22	Mcleod Road	Carrum	Local Drainage	Flash
43B	Mcleod Road	Carrum	Whatley's Drain	Flash
43A	Mcleod Road	Carrum	Whatley's Drain	Flash
51	Mcleod Road	Carrum	Local Drainage	Flash
53	Mcleod Road	Carrum	Local Drainage	Flash
55	Mcleod Road	Carrum	Local Drainage	Flash
57	Mcleod Road	Carrum	Local Drainage	Flash
59	Mcleod Road	Carrum	Local Drainage	Flash
1/61	Mcleod Road	Carrum	Local Drainage	Flash
2/61	Mcleod Road	Carrum	Local Drainage	Flash
3/63	Mcleod Road	Carrum	Local Drainage	Flash
65	Mcleod Road	Carrum	Local Drainage	Flash
67	Mcleod Road	Carrum	Local Drainage	Flash
69	Mcleod Road	Carrum	Local Drainage	Flash
2/71	Mcleod Road	Carrum	Local Drainage	Flash
73	Mcleod Road	Carrum	Local Drainage	Flash
85	Mcleod Road	Carrum	Local Drainage	Flash
87	Mcleod Road	Carrum	Local Drainage	Flash

Properties at risk from Flooding during a 1% AEP event

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
1/89	Mcleod Road	Carrum	Local Drainage	Flash
2/89	Mcleod Road	Carrum	Local Drainage	Flash
91	Mcleod Road	Carrum	Local Drainage	Flash
93	Mcleod Road	Carrum	Local Drainage	Flash
4	Melaleuca Drive	Carrum	Whatley's Drain	Flash
6	Melaleuca Drive	Carrum	Whatley's Drain	Flash
8	Melaleuca Drive	Carrum	Whatley's Drain	Flash
10	Melaleuca Drive	Carrum	Whatley's Drain	Flash
12	Melaleuca Drive	Carrum	Whatley's Drain	Flash
1/14-16	Melaleuca Drive	Carrum	Whatley's Drain	Flash
2/14-16	Melaleuca Drive	Carrum	Whatley's Drain	Flash
3/14-16	Melaleuca Drive	Carrum	Whatley's Drain	Flash
4/14-16	Melaleuca Drive	Carrum	Whatley's Drain	Flash
5/14-16	Melaleuca Drive	Carrum	Whatley's Drain	Flash
1/18	Melaleuca Drive	Carrum	Whatley's Drain	Flash
2/18	Melaleuca Drive	Carrum	Whatley's Drain	Flash
3/18	Melaleuca Drive	Carrum	Whatley's Drain	Flash
4/18	Melaleuca Drive	Carrum	Whatley's Drain	Flash
20	Melaleuca Drive	Carrum	Whatley's Drain	Flash
22B	Melaleuca Drive	Carrum	Whatley's Drain	Flash
22A	Melaleuca Drive	Carrum	Whatley's Drain	Flash
24	Melaleuca Drive	Carrum	Whatley's Drain	Flash
26	Melaleuca Drive	Carrum	Whatley's Drain	Flash
28	Melaleuca Drive	Carrum	Whatley's Drain	Flash
30	Melaleuca Drive	Carrum	Whatley's Drain	Flash
32	Melaleuca Drive	Carrum	Whatley's Drain	Flash
33	Melaleuca Drive	Carrum	Local Drainage	Flash
34	Melaleuca Drive	Carrum	Whatley's Drain	Flash
2/36	Melaleuca Drive	Carrum	Whatley's Drain	Flash
3/36	Melaleuca Drive	Carrum	Whatley's Drain	Flash
4/36	Melaleuca Drive	Carrum	Whatley's Drain	Flash
5/36	Melaleuca Drive	Carrum	Whatley's Drain	Flash
6/36	Melaleuca Drive	Carrum	Whatley's Drain	Flash
7/36	Melaleuca Drive	Carrum	Whatley's Drain	Flash
4A	Millicent Avenue	Carrum	Whatley's Drain	Flash
3/10	Millicent Avenue	Carrum	Whatley's Drain	Flash
15	Millicent Avenue	Carrum	Whatley's Drain	Flash
1/4	Myola Street	Carrum	Whatley's Drain	Flash
1/5	Myola Street	Carrum	Whatley's Drain	Flash
2/5	Myola Street	Carrum	Whatley's Drain	Flash
6	Myola Street	Carrum	Whatley's Drain	Flash
1/7	Myola Street	Carrum	Whatley's Drain	Flash
2/7	Myola Street	Carrum	Whatley's Drain	Flash
3/7	Myola Street	Carrum	Whatley's Drain	Flash
8	Myola Street	Carrum	Whatley's Drain	Flash
9	Myola Street	Carrum	Whatley's Drain	Flash
1/10-12	Myola Street	Carrum	Whatley's Drain	Flash
6/10-12	Myola Street	Carrum	Whatley's Drain	Flash
1/11	Myola Street	Carrum	Whatley's Drain	Flash

Properties at risk from Flooding during a 1% AEP event

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2/11	Myola Street	Carrum	Whatley's Drain	Flash
13A	Myola Street	Carrum	Whatley's Drain	Flash
13B	Myola Street	Carrum	Whatley's Drain	Flash
13C	Myola Street	Carrum	Whatley's Drain	Flash
1/14	Myola Street	Carrum	Whatley's Drain	Flash
15	Myola Street	Carrum	Whatley's Drain	Flash
1/17	Myola Street	Carrum	Whatley's Drain	Flash
2/17	Myola Street	Carrum	Whatley's Drain	Flash
1/18-20	Myola Street	Carrum	Whatley's Drain	Flash
7/18-20	Myola Street	Carrum	Whatley's Drain	Flash
1/19	Myola Street	Carrum	Whatley's Drain	Flash
2/19	Myola Street	Carrum	Whatley's Drain	Flash
21	Myola Street	Carrum	Whatley's Drain	Flash
21A	Myola Street	Carrum	Whatley's Drain	Flash
3/22	Myola Street	Carrum	Whatley's Drain	Flash
1/23	Myola Street	Carrum	Whatley's Drain	Flash
2/23	Myola Street	Carrum	Whatley's Drain	Flash
3/23	Myola Street	Carrum	Whatley's Drain	Flash
24	Myola Street	Carrum	Whatley's Drain	Flash
1/25	Myola Street	Carrum	Whatley's Drain	Flash
2/25	Myola Street	Carrum	Whatley's Drain	Flash
3/25	Myola Street	Carrum	Whatley's Drain	Flash
1/26	Myola Street	Carrum	Whatley's Drain	Flash
2/26	Myola Street	Carrum	Whatley's Drain	Flash
27	Myola Street	Carrum	Whatley's Drain	Flash
1/28	Myola Street	Carrum	Whatley's Drain	Flash
2/28	Myola Street	Carrum	Whatley's Drain	Flash
3/28	Myola Street	Carrum	Whatley's Drain	Flash
1/29	Myola Street	Carrum	Whatley's Drain	Flash
2/29	Myola Street	Carrum	Whatley's Drain	Flash
3/29	Myola Street	Carrum	Whatley's Drain	Flash
3/30	Myola Street	Carrum	Whatley's Drain	Flash
1/31-33	Myola Street	Carrum	Whatley's Drain	Flash
2/31-33	Myola Street	Carrum	Whatley's Drain	Flash
3/31-33	Myola Street	Carrum	Whatley's Drain	Flash
4/31-33	Myola Street	Carrum	Whatley's Drain	Flash
5/31-33	Myola Street	Carrum	Whatley's Drain	Flash
6/31-33	Myola Street	Carrum	Whatley's Drain	Flash
7/31-33	Myola Street	Carrum	Whatley's Drain	Flash
1/32	Myola Street	Carrum	Whatley's Drain	Flash
2/32	Myola Street	Carrum	Whatley's Drain	Flash
3/32	Myola Street	Carrum	Whatley's Drain	Flash
1/34	Myola Street	Carrum	Whatley's Drain	Flash
2/34	Myola Street	Carrum	Whatley's Drain	Flash
1/35	Myola Street	Carrum	Whatley's Drain	Flash
2/35	Myola Street	Carrum	Whatley's Drain	Flash
1	Rigby Street	Carrum	Whatley's Drain	Flash
1B	Rigby Street	Carrum	Whatley's Drain	Flash
1A	Rigby Street	Carrum	Whatley's Drain	Flash

Properties at risk from Flooding during a 1% AEP event

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
2B	Rigby Street	Carrum	Whatley's Drain	Flash
2A	Rigby Street	Carrum	Whatley's Drain	Flash
3	Rigby Street	Carrum	Whatley's Drain	Flash
1/15	Rigby Street	Carrum	Whatley's Drain	Flash
17A	Rigby Street	Carrum	Whatley's Drain	Flash
19	Rigby Street	Carrum	Whatley's Drain	Flash
21	Rigby Street	Carrum	Whatley's Drain	Flash
23	Rigby Street	Carrum	Whatley's Drain	Flash
24B	Rigby Street	Carrum	Whatley's Drain	Flash
25	Rigby Street	Carrum	Whatley's Drain	Flash
26	Rigby Street	Carrum	Whatley's Drain	Flash
27	Rigby Street	Carrum	Whatley's Drain	Flash
29	Rigby Street	Carrum	Whatley's Drain	Flash
31	Rigby Street	Carrum	Whatley's Drain	Flash
22	Riversdale Avenue	Carrum	Local Drainage	Flash
1/24	Riversdale Avenue	Carrum	Local Drainage	Flash
2/24	Riversdale Avenue	Carrum	Local Drainage	Flash
25	Riversdale Avenue	Carrum	Local Drainage	Flash
26	Riversdale Avenue	Carrum	Local Drainage	Flash
27	Riversdale Avenue	Carrum	Local Drainage	Flash
1/28	Riversdale Avenue	Carrum	Local Drainage	Flash
2/28	Riversdale Avenue	Carrum	Local Drainage	Flash
29	Riversdale Avenue	Carrum	Local Drainage	Flash
30	Riversdale Avenue	Carrum	Local Drainage	Flash
2/1	Smith Street	Carrum	Whatley's Drain	Flash
2/3	Smith Street	Carrum	Whatley's Drain	Flash
5	Smith Street	Carrum	Whatley's Drain	Flash
2/7	Smith Street	Carrum	Whatley's Drain	Flash
9	Smith Street	Carrum	Whatley's Drain	Flash
2/11	Smith Street	Carrum	Whatley's Drain	Flash
3/11	Smith Street	Carrum	Whatley's Drain	Flash
13	Smith Street	Carrum	Whatley's Drain	Flash
15	Smith Street	Carrum	Whatley's Drain	Flash
3/17	Smith Street	Carrum	Whatley's Drain	Flash
4/17	Smith Street	Carrum	Whatley's Drain	Flash
19	Smith Street	Carrum	Whatley's Drain	Flash
10	Stanley Street	Carrum	Local Drainage	Flash
20	True Avenue	Carrum	Local Drainage	Flash
21	True Avenue	Carrum	Local Drainage	Flash
1/22	True Avenue	Carrum	Local Drainage	Flash
1/23	True Avenue	Carrum	Local Drainage	Flash
2/23	True Avenue	Carrum	Local Drainage	Flash
24	True Avenue	Carrum	Local Drainage	Flash
1/25	True Avenue	Carrum	Local Drainage	Flash
2/25	True Avenue	Carrum	Local Drainage	Flash
26	True Avenue	Carrum	Local Drainage	Flash
27	True Avenue	Carrum	Local Drainage	Flash
28	True Avenue	Carrum	Local Drainage	Flash
29	True Avenue	Carrum	Local Drainage	Flash

**Properties at risk from Flooding during a 1% AEP event**

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
1/1	Valetta Street	Carrum	Local Drainage	Flash
3	Valetta Street	Carrum	Local Drainage	Flash
1/8	Valetta Street	Carrum	Local Drainage	Flash
2/8	Valetta Street	Carrum	Local Drainage	Flash
3/8	Valetta Street	Carrum	Local Drainage	Flash
4/8	Valetta Street	Carrum	Local Drainage	Flash
5/8	Valetta Street	Carrum	Local Drainage	Flash
6/8	Valetta Street	Carrum	Local Drainage	Flash
7/8	Valetta Street	Carrum	Local Drainage	Flash
8/8	Valetta Street	Carrum	Local Drainage	Flash
9/8	Valetta Street	Carrum	Local Drainage	Flash
10/8	Valetta Street	Carrum	Local Drainage	Flash
11/8	Valetta Street	Carrum	Local Drainage	Flash
12	Valetta Street	Carrum	Local Drainage	Flash
13	Valetta Street	Carrum	Local Drainage	Flash
14	Valetta Street	Carrum	Local Drainage	Flash
16	Valetta Street	Carrum	Local Drainage	Flash
20	Valetta Street	Carrum	Local Drainage	Flash
1/22	Valetta Street	Carrum	Local Drainage	Flash
1/24	Valetta Street	Carrum	Local Drainage	Flash
25	Valetta Street	Carrum	Local Drainage	Flash
12/26	Valetta Street	Carrum	Local Drainage	Flash
27	Valetta Street	Carrum	Local Drainage	Flash
1/28	Valetta Street	Carrum	Local Drainage	Flash
1/30	Valetta Street	Carrum	Local Drainage	Flash
31	Valetta Street	Carrum	Local Drainage	Flash
33	Valetta Street	Carrum	Local Drainage	Flash
1/34	Valetta Street	Carrum	Local Drainage	Flash
35	Valetta Street	Carrum	Local Drainage	Flash
37	Valetta Street	Carrum	Local Drainage	Flash
45A	Valetta Street	Carrum	Local Drainage	Flash
45C	Valetta Street	Carrum	Local Drainage	Flash
45B	Valetta Street	Carrum	Local Drainage	Flash
47	Valetta Street	Carrum	Local Drainage	Flash
49	Valetta Street	Carrum	Local Drainage	Flash
51	Valetta Street	Carrum	Local Drainage	Flash
53	Valetta Street	Carrum	Local Drainage	Flash
55	Valetta Street	Carrum	Local Drainage	Flash
57	Valetta Street	Carrum	Local Drainage	Flash
59A	Valetta Street	Carrum	Local Drainage	Flash
68B	Valetta Street	Carrum	Local Drainage	Flash
68A	Valetta Street	Carrum	Local Drainage	Flash
70	Valetta Street	Carrum	Local Drainage	Flash
72	Valetta Street	Carrum	Local Drainage	Flash
74	Valetta Street	Carrum	Local Drainage	Flash
74B	Valetta Street	Carrum	Local Drainage	Flash
74A	Valetta Street	Carrum	Local Drainage	Flash
76	Valetta Street	Carrum	Local Drainage	Flash
78	Valetta Street	Carrum	Local Drainage	Flash

Properties at risk from Flooding during a 1% AEP event

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
80	Valetta Street	Carrum	Local Drainage	Flash
82	Valetta Street	Carrum	Local Drainage	Flash
84	Valetta Street	Carrum	Local Drainage	Flash
86	Valetta Street	Carrum	Local Drainage	Flash
1/87	Valetta Street	Carrum	Local Drainage	Flash
2/87	Valetta Street	Carrum	Local Drainage	Flash
91	Valetta Street	Carrum	Local Drainage	Flash
92A	Valetta Street	Carrum	Local Drainage	Flash
92B	Valetta Street	Carrum	Local Drainage	Flash
1/93	Valetta Street	Carrum	Local Drainage	Flash
2/93	Valetta Street	Carrum	Local Drainage	Flash
3/93	Valetta Street	Carrum	Local Drainage	Flash
94	Valetta Street	Carrum	Local Drainage	Flash
95	Valetta Street	Carrum	Local Drainage	Flash
96	Valetta Street	Carrum	Local Drainage	Flash
97	Valetta Street	Carrum	Local Drainage	Flash
1/98-100	Valetta Street	Carrum	Local Drainage	Flash
2/98-100	Valetta Street	Carrum	Local Drainage	Flash
99	Valetta Street	Carrum	Local Drainage	Flash
102	Valetta Street	Carrum	Local Drainage	Flash
104	Valetta Street	Carrum	Local Drainage	Flash
106	Valetta Street	Carrum	Local Drainage	Flash
1/108	Valetta Street	Carrum	Local Drainage	Flash
2/108	Valetta Street	Carrum	Local Drainage	Flash
110	Valetta Street	Carrum	Local Drainage	Flash
112	Valetta Street	Carrum	Local Drainage	Flash
114	Valetta Street	Carrum	Local Drainage	Flash
116	Valetta Street	Carrum	Local Drainage	Flash
118	Valetta Street	Carrum	Local Drainage	Flash
8	Walkers Road	Carrum	Local Drainage	Flash
10	Walkers Road	Carrum	Local Drainage	Flash
13	Walkers Road	Carrum	Local Drainage	Flash
17	Walkers Road	Carrum	Local Drainage	Flash
19	Walkers Road	Carrum	Local Drainage	Flash
21	Walkers Road	Carrum	Local Drainage	Flash
51	Walkers Road	Carrum	Whatley's Drain	Flash
53	Walkers Road	Carrum	Whatley's Drain	Flash
21	Westley Street	Carrum	Local Drainage	Flash
23	Westley Street	Carrum	Local Drainage	Flash
25	Westley Street	Carrum	Local Drainage	Flash
27	Westley Street	Carrum	Local Drainage	Flash
28	Westley Street	Carrum	Local Drainage	Flash
29	Westley Street	Carrum	Local Drainage	Flash
30	Westley Street	Carrum	Local Drainage	Flash
31	Westley Street	Carrum	Local Drainage	Flash
32	Westley Street	Carrum	Local Drainage	Flash
34	Westley Street	Carrum	Local Drainage	Flash
36	Westley Street	Carrum	Local Drainage	Flash
2	Canberra Street	Carrum	Whatley's Drain	Flash

Properties at risk from Flooding during a 1% AEP event				
Residential	Commercial	Industrial	Rural	Public Use
Street No. at Risk	Street	Suburb	Along Melbourne Water Watercourse	Flood Risk Type
3	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
1/4	Canberra Street	Carrum	Whatley's Drain	Flash
2/4	Canberra Street	Carrum	Whatley's Drain	Flash
3/4	Canberra Street	Carrum	Whatley's Drain	Flash
1/5	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/5	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
6-8	Canberra Street	Carrum	Whatley's Drain	Flash
1/7	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
2/7	Canberra Street	Patterson Lakes	Whatley's Drain	Flash
<b>Total</b>				
<b>380</b>				

Table C7.2 – Properties at risk of flooding around Patterson Lakes & Carrum in the City of Kingston

## ISOLATION

With McLeod Road and Thompsons Road at risk of flooding during a 1% AEP (100yr ARI) event, areas of Patterson Lakes and Carrum are at risk of isolation. Other access routes: Nepean Highway, Mornington Peninsula Freeway, Gladesville Boulevard, Old Wells Road and Eel Race Road are expected to remain open.

