

WORKS COMMITTEE - (INFRASTRUCTURE, WATER, WASTE AND WASTEWATER) 9 SEPTEMBER 2020	1
---	----------

CAIRNS WATER SUPPLY SCHEME DROUGHT RESPONSE PLAN

B Millar | 87/15/1 | #6382814

RECOMMENDATION:

It is recommended that Council endorse the Drought Response Plan for the Cairns Water Supply Scheme.

EXECUTIVE SUMMARY:

The purpose of the Drought Response Plan is to provide Council the framework within which it can effectively manage any minor or extreme drought affecting water supply availability, and communicate with and manage the provision of water services to its customers.

BACKGROUND:

At its Ordinary Meeting of 11 December 2019, Council endorsed modifications to the performance targets within the Levels of Service framework for Cairns. Levels of Service (LoS) in water supply terms refers to the long-term assessment of performance (e.g. restriction frequency and severity) against the cost to provide the service at a certain level of risk (e.g. associated with a shortfall in supply).

A drought response plan is fundamental to guiding the implementation of restrictions according to pre-defined operational criteria as part of the LoS framework approach to managing Cairns' water supplies.

COMMENT:

Drought response plans, involving water restrictions, have a legitimate role in managing water resource security. Accordingly, the *Water Supply (Safety and Reliability) Act 2008* provides powers to restrict water supply due to climatic conditions (e.g. drought) or for water conservation needs.

Council has defined four (4) additional levels of water restriction. The restriction levels and estimated demand reductions are as follows:

- Level 1 – 10% use reduction
- Level 2 – 15% use reduction
- Level 3 – 20% use reduction
- Level 4 – 25% use reduction

An additional water restriction level has been defined to achieve an acceptable Essential Minimum Supply Volume (EMSV) during emergency water supply conditions.

OPTIONS:

Option 1 (Preferred):

It is recommended that Council endorse the Drought Response Plan for the Cairns Water Supply Scheme.

Option 2:

It is recommended that Council does not endorse the Drought Response Plan for the Cairns Water Supply Scheme.

CONSIDERATIONS:**Risk Management:**

A primary objective of the Drought Response Plan is to reduce the likelihood of water supply shortfall during periods of minor to extreme drought.

Council Finance and the Local Economy:

Adoption and implementation of the Drought Response Plan presents no material change to Council's business or operational activities. Council's adopted capital works program includes a budget allocation for the pre-construction works to support the timely implementation of the emergency water supply infrastructure identified in the Drought Response Plan.

Community and Cultural Heritage:

Generally, the water restrictions under the proposed plan are largely targeted towards external end uses such as irrigation, wash down, pools, and other external cleaning uses. The restrictions generally relate to the following aspects of water use:

- The hours when water may be used on premises for stated purposes; or
- The way water may be used on premises.

Natural Environment:

Managing and restricting demand during periods of drought will support Council in meeting the environment flow requirements for its dam and water supply intakes.

Corporate and Operational Plans:

Management of our water supply resources relates to the following strategic goals identified in Council's Corporate Plan:

- Natural Assets – make better use of our natural resources
- Liveability – ensure our communities are prepared for disasters
- Serving the Community – considered decision-making

Statutory:

There is currently no statutory requirement under Queensland's *Water Supply (Safety and Reliability) Act 2008* for a water service provider to adopt a drought management plan. However, the Act contains provisions for the registered water service provider to impose restrictions for drought management and other purposes.

Policy:

Council's General Policy No. 1:01:02 – Water Restrictions Policy establishes the policy and approval process for imposition of water restrictions by Council.