## ESSENTIAL INFRASTRUCTURE

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 Kingston is available via the website at: [https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23\\_Kingston\\_LAM.pdf](https://static.ptv.vic.gov.au/siteassets/Maps/Localities/PDFs/23_Kingston_LAM.pdf)

Apart from the roads outlined below, all other essential infrastructure and services areas around Patterson Lakes & Carrum 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 Patterson Lakes & Carrum. Check the VicRoads website for more details: <http://alerts.vicroads.vic.gov.au/>

VicRoads Roads flooded (above 300mm) in a 1% AEP (100yr ARI) event
<ul style="list-style-type: none"> <li>McLeod Road, Patterson Lakes between Snapper Point Drive and Gladesville Boulevard</li> <li>Thompson Road, Patterson Lakes near McLeod Road</li> </ul>

Table C7.3 – VicRoads Possible Road Closures during a flooding event

Kingston City Council Roads flooded (above 300mm) in a 1% AEP (100yr ARI) event	
<b>CARRUM</b>	Launching Way
Myola Street	Valetta Street
Rigby Street	Kipling Street
Graham Road	Colenso Street
Millicent Avenue	<b>PATTERSON LAKES</b>
Dyson Road	Canberra Street

Table C7.4 – Kingston City Council Possible Road Closures during a flooding event

## FLOOD MITIGATION

### PUMPING STATIONS

Melbourne Water Pumping Station	On Drain / Waterway	Location	No. of Pumps	Capacity	Trigger Levels (Start and Stop)	Melway Reference
Gladesville Boulevard	Patterson Lakes South Project	Gladesville Boulevard, Patterson Lakes	2	Pump 1: 40ML/day Pump 2: 6.3ML/day	Pump 1: -1.88m AHD to -2.77m AHD Pump 2: -1.24m AHD to -2.77m AHD	97H4
McLeod Road	Patterson Lakes South Project	McLeod Road, Patterson Lakes	2	Unknown	Pump 1: -1.32m AHD to -1.82m AHD Pump 2: -0.87m AHD to -1.42m AHD	97J6
Whatleys Drain	Whatleys Drain	Launching Way, Carrum at convergence with Patterson River	2	Unknown	Pump 1: -1.38m AHD to -1.68m AHD Pump 2: -1.13m AHD to -1.68m AHD	97D6
Wadsleys Drain	Wadsleys Drain	Melbourne Water Eastern Treatment Plant adjacent to Mornington Peninsula Freeway, Carrum Downs	1	Pump 1: 0.5ML/day	Pump 1: 0.60m AHD to 0.20m AHD	97K9
Kananook Creek	Patterson Lakes South Project (Environmental)	Palm Beach Drive, Patterson Lakes adjacent to Eel Race Drain	2	Pump 1: 98ML/day Pump 2: 50ML/day	Pump 1: 0.65m AHD to 0.70m AHD Pump 2: 0.85m AHD to 0.90m AHD	97G9

Table C7.5 – Melbourne Water Pumping Stations around Patterson Lakes & Carrum

Kingston City Council Pumping Station	Suburb	No. of Pumps	Capacity
Valetta Street North	Carrum	2	200L/s
Valetta Street South	Carrum	2	200L/s
Millicent Street	Carrum	2	200L/s
Canberra Street	Carrum	2	200L/s
Riversdale Avenue	Carrum	2	1,000L/s

Table C7.6 – Kingston City Pumping Stations around Patterson Lakes & Carrum

## LEVEES

Melbourne Water Levee	Reach	Side	Levee Height	Levee Length	Expected Level of Protection	ANCOLD Hazard Rating	Houses at risk behind Levee	Melway Reference
Patterson River	Mornington Peninsula Freeway to Seawall	North	4.0m (5.4m AHD) upstream to (2.73m AHD) downstream	2.8km	1m freeboard in 100yr ARI Event	High A	407	97J3-97C7
Patterson River	Mornington Peninsula Freeway to Railway	South	4.0m (5.4m AHD) upstream to (2.73m AHD) downstream	2.7km	1m freeboard in 100yr ARI Event	High A	445	97J3-97D7
Wadsley Drain	Wadsley Road to Eel Race Drain	West	1.26m	0.9km	100yr ARI Event (freeboard unknown)	Very Low	0	97K7-97K10
Eel Race Drain	Mornington Peninsula Freeway to Footbridge	North	2.0m	1.3km	>100yr ARI Event. 100yr ARI flows will begin to top the lower southern levee bank into Seaford Wetlands	High A	135	97J9-97F9

Table C7.7 – Melbourne Water Levees around Patterson Lakes & Carrum

## TIDAL GATES

On Drain / Waterway	Location	To Be Closed at Level against Gauge	Melway Reference
Patterson River	Marina Drive, Patterson Lakes at mouth of Inner Harbour Marina	Patterson Lakes: 0.73m (0.73m AHD)	97H5
Patterson River	North Shore Drive, Patterson Lakes at mouth of Patterson Lakes Marina	Patterson Lakes: 0.73m (0.73m AHD)	97G6
Patterson River	Pier One Drive, Patterson Lakes at mouth of the Tidal Canal	Patterson Lakes: 0.73m (0.73m AHD)	97F6

Table C7.8 – Tidal Flood Gates around Patterson Lakes & Carrum

No formal Retarding Basins exist in Patterson Lakes or Carrum.

## COMMAND, CONTROL & COORDINATION

VICSES will assume overall control of the response to flood incidents. Other agencies will be requested to support operations as detailed in this Plan. Control and coordination of a flood incident shall be carried out at the lowest effective level and in accordance with the State Emergency Response Plan (EMMV Part 3). During significant events, VICSES will conduct incident management using multi-agency resources.

---

## FLOOD IMPACTS & REQUIRED ACTIONS

The table below is a breakdown of the number of properties flooded in a 1% AEP (100yr ARI) event. Refer to the following intelligence card/s for Patterson Lakes for more details.

Land Use Flooded in a 1% AEP Event	Total
Residential	374
Commercial	0
Industrial	0
Public Land	6
Rural	0
<b>Total</b>	<b>380</b>

Table C7.9 – Breakdown of likely land use flooded around Patterson Lakes and Carrum during a 1% AEP event

## FLOOD INTELLIGENCE CARD – PATTERSON LAKES GAUGE, PATTERSON RIVER

Version 3 – September 2017



*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.*

LOCATION	Pier One, Whalers Cove in Patterson Lakes
MELWAY REFERENCE:	97 F6
STREAM:	Patterson River
GAUGE NUMBER:	228383A
GAUGE ZERO:	0.00m AHD
GAUGE TYPE	Tide Level

MINOR:	0.75m AHD
MODERATE:	Not Established
MAJOR	Not Established
LEVEE HEIGHT:	4.0m (5.4m AHD) upstream to (2.7m AHD)
TELEMETRIC/MANUAL	Telemetric
HIGHEST RECORDED FLOOD:	1.26m AHD (3 <sup>rd</sup> February 2005; 26 <sup>th</sup> April 2009; & 4 <sup>th</sup> February 2011)

River Height	Flood Class or Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
0.68m-0.72m			<ul style="list-style-type: none"> <li>Commencement of closure of the three tidal gates at Patterson Lakes by Melbourne Water if level expected to reach 0.73m. Level of closure to commence depending on expected rate of tide rise considering gate closures take approx. 25 minutes with two people on site.</li> </ul>
0.73m			<ul style="list-style-type: none"> <li>Tidal Gate at Marina Drive, Patterson Lakes at mouth of Inner Harbour Marina (Melway 97H5) should be closed at this level by Melbourne Water.</li> <li>Tidal Gate at North Shore Drive, Patterson Lakes at Mouth of Patterson Lakes Marina (Melway 97G6) should be closed at this level by Melbourne Water.</li> <li>Tidal Gate at Pier One Drive, Patterson Lakes at Mouth of the Tidal Canal (Melway 97F6) should be closed at this level by</li> </ul>

River Height	Flood Class or Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
			Melbourne Water.
0.75m	MINOR FLOOD LEVEL		
0.80m		<ul style="list-style-type: none"> <li>Boats in Patterson Lakes system and Marina may become damaged as jetties begin to lift and cause moorings to break away</li> </ul> <b>Water Over Road</b> <ul style="list-style-type: none"> <li>Thompson Road, Patterson Lakes near McLeod Road</li> </ul>	
1.26m	3 <sup>rd</sup> February 2005 Tide Level Event		
1.55m	1% AEP (100yr ARI) Flood Level	<b>Community Infrastructure Flooded</b> <ul style="list-style-type: none"> <li>Access to Patterson Lakes Retirement Village via McLeod Road likely to be restricted with McLeod Road flooded</li> </ul> <b>Water Over Road</b> <ul style="list-style-type: none"> <li>McLeod Road, Patterson Lakes between Snapper Point Drive and Gladesville Boulevard</li> </ul>	
2.5m		<ul style="list-style-type: none"> <li>Maximum level expected to reach should tidal gates fail at Patterson Lakes with excess water beginning to flow south over Eel Race Drain Levees</li> <li>Approximately 1750 properties would be flooded</li> </ul>	

Table C7.10 – Breakdown of likely consequences at various Patterson Lakes gauge level heights along Patterson River with operational considerations

## FLOOD INTELLIGENCE CARD – WHATLEYS DRAIN, CARRUM (UNGAUGED)

Version 1 – September 2017



*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.*

CLOSEST RAIN GAUGE	<b>Eel Race Drain at Seaford North</b>
LOCATION	<b>Pedestrian Crossing along Riviera Street, Seaford</b>
MELWAY REF:	<b>97 D11</b>

GAUGE NUMBER	<b>228371A</b>
GAUGE TYPE	<b>Stream Level &amp; Rain</b>
TELEMETRIC/MANUAL	<b>Telemetric</b>

Design Rainfall Depths (mm) – Indication of Possible Flooding	Annual Exceedance Probability (% AEP)	Consequence / Impact	Operational Considerations
21mm in 10 mins; 35mm in 30 mins; 44mm in 1 hour; 57mm in 2 hours; or 82mm 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.	1% AEP (100 year ARI)	<b>Properties at Flood Risk (Properties likely at risk before this Level)</b> <b>380 Properties in Total</b> <b>Local Drainage</b> <ul style="list-style-type: none"> <li>• 2-6 Church Road, Carrum</li> <li>• 19, 1/21, 2/21, 23, 25, 30, 32, 34, 36 &amp; 38 Dahmen Street, Carrum</li> <li>• 3 &amp; 5 Eel Race Road, Carrum</li> <li>• 1 &amp; 2 Kipling Street, Carrum</li> <li>• 1, 2B &amp; 3 Lewellin Grove, Carrum</li> <li>• 18, 20, 22, 43B, 43A, 51, 53, 55, 57, 59, 1/61, 2/61, 3/63, 65, 67, 69, 2/71, 73, 85, 87, 1/89, 2/89, 91 &amp; 93 Mcleod Road, Carrum</li> <li>• 22, 1/24, 2/24, 25, 26, 27, 1/28, 2/28, 29 &amp; 30 Riversdale Avenue, Carrum</li> <li>• 10 Stanley Street, Carrum</li> <li>• 20, 21, 1/22, 1/23, 2/23, 24, 1/25, 2/25, 26, 27, 28 &amp; 29 True Avenue, Carrum</li> <li>• 1/1, 3, Units 1-11/8, 12, 13, 14, 16, 20, 1/22, 1/24, 25, 12/26, 27, 1/28, 1/30, 31, 33, 1/34, 35, 37, 45A, 45B, 45C, 47, 49, 51, 53, 55, 57, 59A, 68A, 68B, 70, 72, 74, 74A, 74B, 76, 78, 80, 82, 84, 86, 1/87, 2/87, 91, 92A, 92B, Units 1-3/93, 94, 95, 96, 97, 1/98-100, 2/98-100, 99, 102, 104, 106, 1/108, 2/108, 110, 112, 114, 116 &amp; 118 Valetta Street, Carrum</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>• 8, 10, 13, 17, 19, 21, 51 &amp; 53 Walkers Road, Carrum</li> <li>• 21, 23, 25, 27, 28, 29, 30, 31, 32, 34 &amp; 36 Westley Street, Carrum</li> </ul> <p><b>Whatley's Drain</b></p> <ul style="list-style-type: none"> <li>• 2, 3, 1/4, 2/4, 3/4, 1/5, 2/5, 6-8, 1/7, 2/7, 9, 10A, 10B, 11, 1/12, 2/12, 13, 13A, Units 1-3/14, Units 1-3/15, 16, 16A, Units 1-4/17, Units 1-3/18, 20, 20A, Units 1-6/21-23, Units 1-3/22, 1/24, 2/24, 25B, 26, 27A, 27B, Units 2-5/28-30, 2/29, 30, Units 1-7/31-33, 32, 32A, Units 1-3/34, Units 1-7/35, Units 1-3/36, 37, 38 &amp; Units 1-4/39 Canberra Street, Carrum &amp; Patterson Lakes</li> <li>• 5, 9 &amp; 17 Dyson Road, Carrum</li> <li>• 16B, 16A, 18, 1/19, 1/21, 2/21, 3/21, 4/21, 24-40 &amp; 24A Graham Road, Carrum</li> <li>• 4, 6, 8, 10, 12, Units 1-5/14-16, Units 1-4/18, 20, 22A, 22B, 24, 26, 28, 30, 32, 33, 34 &amp; Units 2-7/36 Melaleuca Drive, Carrum</li> <li>• 4A, 3/10 &amp; 15 Millicent Avenue, Carrum</li> <li>• 1/4, 1/5, 2/5, 6, 1/7, 2/7, 3/7, 8, 9, 1/10-12, 6/10-12, 1/11, 2/11, 13A, 13B, 13C, 1/14, 15, 1/17, 2/17, 1/18-20, 7/18-20, 1/19, 2/19, 21, 21A, 3/22, Units 1-3/23, 24, Units 1-3/25, 1/26, 2/26, 27, Units 1-3/28, Units 1-3/29, 3/30, Units 1-7/31-33, Units 1-3/32, 1/34, 2/34, 1/35 &amp; 2/35 Myola Street, Carrum</li> <li>• 1, 1B, 1A, 2B, 2A, 3, 1/15, 17A, 19, 21, 23, 24B, 25, 26, 27, 29 &amp; 31 Rigby Street, Carrum</li> <li>• 2/1, 2/3, 5, 2/7, 9, 2/11, 3/11, 13, 15, 3/17, 4/17 &amp; 19 Smith Street, Carrum</li> </ul> <p><b>Community Infrastructure Flooded</b></p> <ul style="list-style-type: none"> <li>• McDougalls Reserve on McLeod Road, Carrum</li> <li>• Rene Anderson Kindergarten on Dyson Road, Carrum</li> </ul> <p><b>Water Over Road</b></p> <ul style="list-style-type: none"> <li>• McLeod Road, Patterson Lakes between Snapper Point Drive and Gladesville Boulevard</li> </ul> <p><b>Whatley's Drain</b></p> <ul style="list-style-type: none"> <li>• Canberra Street, Patterson Lakes</li> <li>• Myola Street, Carrum between McLeod Road and Beachcomber Court</li> <li>• Rigby Street, Carrum</li> <li>• Graham Road, Carrum</li> <li>• Millicent Avenue, Carrum</li> <li>• Dyson Road, Carrum</li> <li>• Launching Way, Carrum</li> <li>• Valetta Street, Carrum</li> <li>• Kipling Street, Carrum</li> <li>• Colenso Street, Carrum</li> </ul>	

Table C7.11 – Breakdown of possible consequences at various rainfall intensities around Patterson Lakes & Carrum with operational considerations

---

## APPENDIX D - FLOOD EVACUATION ARRANGEMENTS

### Phase 1 - Decision to Evacuate

The Incident Controller may make the decision to evacuate an at-risk community under the following circumstances:

- Properties are likely to become inundated;
- Properties are likely to become isolated and occupants are not suitable for isolated conditions;
- Public health is at threat as a consequence of flooding and evacuation is considered the most effective risk treatment. This is the role of the Health Commander of the incident to assess and manage. Refer to the State Health Emergency Response Plan (SHERP) for details);
- Essential services have been damaged and are not available to a community and evacuation is considered the most effective risk treatment.

The following should be considered when planning for evacuation:

- Anticipated flood consequences and their timing and reliability of predictions;
- Size and location of the community to be evacuated;
- Likely duration of evacuation;
- Forecast weather;
- Flood Models;
- Predicted timing of flood consequences;
- Time required to conduct the evacuation;
- Time available to conduct the evacuation;
- Evacuation priorities and evacuation planning arrangements;
- Access and egress routes available and their potential flood liability;
- Current and likely future status of essential infrastructure;
- Resources required to conduct the evacuation;
- Resources available to conduct the evacuation;
- Shelter including Emergency Relief Centres, Assembly Areas etc.;
- Vulnerable people and facilities;
- Transportation;
- Registration
- People of CALD background and transient populations;
- Safety of emergency service personnel;
- Different stages of an evacuation process.

The decision to evacuate is to be made in consultation with the MERO, MERC, DHS, Health Commander and other key agencies and expert advice (CMA's and Flood Intelligence specialists).

---

## Phase 2 – Warning

Warnings may include a warning to prepare to evacuate and a warning to evacuate immediately. Once the decision to evacuate has been made, the at-risk community will be warned to evacuate. Evacuation warnings can be disseminated via methods listed in part 3 of this plan.

Evacuation warning messages will be developed and issued by VICSES in consultation with the MERO, MERC, DHS and other key agencies and expert advice (CMA's and Flood Intelligence specialists).

## Phase 3 – Withdrawal

Withdrawal will be controlled by VICPOL. VICSES will provide advice regarding most appropriate evacuation routes and locations for at-risk communities to evacuate to, etc.

VICSES, CFA, AV and Local Government will provide resources where available to support VICPOL/VICROADS with route control and may assist VICPOL in arranging evacuation transportation.

VICPOL will control security of evacuated areas.

Evacuees will be encouraged to move using their own transport where possible. Transport for those without vehicles or other means will be arranged in consultation with the MERO.

## Phase 4 – Shelter

Relief Centres and/or assembly areas which cater for people's basic needs for floods may be established to meet the immediate needs of people affected by flooding. The flood relief centres and/or Assembly Areas are listed in the Municipal Emergency Management Plan:

VICPOL in consultation with VICSES will liaise with Local Government and DHS (where regional coordination is required) via the relevant control centre to plan for the opening and operation of relief centres. This can best be achieved through the Emergency Management Team (EMT).

### Animal Shelter

Animal shelter compounds may be established for domestic pets and companion animals of evacuees. Efforts will be made to accommodate animals at relief centres

### Caravans

The following caravan parks are located in the City of Kingston:

Blue Gum Caravan Park – 29 wells Road Chelsea Heights

South East Holiday Village - 45 Wells Road Chelsea Heights

Discovery Holiday Park – 100 Broadway St Chelsea.

## Phase 5 – Return

Return will be consistent with the Strategic Plan for the Return of Community

The Incident Controller in consultation with VICPOL will determine when it is safe for evacuees to return to their properties and will arrange for the notification of the community.

---

VicPol will manage the return of evacuated people with the assistance of other agencies as required.

Considerations for deciding whether to evacuate include:

- Current flood situation;
- Status of flood mitigation systems;
- Size and location of the community;
- Access and egress routes available and their status;
- Resources required to coordinate the return;
- Special needs groups;
- Forecast weather;
- Transportation particularly for people without access to transport

### **Disruption to Services**

Disruption to a range of services can occur in the event of a flood. This may include road closures affecting school bus routes, water treatment plant affecting potable water supplies etc.

### **Rescue**

The following resources are available within City of Kingston to assist with rescue operations:

No resources identified

Known high-risk areas/communities (i.e. low-lying islands) where rescues might be required include:

No area or communities identified other than flash floods over roadways.

---

## APPENDIX E - FLOOD WARNING SYSTEMS

### Flood Warning

Flood Warning products and Flood Class Levels can be found on the BoM website. Flood Warning Products include Severe Thunderstorm Warnings, Severe Weather Warnings, Flood Watches and Flood Warnings.

### Flood Bulletins

VICSES distributes flood emergency information to the media through “Flood Bulletins”. Flood Bulletins provide BoM Flood Warning information as well as information regarding possible flood consequences and safety advice, not contained in BoM Flood Warning products. VICSES uses the title Flood bulletin to ensure emphasis is placed upon BoM Flood Warning product titles.

The relevant VICSES Region Headquarters or the established ICC will normally be responsible for drafting, authorizing and issuing issue Flood Bulletins, using the One Source, One Message system.

Flood Bulletins should refer to the warning title within the Bulletin header, for example Flood Bulletin for Major Flood Warning on Yarra River.

Flood Bulletins should follow the following structure

- What is the current flood situation;
- What is the predicted flood situation;
- What are the likely flood consequences;
- What should the community do in response to flood warnings;
- Where to seek further information;
- Who to call if emergency assistance is required.

It is important that the description of the predicted flood situation is consistent with and reflects the relevant BoM Flood Warning.

Flood Bulletins should be focused on specific gauge (or in the absence of gauges, catchment) reference areas, that is the area in which flood consequences specifically relate to the relevant flood gauge.

Flood Bulletins should be prepared and issued after receipt of each Flood Watch and Flood Warning from the BoM, or after Severe Weather or Thunderstorm Warnings indicating potential for severe flash flooding.

To ensure flood bulletins are released in a timely manner, standardised flood bulletins may be drafted based on different scenarios, prior to events occurring. The standardised flood bulletins can then be adapted to the specifics of the event occurring or predicted to occur.

### Local Flood Warning System Arrangements

Melbourne Water has two rain gauges; level monitoring and hydraulic monitoring that contribute to the flood warning system in Kingston. Specifically, the warning system includes:

- Rain Gauge, Braeside, Mordialloc Creek Catchment;
- Rain gauge, Mentone, Mordialloc Creek Catchment;

- 
- Hydraulic monitoring of velocity, depth and flows into Clayton Retarding Basin, Clayton South Drain, Mordialloc creek catchment;
  - Level monitoring, Dunlops Road Drain at Citrus Street, Braeside, Mordialloc Creek catchment; and
  - Level monitoring, Patterson River and Whalers Cove.

Kingston City Council has a new Flood warning System installed along Bowen Parkway in the waterways suburb. The main access road beside the wetlands has been designed so that it is subject to flooding (as part of the subdivision approval process), and has automated boom gates that close and stop traffic when the water level reaches the trigger level.

---

## APPENDIX F – MAPS

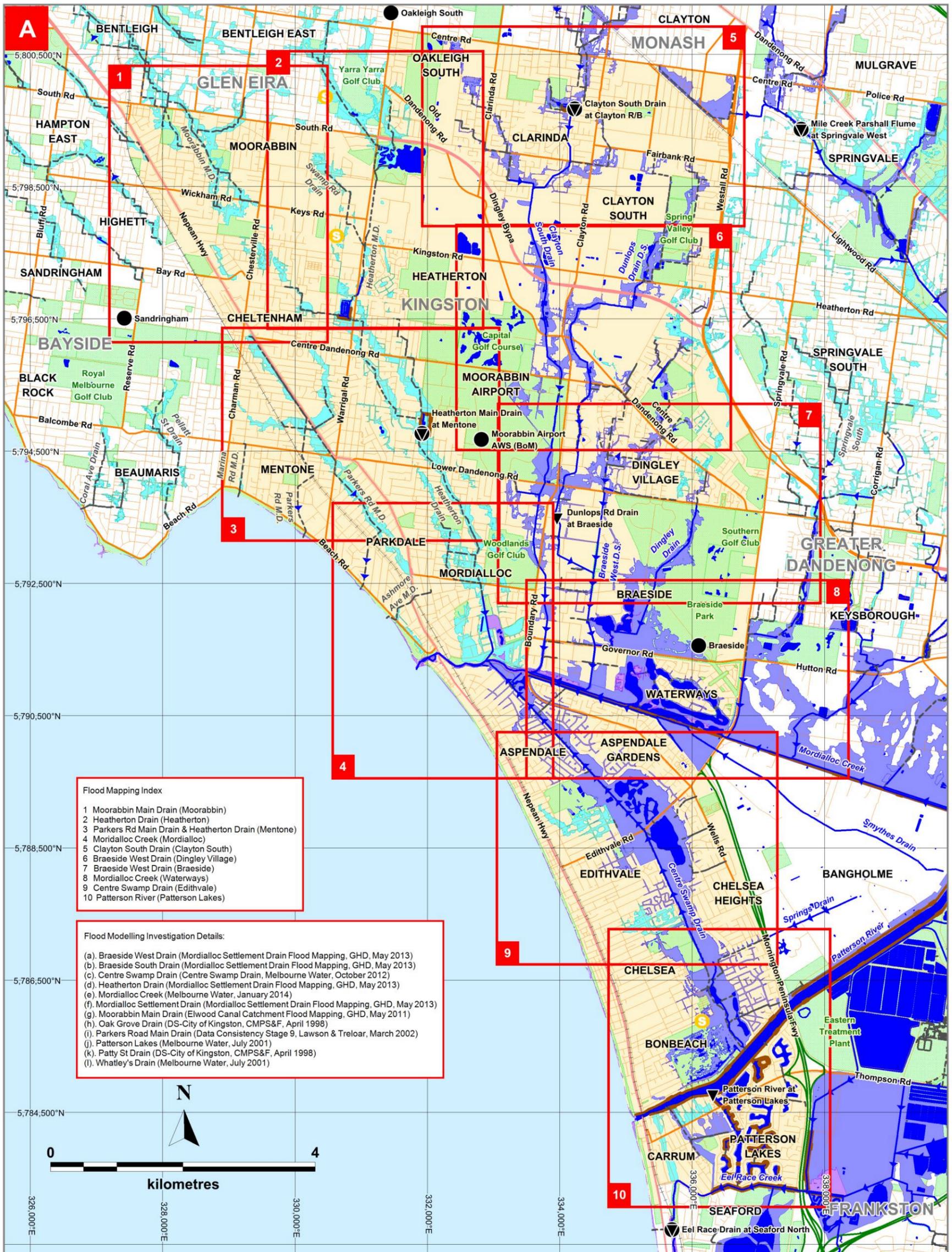
### Overview

Maps considered useful to flood response are included in this Appendix. They include:

- A map outlining a series of flooding hot spot maps within the City of Kingston.
- A map showing the Municipal boundary together with the open waterways and underground stormwater drainage pipe network within the City of Kingston and the 1% AEP (100-year ARI) flood extents (sourced from Melbourne Water GIS).
- A set of XX maps showing flooding hot spots within the City of Kingston together with the 1% AEP (100-year ARI) flood extents (sourced from the Melbourne Water GIS).

#### Note that:

- The mapping/data provided in this Appendix has been developed from Melbourne Water and other sources and taken from historical records and flood modelling. It may not include more recent data or local anecdotal information. It is planned that the mapping/data be updated as further studies or modelling is completed and other Information obtained.
- Maps showing the Special Building Overlay and Land Subject to Inundation Overlay are included in the Kingston Planning Scheme can be used as a guide to areas that may flood during an event. The maps can be found in hard copy form at the Council's main office or online at the Department of Planning and Community Development website <http://planningschemes.dpcd.vic.gov.au/>.
- Maps showing 1 in 100-year ARI (1% AEP) flood extents and floodways (together with volume, height and water quality data) are shown at the Victorian Water Resources website <http://mapshare.maps.vic.gov.au/MapShareVic/index.html?viewer=MapShareVic.PublicSite&locale=en-AU>.



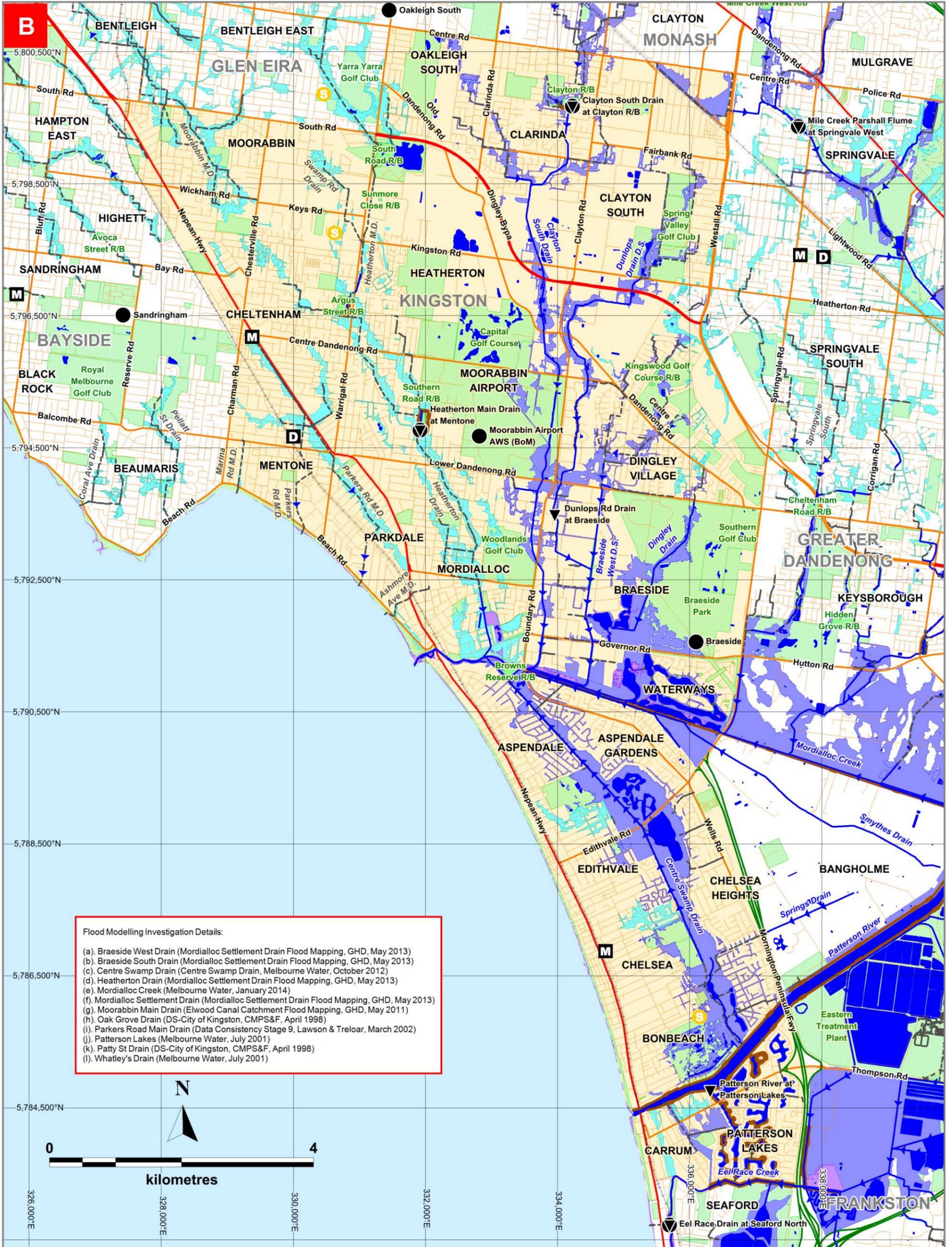
- Flood Mapping Index**
- 1 Moorabbin Main Drain (Moorabbin)
  - 2 Heatherton Drain (Heatherton)
  - 3 Parkers Rd Main Drain & Heatherton Drain (Mentone)
  - 4 Mordialloc Creek (Mordialloc)
  - 5 Clayton South Drain (Clayton South)
  - 6 Braeside West Drain (Dingley Village)
  - 7 Braeside West Drain (Braeside)
  - 8 Mordialloc Creek (Waterways)
  - 9 Centre Swamp Drain (Edithvale)
  - 10 Patterson River (Patterson Lakes)

- Flood Modelling Investigation Details:**
- (a). Braeside West Drain (Mordialloc Settlement Drain Flood Mapping, GHD, May 2013)
  - (b). Braeside South Drain (Mordialloc Settlement Drain Flood Mapping, GHD, May 2013)
  - (c). Centre Swamp Drain (Centre Swamp Drain, Melbourne Water, October 2012)
  - (d). Heatherton Drain (Mordialloc Settlement Drain Flood Mapping, GHD, May 2013)
  - (e). Mordialloc Creek (Melbourne Water, January 2014)
  - (f). Mordialloc Settlement Drain (Mordialloc Settlement Drain Flood Mapping, GHD, May 2013)
  - (g). Moorabbin Main Drain (Elwood Canal Catchment Flood Mapping, GHD, May 2011)
  - (h). Oak Grove Drain (DS-City of Kingston, CMPS&F, April 1998)
  - (i). Parkers Road Main Drain (Data Consistency Stage 9, Lawson & Treloar, March 2002)
  - (j). Patterson Lakes (Melbourne Water, July 2001)
  - (k). Patty St Drain (DS-City of Kingston, CMPS&F, April 1998)
  - (l). Whatley's Drain (Melbourne Water, July 2001)

**CITY OF KINGSTON**  
Version 3: September 2017  
**A - Flood Mapping Index Map**

- |                              |                                  |                   |
|------------------------------|----------------------------------|-------------------|
| 1% AEP Riverine Flood Extent | Flood Map Border                 | River Level Gauge |
| 1% AEP Flash Flood Extent    | Melbourne Water Stormwater Drain | Rain Gauge        |
| Reserve / Area of Interest   | Levee / Embankment               | SES LHQ           |
| 1% AEP Storm Surge Extent    | River / Creek                    |                   |
| Waterbody / Reservoir        |                                  |                   |





Flood Modelling Investigation Details:

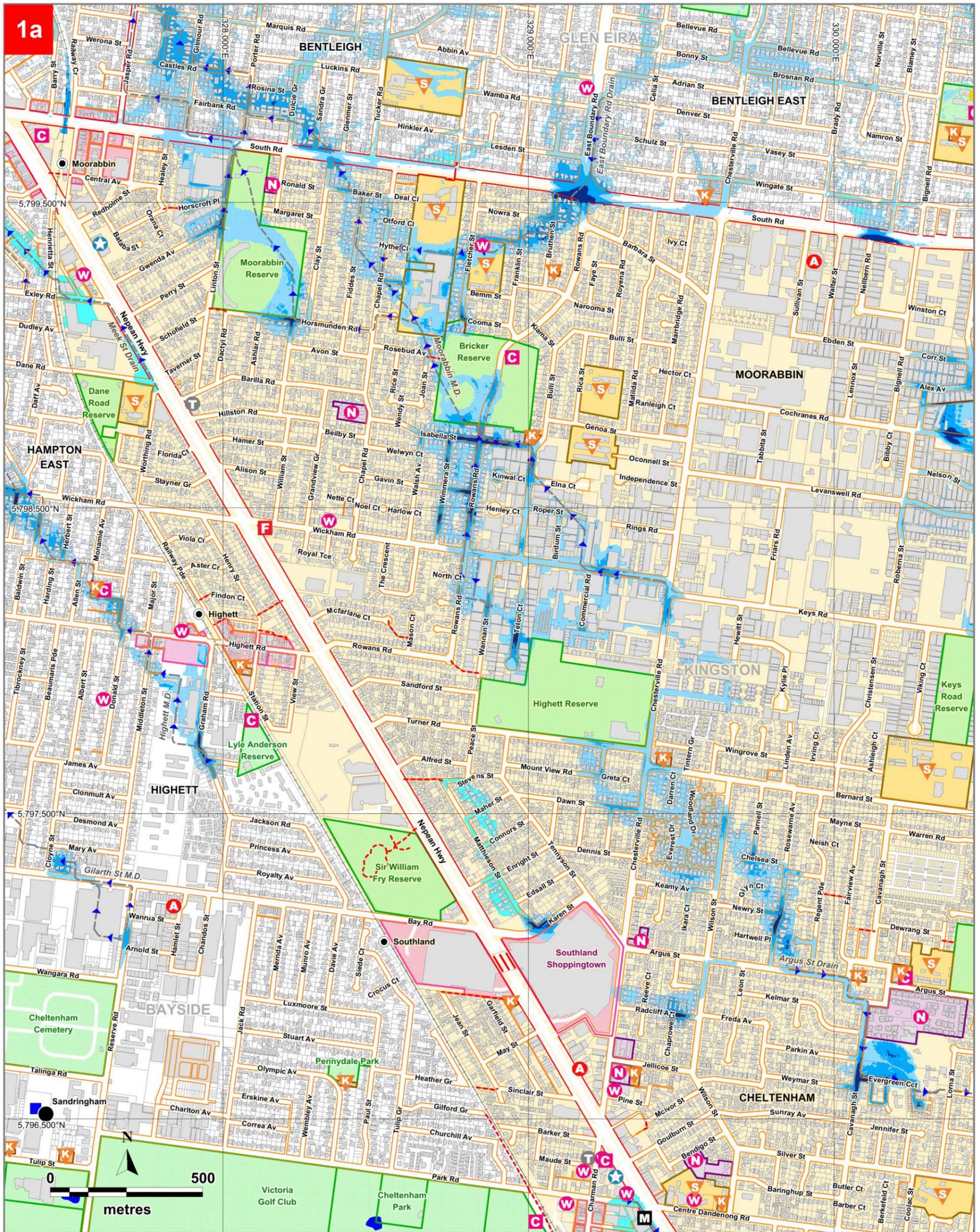
- (a). Braeside West Drain (Mordialloc Settlement Drain Flood Mapping, GHD, May 2013)
- (b). Braeside South Drain (Mordialloc Settlement Drain Flood Mapping, GHD, May 2013)
- (c). Centre Swamp Drain (Centre Swamp Drain, Melbourne Water, October 2012)
- (d). Heatherton Drain (Mordialloc Settlement Drain Flood Mapping, GHD, May 2013)
- (e). Mordialloc Creek (Melbourne Water, January 2014)
- (f). Mordialloc Settlement Drain (Mordialloc Settlement Drain Flood Mapping, GHD, May 2013)
- (g). Moorabbin Main Drain (Elwood Canal Catchment Flood Mapping, GHD, May 2011)
- (h). Oak Grove Drain (DS-City of Kingston, CMPS&F, April 1998)
- (i). Parkers Road Main Drain (Data Consistency Stage 9, Lawson & Treloar, March 2002)
- (j). Patterson Lakes (Melbourne Water, July 2001)
- (k). Patty St Drain (DS-City of Kingston, CMPS&F, April 1998)
- (l). Whatley's Drain (Melbourne Water, July 2001)

**CITY OF KINGSTON**  
 Version 3: September 2017  
**B - 1% AEP (100yr ARI) Flood Extent**

- 1% AEP Riverine Flood Extent
- 1% AEP Flash Flood Extent
- Reserve / Area of Interest
- 1% AEP Storm Surge Extent
- Waterbody / Reservoir
- River Level Gauge
- Rain Gauge
- M Municipal Building
- D Municipal Depot
- S SES LHQ
- River / Creek
- Melbourne Water Retarding Basin
- Melbourne Water Stormwater Drain
- Levee / Embankment

This map 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.

# Flood Extent Maps (sourced Melbourne Water GIS)



Flood Modelling completed by Melbourne Water & GHD, May 2011 - May 2013. Map Produced by VicSES September 2017.

## CITY OF KINGSTON

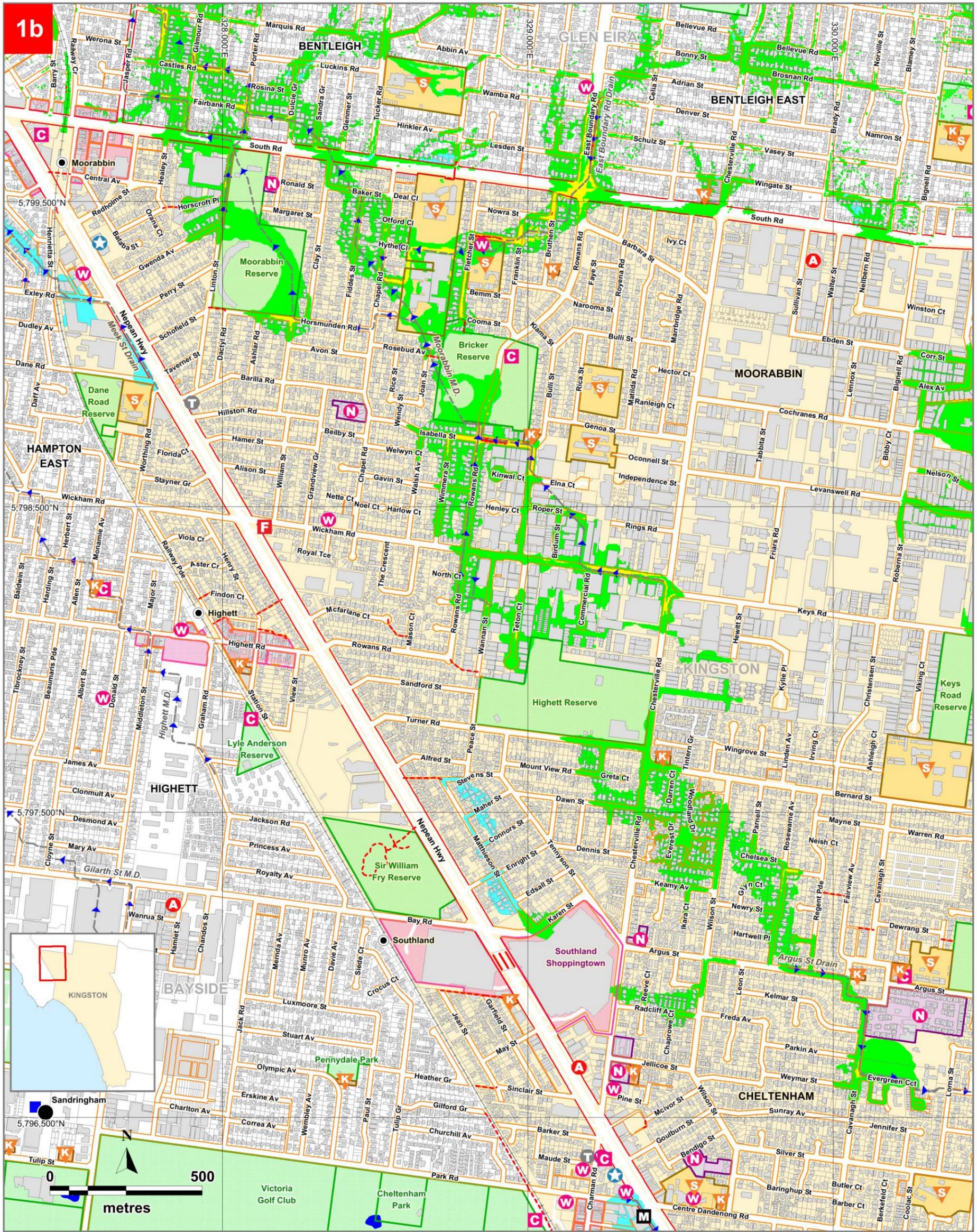
1% AEP (100yr ARI) Flooding (Depth)

### 1a. Moorabbin Main Drain (Moorabbin)

- |   |                                  |                    |
|---|----------------------------------|--------------------|
| Building                                      | Bicycle / Walking Trail          | Ambulance Station  |
| Area of Interest                              | Melbourne Water Stormwater Drain | MFB Fire Station   |
| 1% AEP Flash Flood Extent (Depth Unavailable) | School / College                 | Municipal Offices  |
| Waterbody                                     | Kindergarten / Child Care        | Telephone Exchange |
| Shopping Precinct                             | Community Centre                 | Police Station     |
| 1% AEP Flash Flood Depth Greater than 0.6m    | Nursing Home / Aged Care         | Rain Gauge         |
| 1% AEP Flash Flood Depth 0.3m to 0.6m         | Place of Worship                 |                    |
| 1% AEP Flash Flood Depth Up to 0.3m           |                                  |                    |



This map 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.



Flood Modelling completed by Melbourne Water & GHD, May 2011 - May 2013. Map Produced by VicSES September 2017.

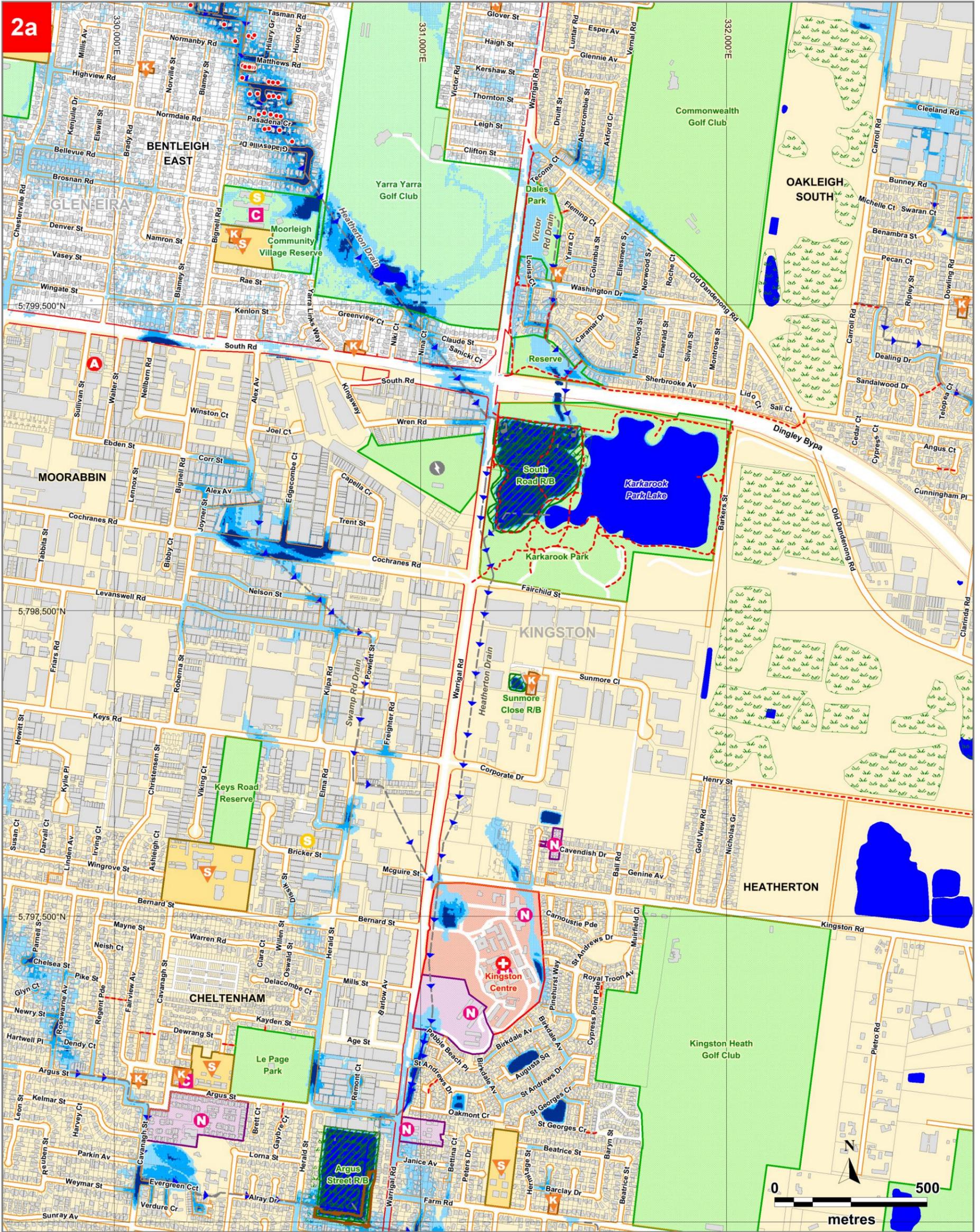
**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Hazard)  
 1b. Moorabbin Main Drain (Moorabbin)

- |  |                                  |                    |
|--|----------------------------------|--------------------|
| Building                                       | Shopping Precinct                | Ambulance Station  |
| Area of Interest                               | Bicycle / Walking Trail          | MFB Fire Station   |
| 1% AEP Flash Flood Extent (Hazard Unavailable) | Melbourne Water Stormwater Drain | Municipal Offices  |
| Waterbody                                      | School / College                 | Telephone Exchange |
| 1% AEP Flood Hazard* Extreme                   | Kindergarten / Child Care        | Police Station     |
| Significant                                    | Community Centre                 | Rain Gauge         |
| Moderate                                       | Nursing Home / Aged Care         |                    |
| Low  | Place of Worship                 |                    |

**\*Flood Hazard Information**  
 Source: Flood Hazard & Population at Risk: Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retallick M, Testoni I, (Editors) Australian Rainfall and Runoff: A Guide to Flood Estimation, © Commonwealth of Australia (Geoscience Australia), 2016.  
 Flood Hazard is derived based on the combination of Velocity (V) and Depth (D) of floodwaters.  
 Flood Hazard categories:  
 - Low hazard zones where  $D.V < 0.4m^3s^{-1}$   
 - Moderate hazard zone where  $D.V$  is between  $0.4$  to  $0.8m^3s^{-1}$ . This is the suggested working limit for experienced personnel such as trained rescue workers;  
 - Significant hazard zone where  $D.V = 0.8$  to  $1.2m^3s^{-1}$ ; and  
 - Extreme hazard where  $D.V > 1.2m^3s^{-1}$ .



This map 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.



Flood Modelling completed by Melbourne Water & GHD, May 2011 - May 2013. Map Produced by VicSES September 2017.

### CITY OF KINGSTON

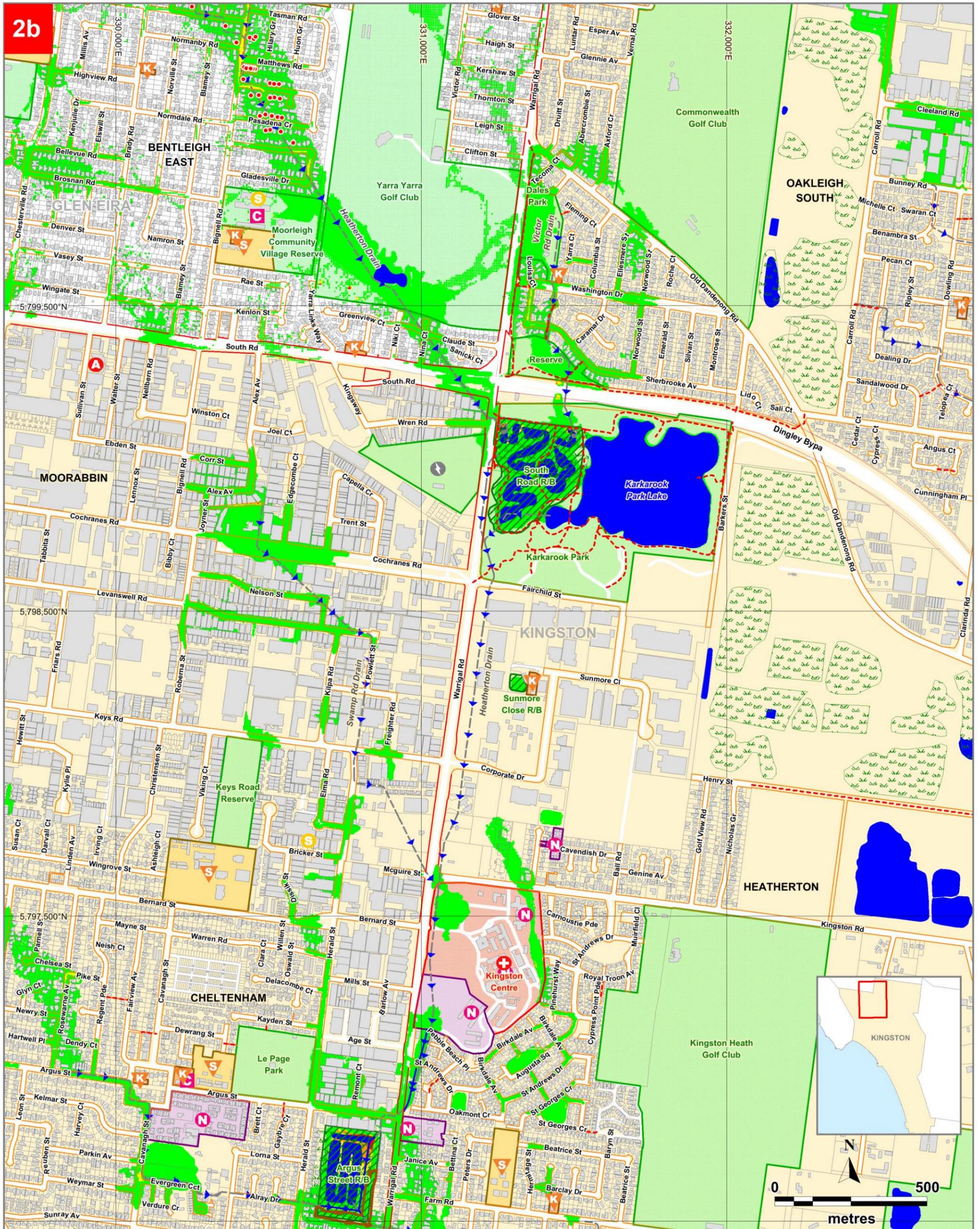
1% AEP (100yr ARI) Flooding (Depth)

#### 2a. Heatherton Drain (Heatherton)

- |  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |



This map 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.



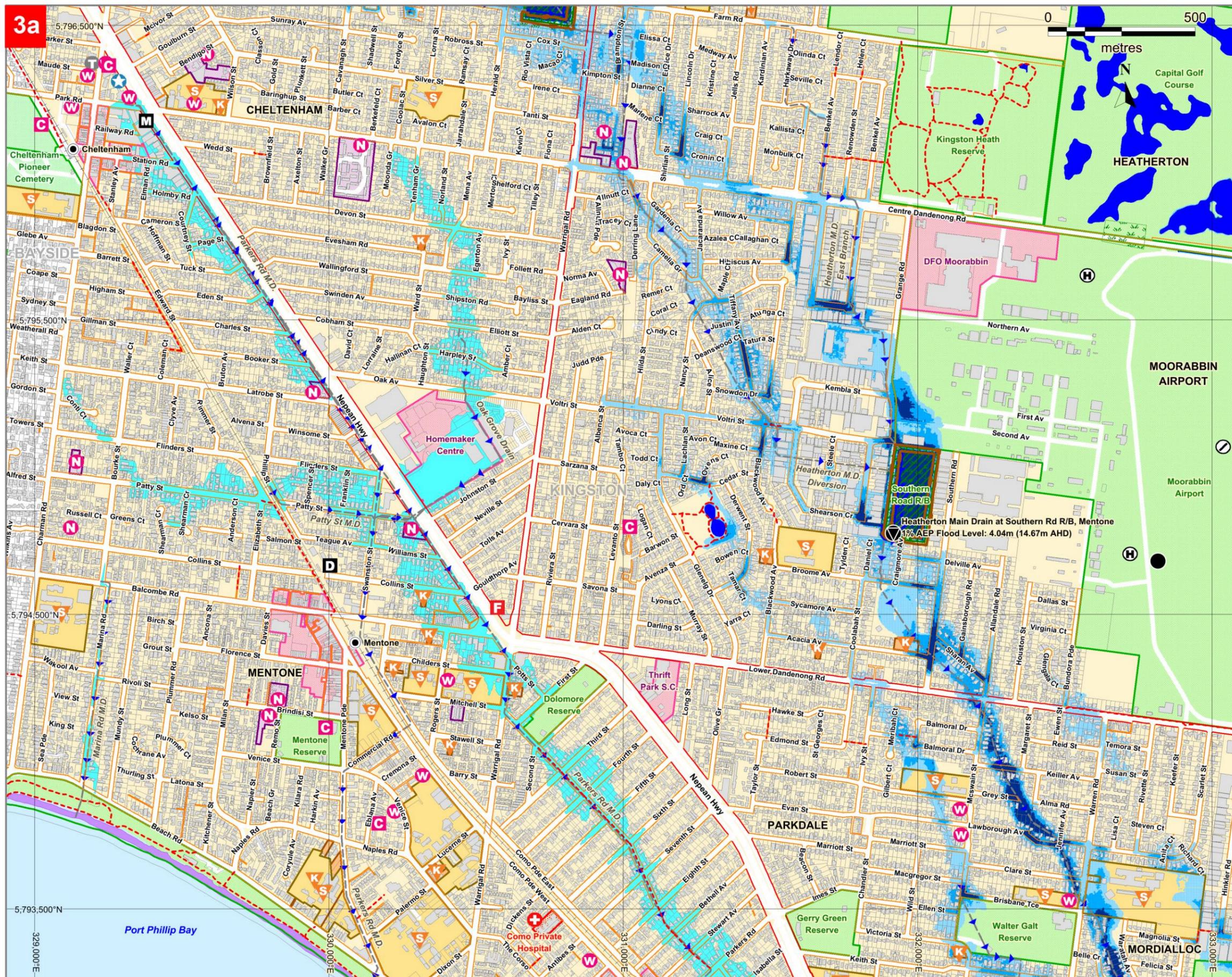
Flood Modelling completed by Melbourne Water & GHD, May 2011 - May 2013. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Hazard)  
**2b. Heatherton Drain (Heatherton)**

- |  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**\*Flood Hazard Information**  
 Source: Flood Hazard & Population at Risk: Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retallick M, Testoni I, (Editors) Australian Rainfall and Runoff: A Guide to Flood Estimation. © Commonwealth of Australia (Geoscience Australia), 2016.  
 Flood Hazard is derived based on the combination of Velocity (V) and Depth (D) of floodwaters.  
 Flood Hazard categories:  
 - Low hazard zones where  $D.V < 0.4m^2s^{-1}$ ;  
 - Moderate hazard zone where  $D.V$  is between  $0.4$  to  $0.8m^2s^{-1}$ .  
 This is the suggested working limit for experienced personnel such as trained rescue workers;  
 - Significant hazard zone where  $D.V = 0.8$  to  $1.2m^2s^{-1}$ ; and  
 - Extreme hazard where  $D.V > 1.2m^2s^{-1}$ .

This map 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.



- Building
- Area of Interest
- 1% AEP Flood Depth**
- Greater than 0.6m
- 0.3m to 0.6m
- Up to 0.3m
- Waterbody
- 1% AEP Flash Flood Extent (Depth Unavailable)
- 1% AEP Storm Surge Extent (Depth Unavailable)
- Shopping Precinct
- Natural Wetland
- Melbourne Water Retarding Basin
- Melbourne Water Stormwater Drain
- Creek / Waterway
- Bicycle / Walking Trail
- Levee / Embankment
- School / College
- Kindergarten / Child Care
- Place of Worship
- Nursing Home / Aged Care
- Community Centre
- Telephone Exchange
- Rain Gauge
- Airport / Airfield
- Helipad
- Hospital
- Police Station

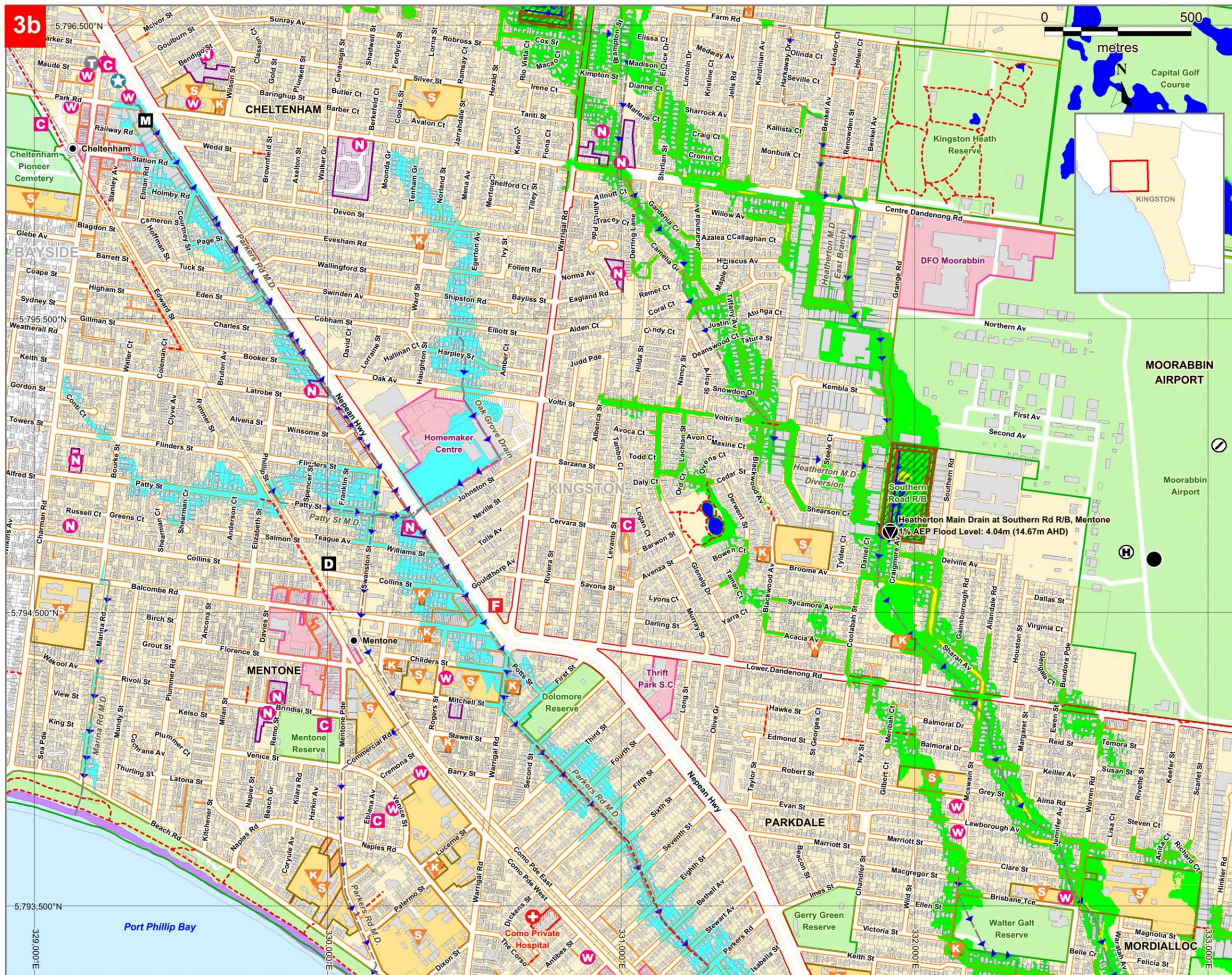


**CITY OF KINGSTON**  
 1% AEP (100yr ARI)  
 Flooding (Depth)  
**3a. Parkers Rd Main Drain & Heatherton Drain (Mentone)**



This map 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.

Heatherton Drain Flood Modelling completed by Melbourne Water & GHD, May 2013. Parkers Rd Main Drain flood modelling completed by Melbourne Water & Lawson & Treloar, March 2002. Map Produced by VicSES September 2017.



- Building
- Area of Interest
- 1% AEP Flood Hazard\***
- Extreme
- Significant
- Moderate
- Low
- Waterbody
- 1% AEP Flash Flood Extent (Hazard Unavailable)
- 1% AEP Storm Surge Extent (Hazard Unavailable)
- Shopping Precinct
- Natural Wetland
- Melbourne Water Retarding Basin
- Melbourne Water Stormwater Drain
- Creek / Waterway
- Bicycle / Walking Trail
- Levee / Embankment
- School / College
- Kindergarten / Child Care
- Place Of Worship
- Nursing Home / Aged Care
- Community Centre
- Telephone Exchange
- Rain Gauge
- Airport / Airfield
- Helipad
- Hospital
- Police Station

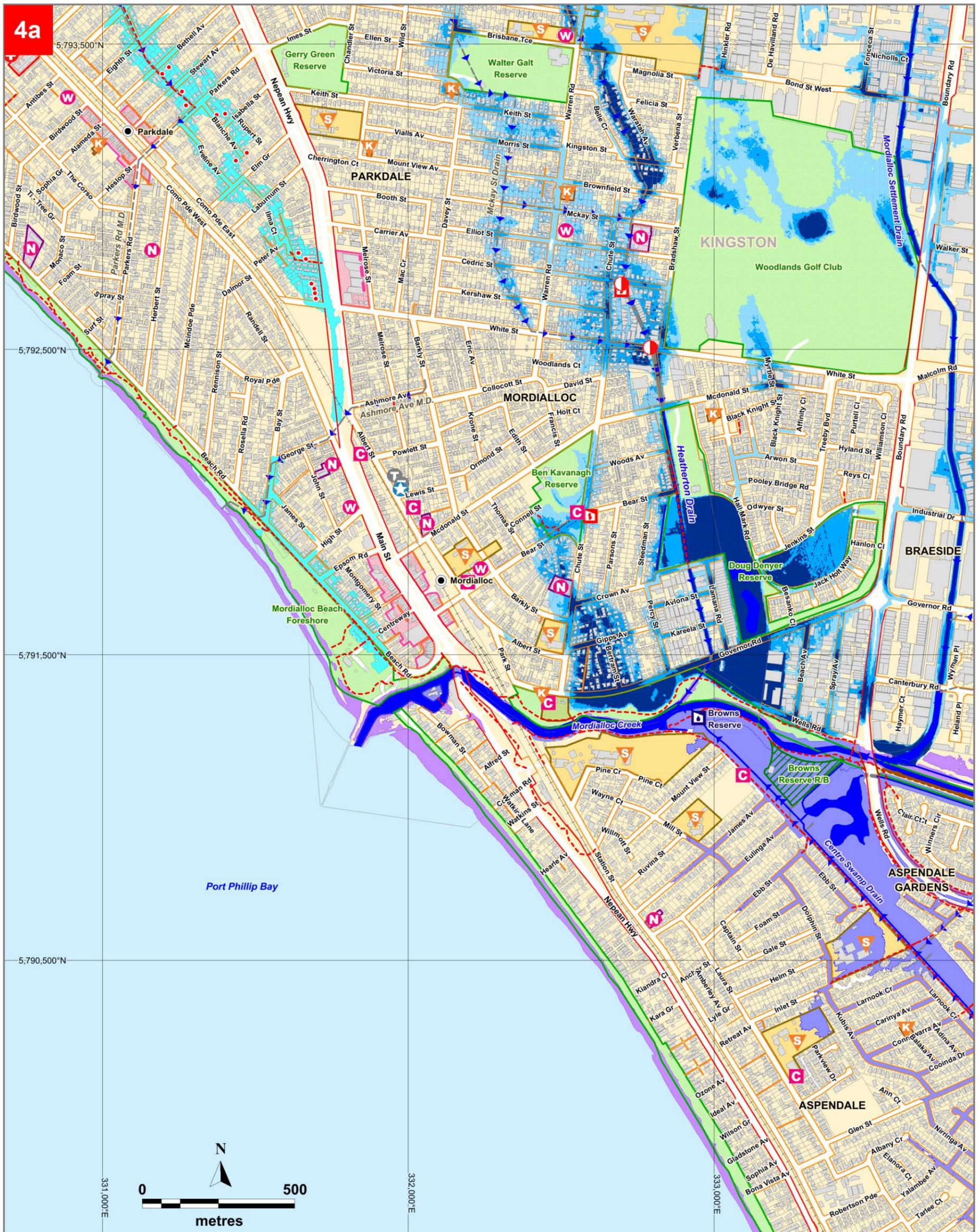
**\*Flood Hazard Information**  
 Source: Flood Hazard & Population at Risk: Ball J, Babister M, Nathan R, Weeks W, Weirmann E, Retalick M, Testoni I, (Editors) Australian Rainfall and Runoff: A Guide to Flood Estimation, © Commonwealth of Australia (Geoscience Australia), 2016.  
 Flood Hazard is derived based on the combination of Velocity (V) and Depth (D) of floodwaters.  
 Flood Hazard categories:  
 - Low hazard zone where  $D.V < 0.4m^2s^{-1}$   
 - Moderate hazard zone where  $D.V$  is between  $0.4$  to  $0.8m^2s^{-1}$ . This is the suggested working limit for experienced personnel such as trained rescue workers;  
 - Significant hazard zone where  $D.V = 0.8$  to  $1.2m^2s^{-1}$ ; and  
 - Extreme hazard zone where  $D.V > 1.2m^2s^{-1}$ .

**CITY OF KINGSTON**  
 1% AEP (100yr ARI)  
 Flooding (Hazard)  
**3b. Parkers Rd Main Drain & Heatherton Drain (Mentone)**



This map 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.

Heatherton Drain Flood Modelling completed by Melbourne Water & GHD, May 2013. Parkers Rd Main Drain flood modelling completed by Melbourne Water & Lawson & Treloar, March 2002. Map Produced by VicSES September 2017.



Centre Swamp Drain flood modelling completed by Melbourne Water, Oct 2012. Heatheron Drain & Mordialloc Settlement Drain flood mapping completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Depth)  
**4a. Mordialloc Creek (Mordialloc)**

- |  |                                  |                                  |
|--|----------------------------------|----------------------------------|
| Building   | <b>1% AEP Flood Depth</b>        | Community Centre                 |
| Area of Interest                                 | Greater than 0.6m                | Nursing Home / Aged Care         |
| Waterbody  | 0.3m to 0.6m                     | Place Of Worship                 |
| Melbourne Water Retarding Basin                  | Up to 0.3m                       | Drainage Pumping Station         |
| 1% AEP Flash Flood Extent (Depth Unavailable)    | Bicycle / Walking Trail          | Sewer Pumping Station            |
| 1% AEP Riverine Flood Extent (Depth Unavailable) | Melbourne Water Stormwater Drain | Sewer Emergency Relief Structure |
| 1% AEP Storm Surge Extent (Depth Unavailable)    | School / College                 | Telephone Exchange               |
| Levee / Embankment                               | Kindergarten / Child Care        | Police Station                   |
| River / Channel                                  | Hospital                         |                                  |



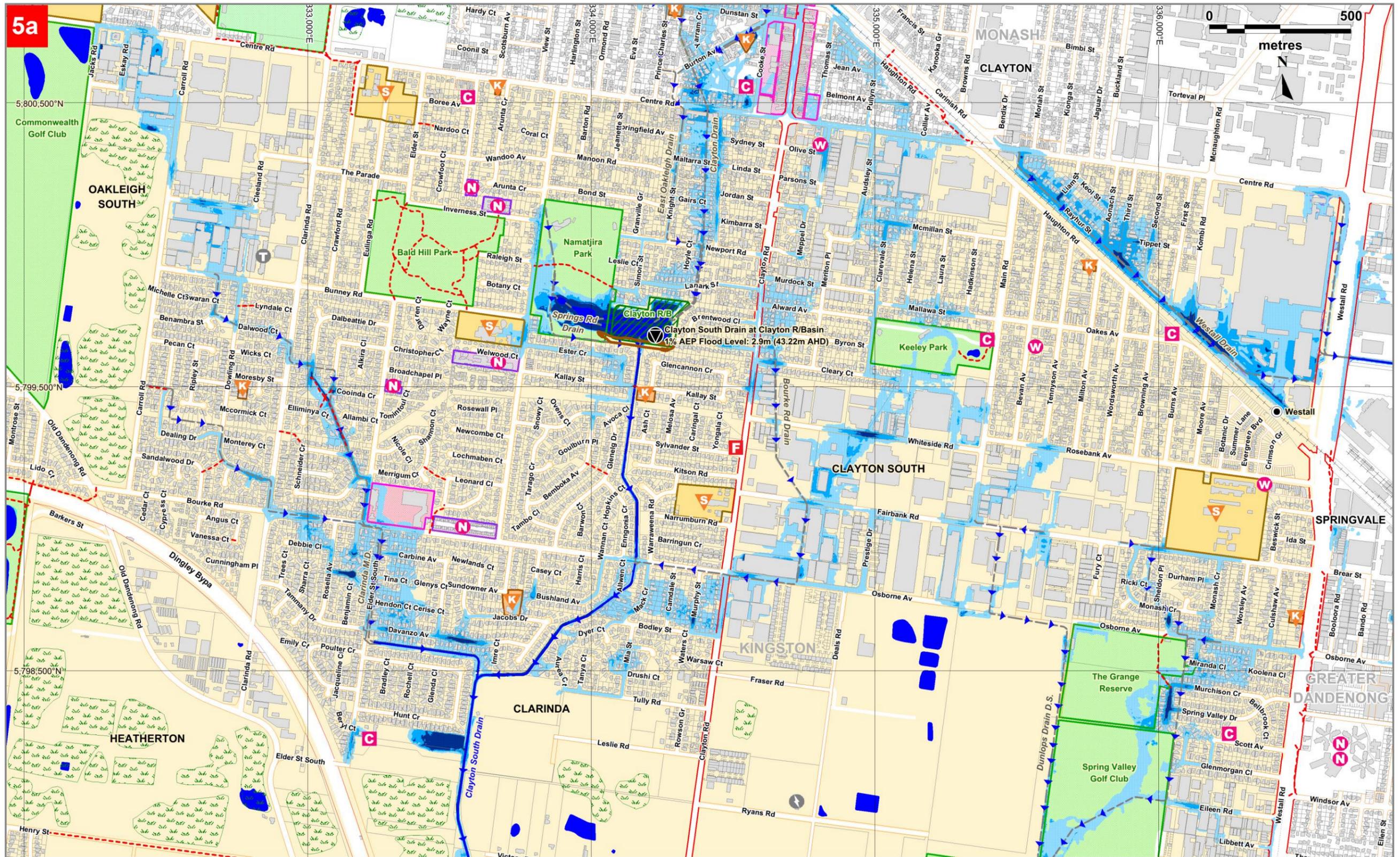
**SES** **Victoria** **Melbourne Water**

This map 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.



Centre Swamp Drain flood modelling completed by Melbourne Water, Oct 2012. Heatherton Drain & Mordialloc Settlement Drain flood mapping completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

<p><b>CITY OF KINGSTON</b></p> <p>1% AEP (100yr ARI) Flooding (Hazard)</p> <p><b>4b. Mordialloc Creek (Mordialloc)</b></p>	<table border="0"> <tr> <td></td> <td>Building</td> <td></td> <td>1% AEP Flood Hazard* Extreme</td> <td></td> <td>Community Centre</td> <td></td> <td>Hospital</td> </tr> <tr> <td></td> <td>Area of Interest</td> <td></td> <td>Significant</td> <td></td> <td>Nursing Home / Aged Care</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Waterbody</td> <td></td> <td>Moderate</td> <td></td> <td>Place Of Worship</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Melbourne Water Retarding Basin</td> <td></td> <td>Low</td> <td></td> <td>Drainage Pumping Station</td> <td></td> <td></td> </tr> <tr> <td></td> <td>1% AEP Flash Flood Extent (Hazard Unavailable)</td> <td></td> <td>Bicycle / Walking Trail</td> <td></td> <td>Sewer Pumping Station</td> <td></td> <td></td> </tr> <tr> <td></td> <td>1% AEP Riverine Flood Extent (Hazard Unavailable)</td> <td></td> <td>Melbourne Water Stormwater Drain</td> <td></td> <td>Sewer Emergency Relief Structure</td> <td></td> <td></td> </tr> <tr> <td></td> <td>1% AEP Storm Surge Extent (Hazard Unavailable)</td> <td></td> <td>School / College</td> <td></td> <td>Telephone Exchange</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Levee / Embankment</td> <td></td> <td>Kindergarten / Child Care</td> <td></td> <td>Police Station</td> <td></td> <td></td> </tr> <tr> <td></td> <td>River / Channel</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Building		1% AEP Flood Hazard* Extreme		Community Centre		Hospital		Area of Interest		Significant		Nursing Home / Aged Care				Waterbody		Moderate		Place Of Worship				Melbourne Water Retarding Basin		Low		Drainage Pumping Station				1% AEP Flash Flood Extent (Hazard Unavailable)		Bicycle / Walking Trail		Sewer Pumping Station				1% AEP Riverine Flood Extent (Hazard Unavailable)		Melbourne Water Stormwater Drain		Sewer Emergency Relief Structure				1% AEP Storm Surge Extent (Hazard Unavailable)		School / College		Telephone Exchange				Levee / Embankment		Kindergarten / Child Care		Police Station				River / Channel							<p><b>*Flood Hazard Information</b></p> <p>Source: Flood Hazard &amp; Population at Risk: Ball J, Babister M, Nathan R, Weeks W, Weimann E, Retallick M, Testoni I, (Editors) Australian Rainfall and Runoff: A Guide to Flood Estimation, © Commonwealth of Australia (Geoscience Australia), 2016.</p> <p>Flood Hazard is derived based on the combination of Velocity (V) and Depth (D) of floodwaters.</p> <p>Flood Hazard categories:</p> <ul style="list-style-type: none"> <li>- Low hazard zones where <math>D.V &lt; 0.4m^2s^{-1}</math>;</li> <li>- Moderate hazard zone where <math>D.V</math> is between <math>0.4</math> to <math>0.8m^2s^{-1}</math>.</li> </ul> <p>This is the suggested working limit for experienced personnel such as trained rescue workers.</p> <ul style="list-style-type: none"> <li>- Significant hazard zone where <math>D.V = 0.8</math> to <math>1.2m^2s^{-1}</math>; and</li> <li>- Extreme hazard where <math>D.V &gt; 1.2m^2s^{-1}</math>.</li> </ul>	<p>This map 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.</p>
	Building		1% AEP Flood Hazard* Extreme		Community Centre		Hospital																																																																				
	Area of Interest		Significant		Nursing Home / Aged Care																																																																						
	Waterbody		Moderate		Place Of Worship																																																																						
	Melbourne Water Retarding Basin		Low		Drainage Pumping Station																																																																						
	1% AEP Flash Flood Extent (Hazard Unavailable)		Bicycle / Walking Trail		Sewer Pumping Station																																																																						
	1% AEP Riverine Flood Extent (Hazard Unavailable)		Melbourne Water Stormwater Drain		Sewer Emergency Relief Structure																																																																						
	1% AEP Storm Surge Extent (Hazard Unavailable)		School / College		Telephone Exchange																																																																						
	Levee / Embankment		Kindergarten / Child Care		Police Station																																																																						
	River / Channel																																																																										



Flood Modelling completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

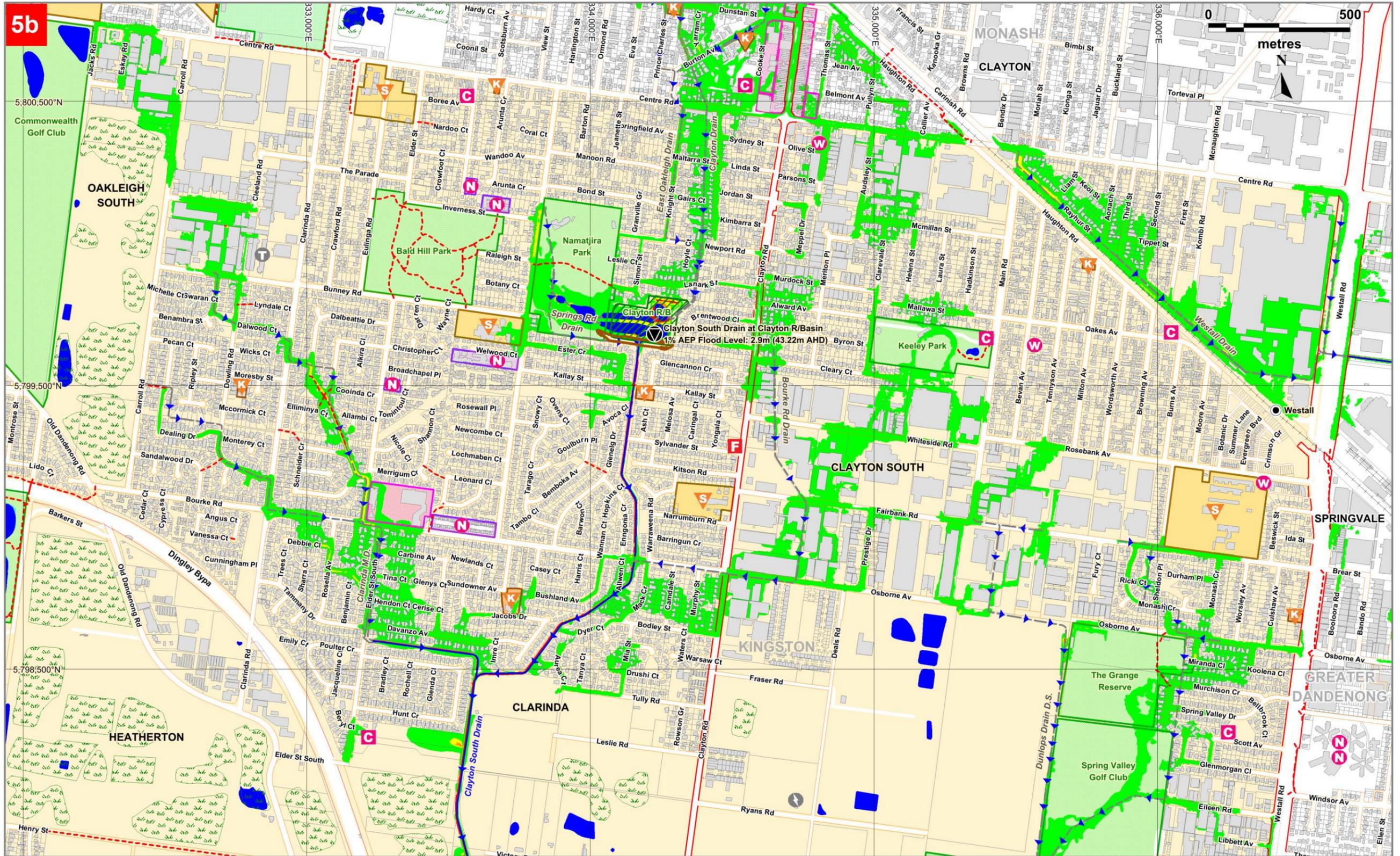
**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Depth)  
**5a. Clayton South Drain**  
**(Clayton South)**

- |                                 |                                  |                           |   |
|---------------------------------|----------------------------------|---------------------------|---|
| Building                        | Greater than 0.6m                | Bicycle / Walking Trail   | Place Of Worship                        |
| Area of Interest                | 0.3m to 0.6m                     | School / College          | Telephone Exchange                      |
| Shopping Precinct               | Up to 0.3m                       | Kindergarten / Child Care | Power Terminal Station                  |
| Natural Wetland                 | Creek / Channel                  | MFB Fire Station          | Stream Level Gauge & 1% AEP Flood Level |
| Melbourne Water Retarding Basin | Melbourne Water Stormwater Drain | Community Centre          | Rain Gauge                              |
| Waterbody                       | Levee / Embankment               | Nursing Home / Aged Care  |   |



**SES Victoria** **Melbourne Water**

This map 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.



Flood Modelling completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

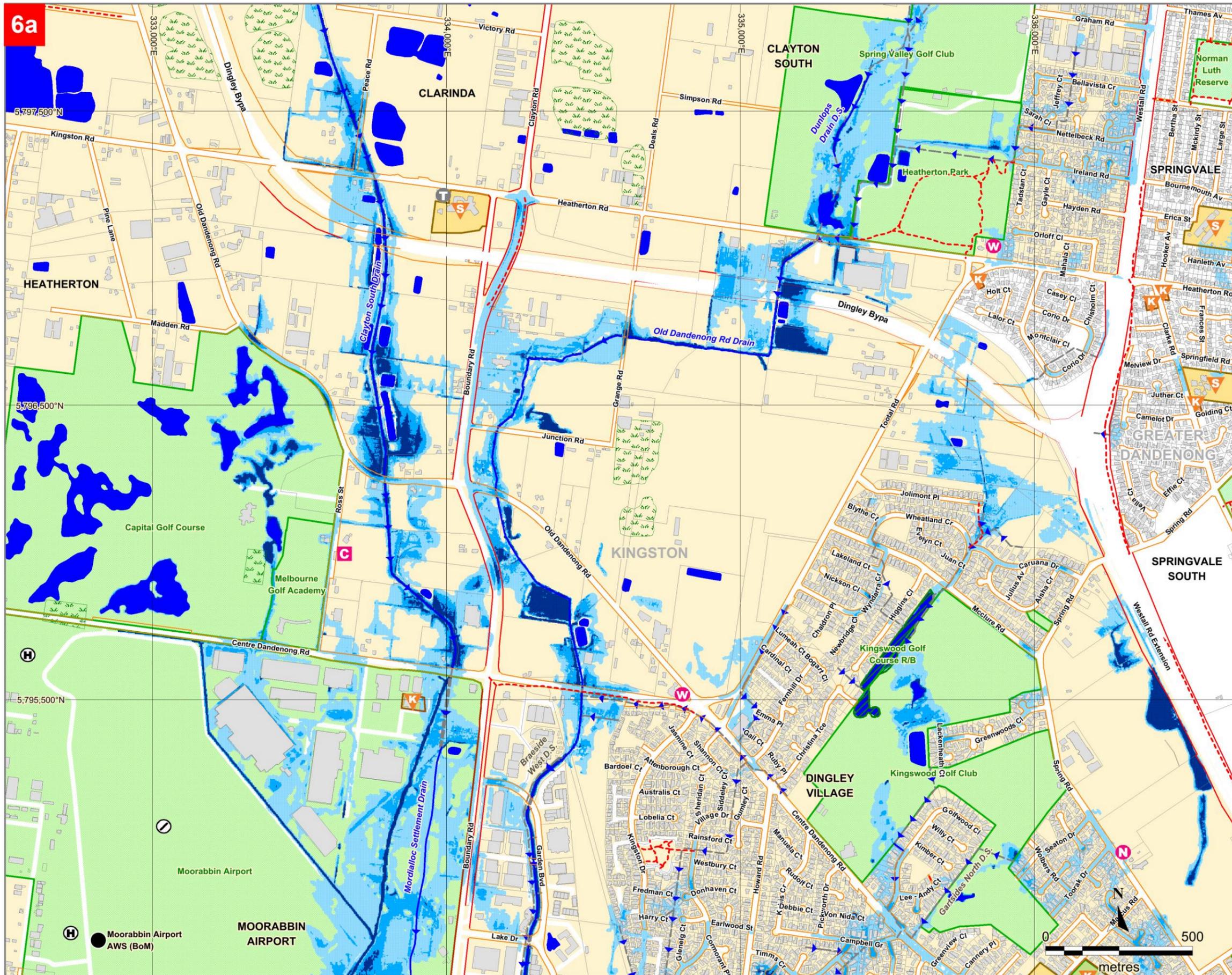
**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Hazard)  
**5b. Clayton South Drain**  
 (Clayton South)

- |                                 |                                  |                           |   |
|---------------------------------|----------------------------------|---------------------------|---|
| Building                        | 1% AEP Flood Hazard*<br>Extreme  | Bicycle / Walking Trail   | Place Of Worship                        |
| Area of Interest                | Significant                      | School / College          | Telephone Exchange                      |
| Shopping Precinct               | Moderate                         | Kindergarten / Child Care | Power Terminal Station                  |
| Natural Wetland                 | Low                              | MFB Fire Station          | Stream Level Gauge & 1% AEP Flood Level |
| Melbourne Water Retarding Basin | Creek / Channel                  | Community Centre          | Rain Gauge                              |
| Waterbody                       | Melbourne Water Stormwater Drain | Nursing Home / Aged Care  |   |
|                                 | Levee / Embankment               |                           |   |

**\* Flood Hazard**  
 Source: Flood Hazard & Population at Risk: Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retailick M, Testoni I, (Editors) Australian Rainfall and Runoff: A Guide to Flood Estimation. © Commonwealth of Australia (Geoscience Australia), 2016.  
 Flood Hazard is derived based on the combination of Velocity (V) and Depth (D) of floodwaters.  
 Flood Hazard categories:  
 - Low hazard zones where  $D.V < 0.4m^2s^{-1}$ ;  
 - Moderate hazard zone where  $D.V$  is between  $0.4$  to  $0.8m^2s^{-1}$ . This is the suggested working limit for experienced personnel such as trained rescue workers;  
 - Significant hazard zone where  $D.V = 0.8$  to  $1.2m^2s^{-1}$ ; and  
 - Extreme hazard where  $D.V > 1.2m^2s^{-1}$ .



This map 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.



Flood Modelling completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

- Building
- Area of Interest
- 1% AEP Flood Depth
  - Greater than 0.6m
  - 0.3m to 0.6m
  - Up to 0.3m
- Waterbody
- Natural Wetland
- Melbourne Water Retarding Basin
- Melbourne Water Stormwater Drain
- Creek / Waterway
- Bicycle / Walking Trail
- School / College
- Kindergarten / Child Care
- Place Of Worship
- Nursing Home / Aged Care
- Community Centre
- Telephone Exchange
- Rain Gauge
- Airport / Airfield
- Helipad



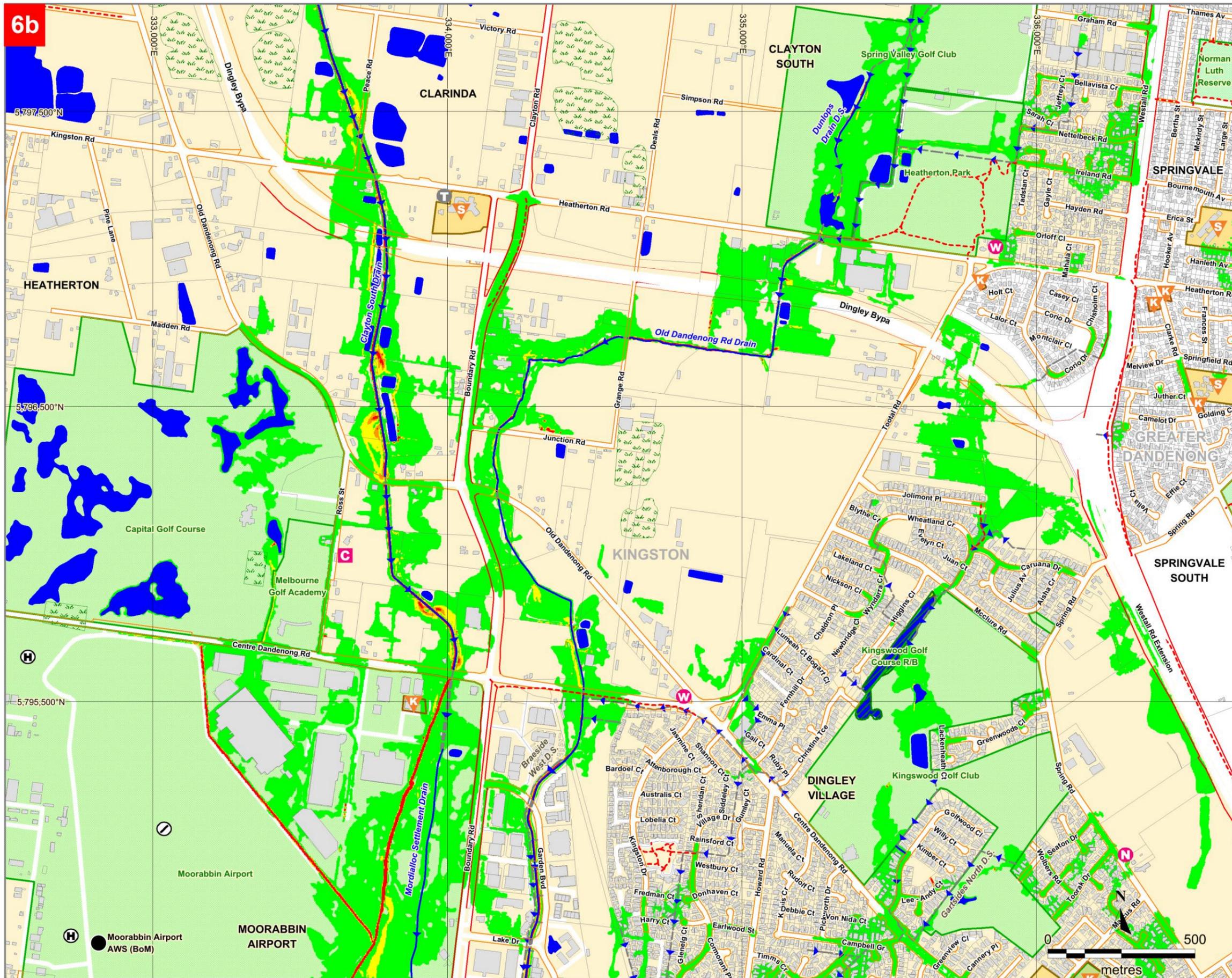
**CITY OF KINGSTON**

1% AEP (100yr ARI)  
Floods (Depth)

**6a. Braeside West Drain System (Dingley Village)**



This map 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.



- Building
- Area of Interest
- 1% AEP Flood Hazard\***
- Extreme
- Significant
- Moderate
- Low
- Waterbody
- Natural Wetland
- Melbourne Water Retarding Basin
- Melbourne Water Stormwater Drain
- Creek / Waterway
- Bicycle / Walking Trail
- School / College
- Kindergarten / Child Care
- Place Of Worship
- Nursing Home / Aged Care
- Community Centre
- Telephone Exchange
- Rain Gauge
- Airport / Airfield
- Helipad

**\*Flood Hazard Information**  
 Source: Flood Hazard & Population at Risk: Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retalick M, Testoni I, (Editors) Australian Rainfall and Runoff: A Guide to Flood Estimation, © Commonwealth of Australia (Geoscience Australia), 2016.  
 Flood Hazard is derived based on the combination of Velocity (V) and Depth (D) of floodwaters.  
 Flood Hazard categories:  
 - Low hazard zones where  $D.V < 0.4m^2s^{-1}$ ;  
 - Moderate hazard zone where  $D.V$  is between  $0.4$  to  $0.8m^2s^{-1}$ . This is the suggested working limit for experienced personnel such as trained rescue workers;  
 - Significant hazard zone where  $D.V = 0.8$  to  $1.2m^2s^{-1}$ ; and  
 - Extreme hazard where  $D.V > 1.2m^2s^{-1}$ .



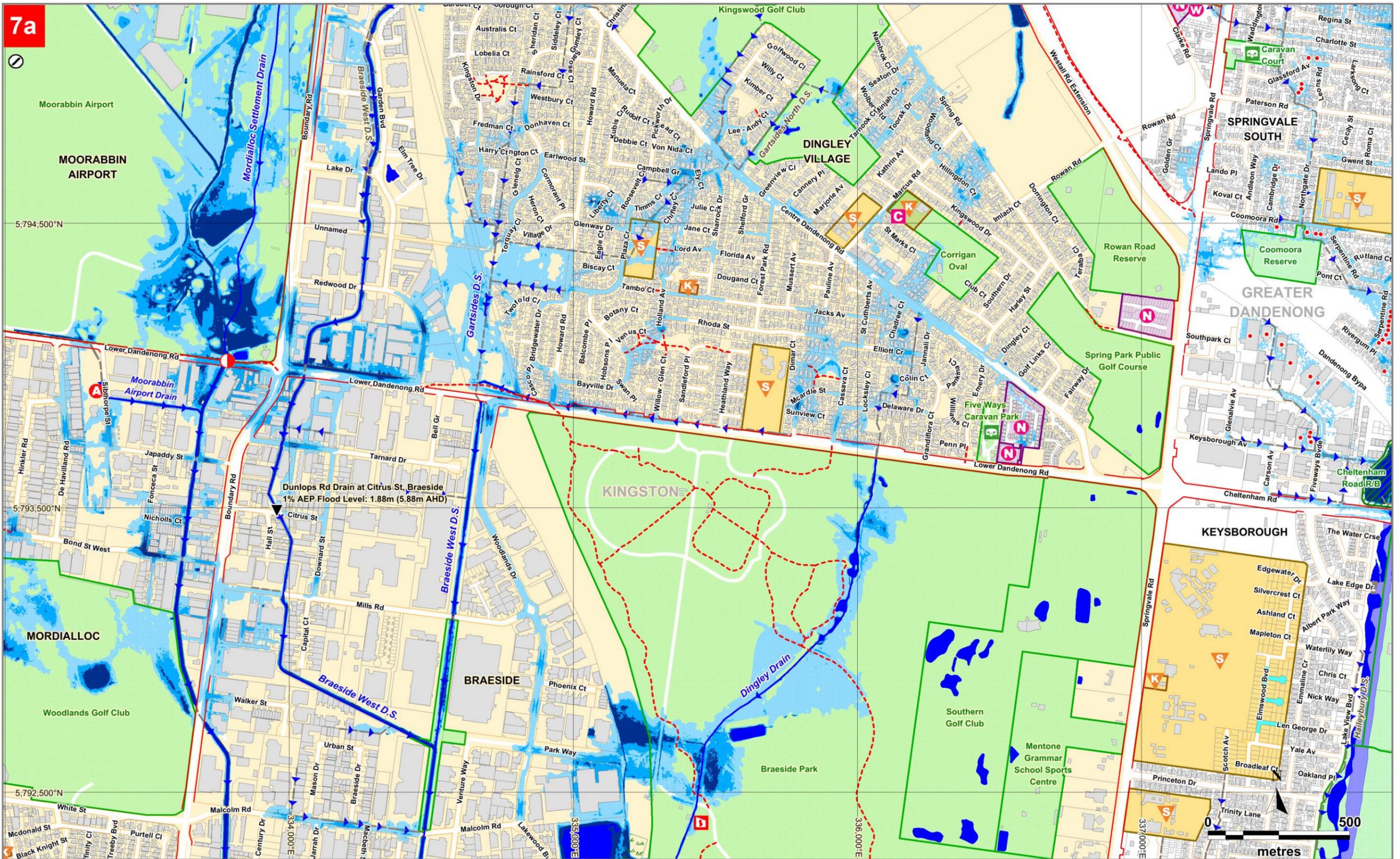
**CITY OF KINGSTON**

1% AEP (100yr ARI)  
 Flooding (Hazard)  
**6b. Braeside West Drain System (Dingley Village)**



This map 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.

Flood Modelling completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.



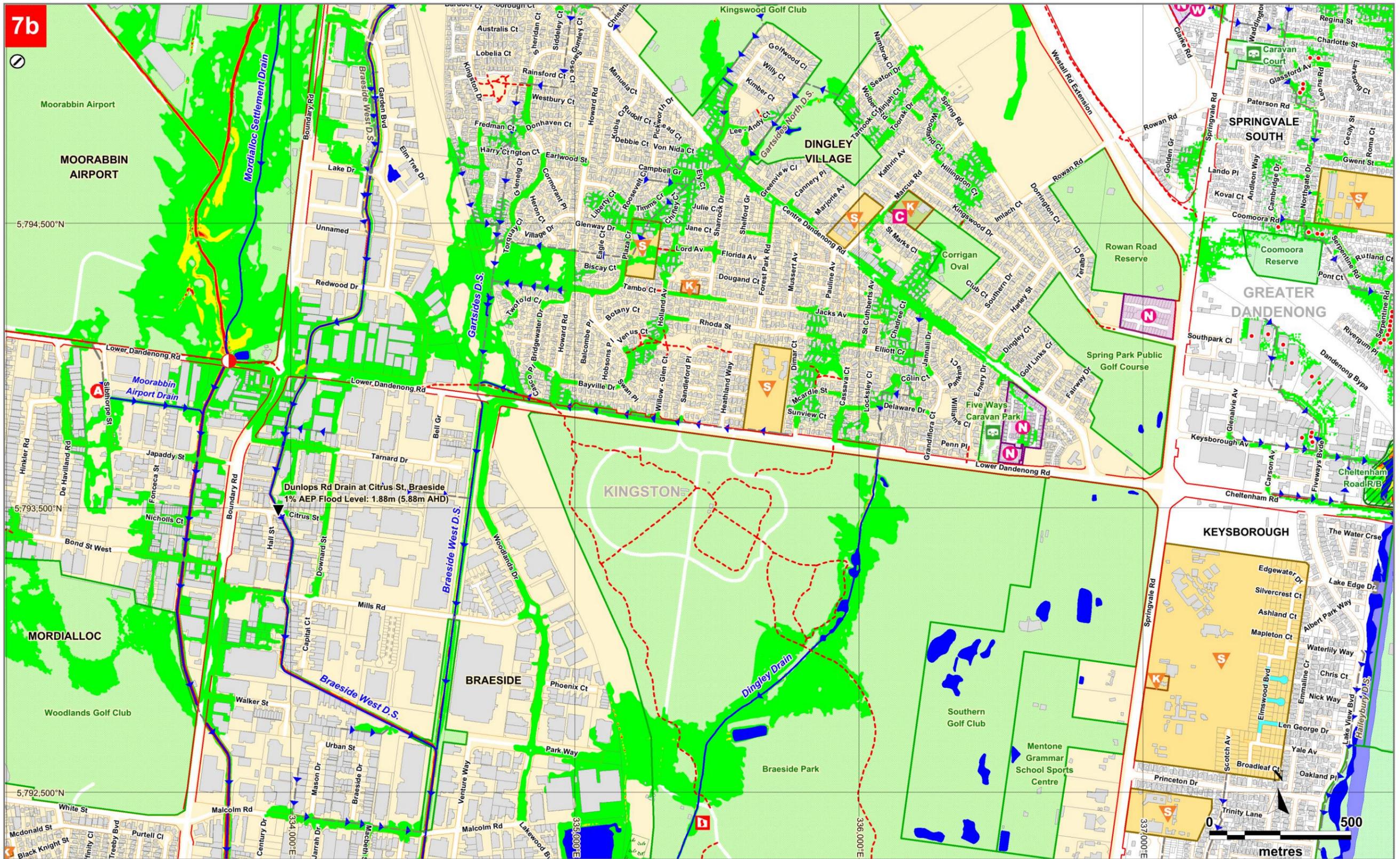
Flood modelling completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Depth)  
**7a. Braaside West Drain**  
**(Braaside)**

- |  |                                  |                           |                                  |
|--|----------------------------------|---------------------------|----------------------------------|
| Building   | Greater than 0.6m                | School / College          | Airport / Airfield               |
| Area of Interest                                 | 0.3m to 0.6m                     | Kindergarten / Child Care | Sewer Emergency Relief Structure |
| 1% AEP Riverine Flood Extent (Depth Unavailable) | Up to 0.3m                       | Place Of Worship          | Ambulance Station                |
| Natural Wetland                                  | Creek / Channel                  | Community Centre          | Sewer Pumping Station            |
| Melbourne Water Retarding Basin                  | Melbourne Water Stormwater Drain | Nursing Home / Aged Care  | 1% AEP Over-Floor Flooding Risk  |
| Waterbody  | Bicycle / Walking Trail          | Caravan Park              |                                  |



**Melbourne Water**  
 This map 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.



Flood modelling completed by Melbourne Water & GHD, May 2013. Map Produced by VicSES September 2017.

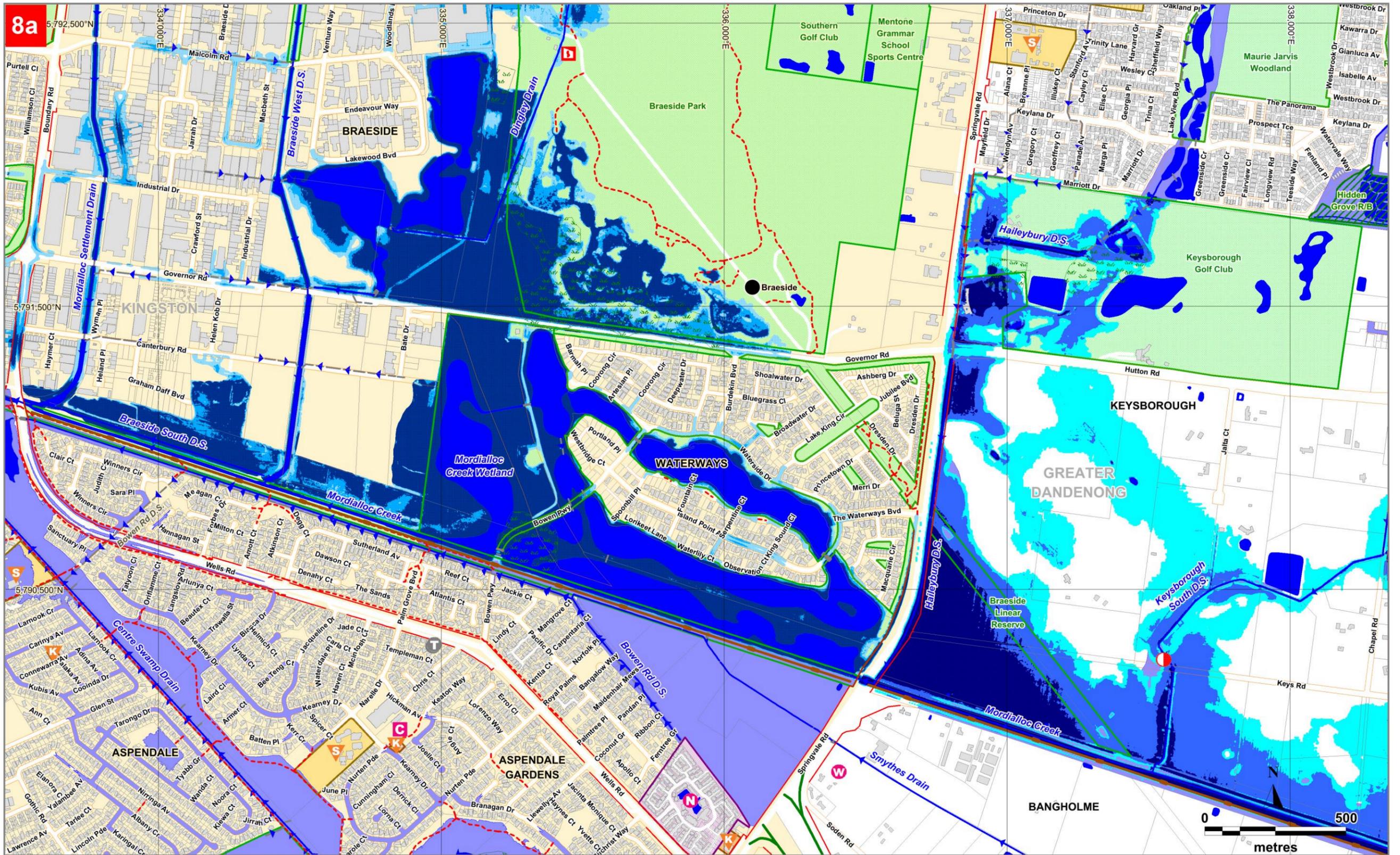
**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Hazard)  
**7b. Braaside West Drain**  
**(Braaside)**

- |  |                                  |                           |                                  |
|--|----------------------------------|---------------------------|----------------------------------|
| Building   | 1% AEP Flood Hazard*<br>Extreme  | School / College          | Airport / Airfield               |
| Area of Interest                                 | Significant                      | Kindergarten / Child Care | Sewer Emergency Relief Structure |
| 1% AEP Riverine Flood Extent (Depth Unavailable) | Moderate                         | Place Of Worship          | Ambulance Station                |
| Natural Wetland                                  | Low                              | Community Centre          | Sewer Pumping Station            |
| Melbourne Water Retarding Basin                  | Creek / Channel                  | Nursing Home / Aged Care  | 1% AEP Over-Floor Flooding Risk  |
| Waterbody  | Melbourne Water Stormwater Drain | Caravan Park              |                                  |
|  | Bicycle / Walking Trail          |                           |                                  |

**\*Flood Hazard Information**  
 Source: Flood Hazard & Population at Risk: Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retailick M, Testoni I, (Editors) Australian Rainfall and Runoff: A Guide to Flood Estimation, © Commonwealth of Australia (Geoscience Australia), 2016.  
 Flood Hazard is derived based on the combination of Velocity (V) and Depth (D) of floodwaters.  
 Flood Hazard categories:  
 - Low hazard zones where  $D.V < 0.4m^2s^{-1}$ ;  
 - Moderate hazard zone where  $D.V$  is between  $0.4$  to  $0.8m^2s^{-1}$ . This is the suggested working limit for experienced personnel such as trained rescue workers;  
 - Significant hazard zone where  $D.V = 0.8$  to  $1.2m^2s^{-1}$ ; and  
 - Extreme hazard where  $D.V > 1.2m^2s^{-1}$ .



**Melbourne Water**  
 This map 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.



Mordialloc Creek flood modelling completed by Melbourne Water Jan 2014. Braeside West flood modelling completed by Melbourne Water & GHD, May 2013. Centre Swamp Drain flood modelling completed by Melbourne Water, Oct 2012). Map Produced by VicSES September 2017.

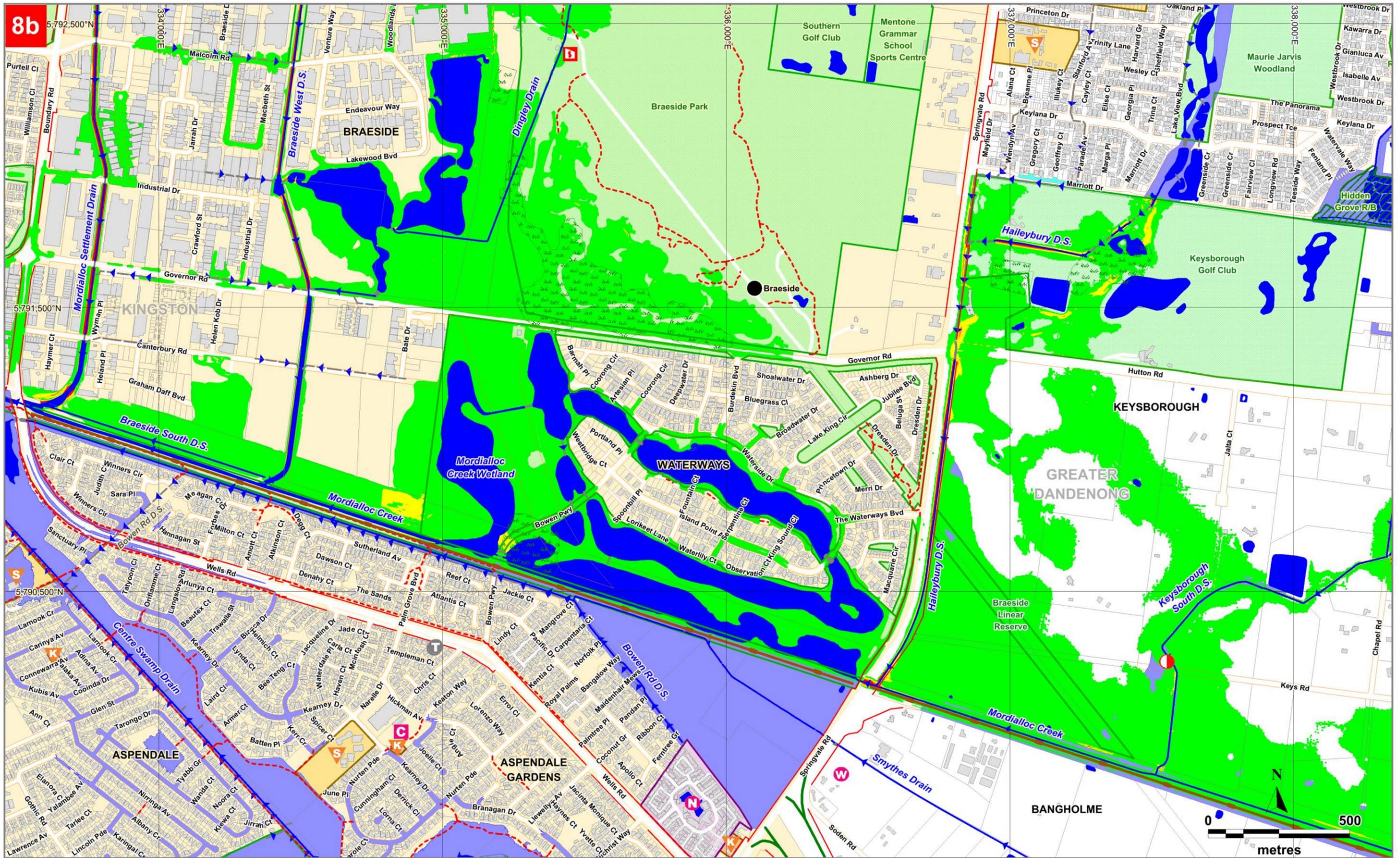
**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Depth)  
**8a. Mordialloc Creek (Waterways)**

- |  |                                  |                           |                                  |
|--|----------------------------------|---------------------------|----------------------------------|
| Building   | Greater than 0.6m                | Bicycle / Walking Trail   | Telephone Exchange               |
| Area of Interest                                 | 0.3m to 0.6m                     | School / College          | Sewer Emergency Relief Structure |
| 1% AEP Riverine Flood Extent (Depth Unavailable) | Up to 0.3m                       | Kindergarten / Child Care | Rain Gauge                       |
| Natural Wetland                                  | Creek / Channel                  | Place Of Worship          |                                  |
| Melbourne Water Retarding Basin                  | Melbourne Water Stormwater Drain | Community Centre          |                                  |
| Waterbody  | Levee / Embankment               | Nursing Home / Aged Care  |                                  |



**SES Victoria Melbourne Water**

This map 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.



Mordialloc Creek flood modelling completed by Melbourne Water Jan 2014. Braeside West flood modelling completed by Melbourne Water & GHD, May 2013. Centre Swamp Drain flood modelling completed by Melbourne Water, Oct 2012. Map Produced by VicSES September 2017.

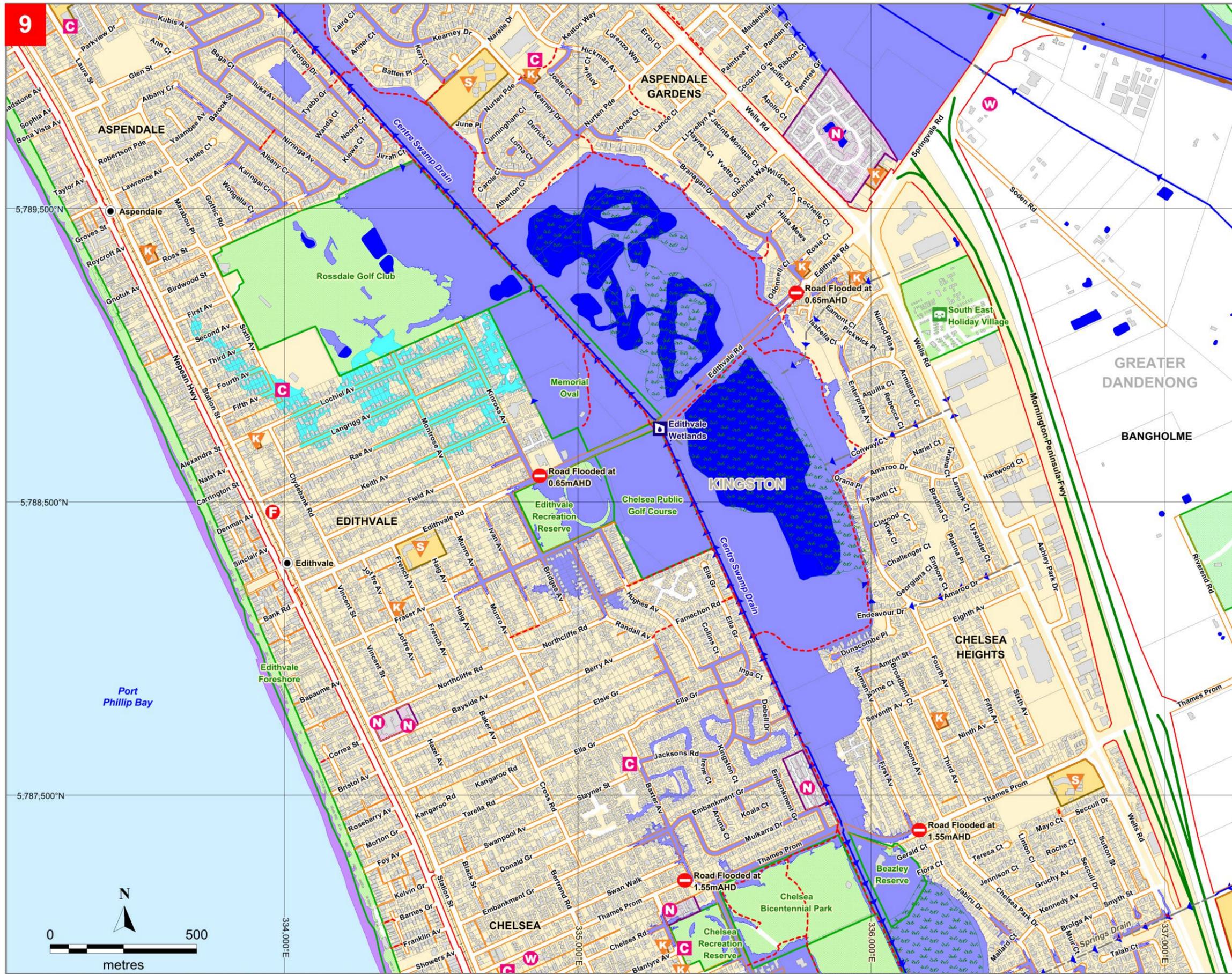
**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding (Hazard)  
**8b. Mordialloc Creek (Waterways)**

- |  |   |  |                                  |  |                           |  |                                  |
|--|---|--|----------------------------------|--|---------------------------|--|----------------------------------|
|  | Building  |  | Extreme                          |  | Bicycle / Walking Trail   |  | Telephone Exchange               |
|  | Area of Interest                                  |  | Significant                      |  | School / College          |  | Sewer Emergency Relief Structure |
|  | 1% AEP Riverine Flood Extent (Hazard Unavailable) |  | Moderate                         |  | Kindergarten / Child Care |  | Rain Gauge                       |
|  | Natural Wetland                                   |  | Low                              |  | Place Of Worship          |  |                                  |
|  | Melbourne Water Retarding Basin                   |  | Creek / Channel                  |  | Community Centre          |  |                                  |
|  | Waterbody   |  | Melbourne Water Stormwater Drain |  | Nursing Home / Aged Care  |  |                                  |
|  |   |  | Levee / Embankment               |  |                           |  |                                  |

**\*Flood Hazard Information**  
 Source: Flood Hazard & Population at Risk: Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retallick M, Testoni I, (Editors) Australian Rainfall and Runoff. A Guide to Flood Estimation, © Commonwealth of Australia (Geoscience Australia), 2016.  
 Flood Hazard is derived based on the combination of Velocity (V) and Depth (D) of floodwaters.  
 Flood Hazard categories:  
 - Low hazard zones where D.V < 0.4m<sup>3</sup>s<sup>-1</sup>;  
 - Moderate hazard zone where D.V is between 0.4 to 0.8m<sup>3</sup>s<sup>-1</sup>. This is the suggested working limit for experienced personnel such as trained rescue workers;  
 - Significant hazard zone where D.V = 0.8 to 1.2m<sup>3</sup>s<sup>-1</sup>; and  
 - Extreme hazard where D.V > 1.2m<sup>3</sup>s<sup>-1</sup>.



**SES Victoria Melbourne Water**  
 This map 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.



- Building
- Area of Interest
- Waterbody
- 1% AEP Flash Flood Extent (Depth Unavailable)
- 1% AEP Storm Surge Extent (Depth Unavailable)
- 1% AEP Riverine Flood Extent (Depth Unavailable)
- Natural Wetland
- Melbourne Water Stormwater Drain
- Creek / Waterway
- Bicycle / Walking Trail
- School / College
- Kindergarten / Child Care
- Place Of Worship
- Nursing Home / Aged Care
- Community Centre
- Likely Road Closure at Height
- Caravan Park
- Drainage Pumping Station

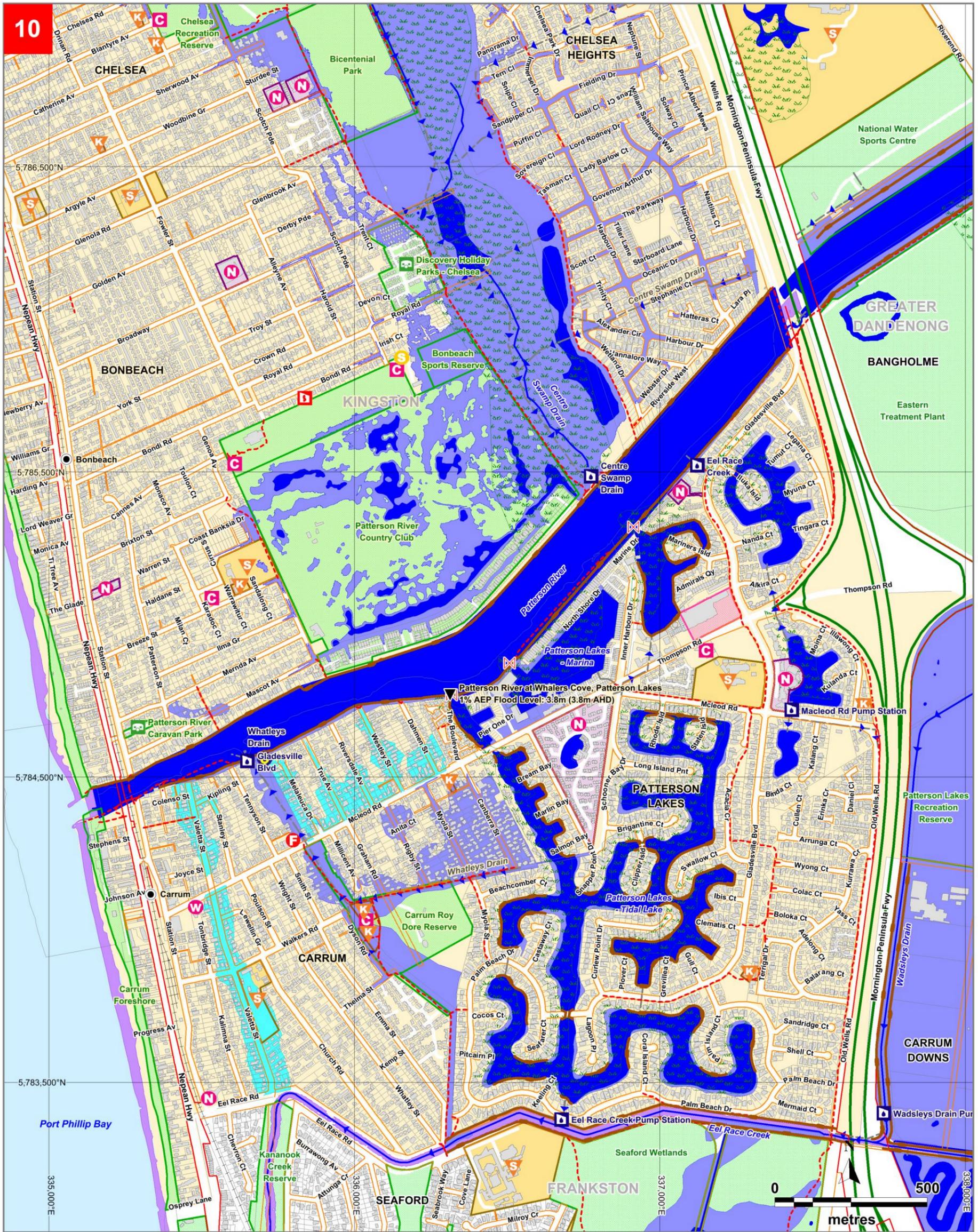


**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding  
 9. Centre Swamp Drain (Edithvale)



This map 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.

Centre Swamp Drain flood modelling completed by Melbourne Water, October 2012. Map Produced by VicSES September 2017.



Patterson Lakes flood modelling completed by Melbourne Water July 2001. Centre Swamp Drain flood modelling completed by Melbourne Water, Oct 2012. Map Produced by VicSES September 2017.

**CITY OF KINGSTON**  
 1% AEP (100yr ARI) Flooding  
 10. Patterson River (Patterson Lakes)

- |  |                                  |                          |
|--|----------------------------------|--------------------------|
| Building   | River / Channel                  | Community Centre         |
| Area of Interest                                 | Bicycle / Walking Trail          | Nursing Home / Aged Care |
| Waterbody  | Melbourne Water Stormwater Drain | Place Of Worship         |
| Natural Wetland                                  | Levee / Embankment               | Drainage Pumping Station |
| 1% AEP Flash Flood Extent (Depth Unavailable)    | School / College                 | Sewer Pumping Station    |
| 1% AEP Riverine Flood Extent (Depth Unavailable) | Kindergarten / Child Care        | CFA Fire Station         |
| 1% AEP Storm Surge Extent (Depth Unavailable)    | Coast Guard Flotilla             | Caravan Park             |
| Victoria State Emergency Service                 | Tide Gauge & 1% AEP Flood Level  | Tidal Flood Gate         |



**SES** **Victoria** **Melbourne Water**

This map 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.

---

## **APPENDIX G – CATCHMENT SCHEMATICS**

Schematics detailing the drainage catchments relevant for this municipality have been included in this Appendix. Each Schematic outlines the drainage system comprising of rivers, creeks or storm-water drains contained within one of the major catchments in the Port Phillip & Westernport Region.

Within each Schematic, there are details useful to flood response such as those relating to gauges, towns, rivers, creeks, drains and reservoirs. Historical facts and figures may also be shown.

The schematics also detail the response boundaries for SES Units and local government, and provide a reference link to the corresponding Municipal Flood Emergency Plan.

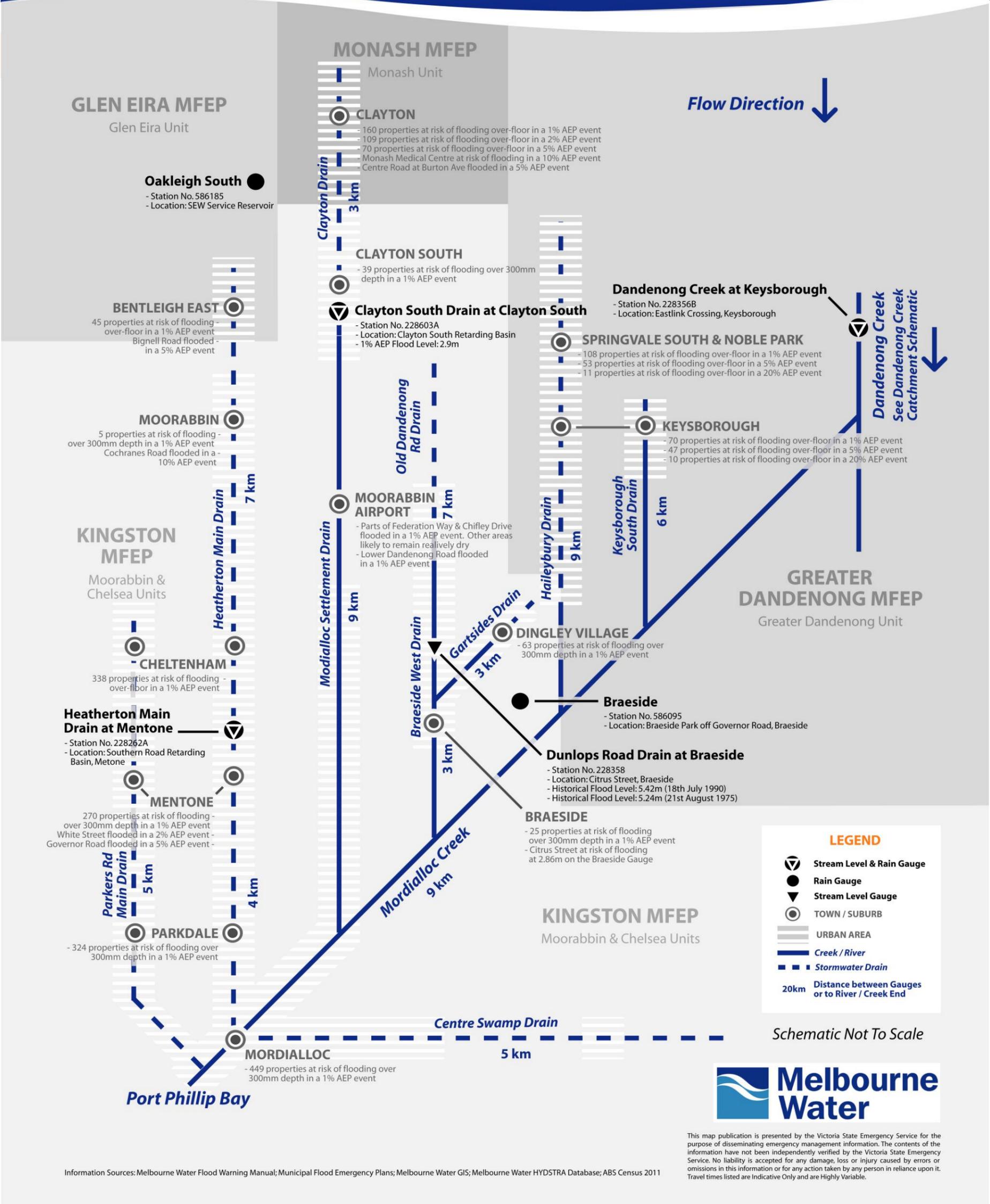
Details within these Catchment Schematics reflect those contained within either other sections of this Municipal Flood Emergency Plan or refer to other Municipal Flood Emergency Plans. These details have been filtered to contain only key facts. For more information on a gauge, drainage system or town consult the corresponding Flood Emergency Plan

Note that not all waterways or drains are included in the schematics, only those that are likely to contribute to flooding further on along the drainage system. Note also the flow direction; the schematics either flow from the top of the page to the bottom, or vice versa.



# Mordialloc Creek Catchment Schematic

Version 3 - September 2017





# Dandenong Creek Catchment Schematic

Version 3 - September 2017

## YARRA RANGES MFEP

Emerald, Lilydale, Healesville & Upper Yarra Units

**Mount Dandenong**  
- Station No. 586090  
- Location: GTV9 Tower, Mount Dandenong

### Bungalook Creek at Fussell Rd Retarding Basin

- Station No. 228369A  
- Location: Fussell Road, Montrose (Melway 51K11)  
- Historical Flood Level: 7.23m (18th September 1984)  
- Historical Flood Level: 6.19m (30th July 1996)  
- Spillway Level: 8.15m  
- Embankment Level: 8.4m  
- 1% AEP Flood Level: 8.39m

13 properties at risk of flooding over-floor in a 1% AEP event  
The Croydton Civic Centre at risk of isolation in a 1% AEP event

**CROYDON**

5 km

Croydon Drain

7 km

Bungalook Creek

1 km

Dandenong Creek

4 km

Dobsons Creek

4 km

8 km

Old Joes Creek

4 km

7 km

Blind Creek

7 km

UPWEY

Blind Creek at Blind Creek Retarding Basin

- Station No. 228366A  
- Location: Rear of Knox City Shopping Centre  
- Travel Time to Wantirna South: Between 0-3 hours  
- Historical Flood Level: 5.14m (3rd February 2005)  
- Spillway Level: 5.59m  
- Embankment Level: 6.39m  
- 1% AEP Flood Level: 6.4m

UPPER FERNTREE GULLY

- Burwood Hwy near Mount Dandenong Tourist Rd at risk of flooding a 1% AEP event

8 km

Monbulk Creek

8 km

Monbulk Creek at Lysterfield

- Station No. 228229B  
- Location: Monbulk Creek Retarding Basin, Lysterfield (Melway 83J2)  
- Historical Flood Level: 8.56m (5th February 2011)  
- Spillway Level: 9.33m  
- Full Supply Level: 10.8m  
- Embankment Level: 11.3m

8 km

Corhanwarrabul Creek at Scoresby

- Station No. 228393A  
- Location: Stud Road, Scoresby (Melway 72J9)  
- Travel Time to Rowville: Between 2-12 hours  
- Historical Flood Level: 2.67m (3rd February 2005)  
- Historical Flood Level: 2.36m (5th February 2011)

5 km

Corhanwarrabul Creek

5 km

Police Road Retarding Basin

10 km

Dandenong Creek at Dandenong

- Station No. 228204C  
- Location: Hammond Road, Dandenong (Melway 90C9)  
- Travel Time to Keysborough: Between 0-2 hours  
- Historical Flood Level: 4.84m (3rd February 2005)  
- Historical Flood Level: 4.76m (19th September 1984)  
- Bank Level: 6.6m (Channel Capacity at Dandenong)  
- 1% AEP Flood Level: 5.87m

4 km

Dandenong Creek at Keysborough

- Station No. 228356B  
- Location: Eastlink Crossing, Keysborough (Melway 94H5)  
- Historical Flood Level: 3.50m (5th February 2011)  
- Levee Height: 5.2m  
- 1% AEP Flood Level: 4.5m

4 km

Dandenong Creek at Patterson Lakes

- Station No. 228383A  
- Location: Outside Tidal Gates, Patterson Lakes (Melway 97F6)  
- Minor: 0.75m  
- Historical Flood Level: 1.26m (3rd February 2005)  
- Historical Flood Level: 1.26m (5th February 2011)  
- Tidal Gate Closure Level: 0.73m  
- 1% AEP Flood Level: 1.60m

7 km

Patterson River

7 km

Patterson Lakes

- Boats & Jetties may become damaged at 0.8m on the Patterson Lakes Gauge  
- Local Flood Guide available for Patterson Lakes

9 km

Mordialloc Creek

9 km

See Mordialloc Creek Catchment Schematic

23 km

See Eumemmering Creek Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

Flow Direction ↓

## MAROONDAH MFEP

Maroondah Unit

### Dandenong Creek at Wantirna

- Station No. 228357A  
- Location: Wantirna Road, Wantirna  
- Travel Time to Rowville: Between 1-14 hours  
- Historical Flood Level: 2.78m (5th February 2011)  
- Historical Flood Level: 2.73m (3rd February 2005)  
- Significant Level: 2.5m (Spillway at Police Rd Retarding Basin will start operating)  
- 1% AEP Flood Level: 4.9m

## WHITEHORSE MFEP

Whitehorse Unit

**KNOXFIELD**

Knox City S.C. Carpark flooding at 4.7m on the Blind Creek RB Gauge - Residential properties and Knox City Shopping Centre at risk of flooding at 6.3m - on the Blind Creek RB Gauge

## KNOX MFEP

Knox Unit

**WANTIRNA**

Boronia Rd & Burwood Hwy flooded at 3.0m on the Wantirna Gauge

3 km

Blind Creek

3 km

Ferny Creek

16 km

Monbulk Creek

8 km

Corhanwarrabul Creek at Scoresby

- Station No. 228393A  
- Location: Stud Road, Scoresby (Melway 72J9)  
- Travel Time to Rowville: Between 2-12 hours  
- Historical Flood Level: 2.67m (3rd February 2005)  
- Historical Flood Level: 2.36m (5th February 2011)

5 km

Police Road Retarding Basin

10 km

Dandenong Creek at Dandenong

- Station No. 228204C  
- Location: Hammond Road, Dandenong (Melway 90C9)  
- Travel Time to Keysborough: Between 0-2 hours  
- Historical Flood Level: 4.84m (3rd February 2005)  
- Historical Flood Level: 4.76m (19th September 1984)  
- Bank Level: 6.6m (Channel Capacity at Dandenong)  
- 1% AEP Flood Level: 5.87m

4 km

Dandenong Creek at Keysborough

- Station No. 228356B  
- Location: Eastlink Crossing, Keysborough (Melway 94H5)  
- Historical Flood Level: 3.50m (5th February 2011)  
- Levee Height: 5.2m  
- 1% AEP Flood Level: 4.5m

4 km

Dandenong Creek at Patterson Lakes

- Station No. 228383A  
- Location: Outside Tidal Gates, Patterson Lakes (Melway 97F6)  
- Minor: 0.75m  
- Historical Flood Level: 1.26m (3rd February 2005)  
- Historical Flood Level: 1.26m (5th February 2011)  
- Tidal Gate Closure Level: 0.73m  
- 1% AEP Flood Level: 1.60m

7 km

Patterson River

7 km

Patterson Lakes

- Boats & Jetties may become damaged at 0.8m on the Patterson Lakes Gauge  
- Local Flood Guide available for Patterson Lakes

9 km

Mordialloc Creek

9 km

See Mordialloc Creek Catchment Schematic

23 km

See Eumemmering Creek Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

12 km

See Mile & Yarraman Creeks Catchment Schematic

**LEGEND**

- Stream & Rain Gauge
- Rain Gauge
- Stream Gauge
- TOWN / SUBURB
- URBAN AREA
- Creek / River
- Stormwater Drain
- 20km Distance between Gauges or to River / Creek End

Schematic Not To Scale

## KINGSTON MFEP

Chelsea & Moorabbin Units

Port Phillip Bay



This map 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. Travel times listed are Indicative Only and are Highly Variable.

Information Sources: Melbourne Water Flood Warning Manual; Municipal Flood Emergency Plans; Melbourne Water GIS; Melbourne Water HYDSTRA Database; ABS Census 2011