CONSULTATION:

The following internal stakeholders have endorsed the Drought Response Plan for the Cairns Water Supply Scheme:

- General Manager, Water and Waste
- Manager Infrastructure, Water and Waste
- Manager Operations, Water and Waste
- Manager Business Performance and Compliance, Water and Waste

ATTACHMENTS:

Cairns Water Supply Scheme – Drought Response Plan ([#6170055](#))



Ben Millar
Principal Engineer – Strategy & Planning



Mark Wuth
General Manager – Water & Waste

CAIRNS WATER SUPPLY SCHEME DROUGHT RESPONSE PLAN



Controlled Copy No.	
Issued To	
Revision	
Revision Date	

Contents

1	Introduction	7
1.1	Background.....	7
1.2	Purpose	7
1.3	Scope	7
1.4	Objectives.....	7
2	Storage Behaviour of Copperlode Falls Dam	8
3	Water Conservation	9
3.1	Demand Management	9
3.2	Water Restrictions.....	9
3.3	Essential Minimum Supply Volume	9
4	Emergency Water Supply.....	11
4.1	Introduction.....	11
4.2	Contingency Supply Source.....	11
4.3	Emergency Infrastructure Requirements.....	11
4.4	Trigger Level.....	12
5	Drought Response Provisions	13
5.1	Framework.....	13
5.2	Normal Operations.....	13
5.3	Activation Levels.....	13
5.4	Activation Trigger Levels.....	14
5.5	Notification and Assessment.....	15
5.6	Activation	15
6	Roles and Responsibilities	16
6.1	Normal Operations.....	16
6.2	General Manager Water & Waste	18
6.3	Emergency Control Organisation	18
6.4	Local Disaster Coordinator.....	19
6.5	Local Disaster Management Group – Cairns Region	19
7	Emergency Communications.....	21
7.1	Internal Communications	21
7.2	External Communications	23
7.3	Drinking Water Regulator Notification	23
8	Emergency Control Organisation Support Tools.....	24
8.1	Event Records	24
8.2	Situation Report.....	24
8.3	Post Event	24

9	Training Exercise and Testing Requirements	25
10	Appendices	26
	Appendix 1: Notification and Activation Flowchart	27
	Appendix 2: Notification Listing Contacts	28
	Appendix 3: Emergency Control Organisation Support Tools.....	30
	Appendix 4: Water Restriction Measures	31

Figures

	Figure 1: Recorded storage behaviour of Copperlode Falls Dam between 1992 and 2019 ...	8
	Figure 2: Emergency Borefield and Supporting Infrastructure	12
	Figure 3: CRC Emergency Management Framework.....	13

Tables

	Table 1: Drawdown Activation Trigger Levels	14
	Table 2: ECO Role Holders.....	19
	Table 3: <i>Whispir</i> Notifications.....	22

Abbreviations

Abbreviation	Full Form
BOM	Bureau of Meteorology
CEO	Chief Executive Officer, Cairns Regional Council
CFD	Copperlode Falls Dam
CRC	Cairns Regional Council
DDC	Disaster Coordination Centre
DDMG	District Disaster Management Group
DMU	Disaster Management Unit
DNRME	Department of Natural Resources, Mines and Energy
DRP	Drought Response Plan
ECO	Emergency Control Organisation
EMSV	Essential Minimum Supply Volume
EST	Emergency Supply Team
EWS ECO	Emergency Water Supply Emergency Control Organisation
EWSP	Emergency Water Supply Plan
FN	Far North
FSL	Full Supply Level
GCCS	Guardian Control Centre System
GIS	Geographic Information System
GM WW	General Manager Water & Waste
HR	Human Resources
IMS	Information Management System
LDC	Local Disaster Coordinator
LDCC	Local Disaster Coordination Centre
LDMG	Local Disaster Management Group
LDMG-CR	Local Disaster Management Group – Cairns Region
MBPC	Manager Business Performance and Compliance
MHz	Megahertz
ML	Megalitres

MO	Manager Operations (Water & Waste)
NEAS	National Emergency Alert System
QDMA	Queensland Disaster Management Arrangements
QEW	Quality Environment and Water Team
QFES	Queensland Fire and Emergency Services
QGSO	Queensland Government Statistician's Office
QPS	Queensland Police Service
SCADA	Supervisory Control And Data Acquisition
SEQ	South East Queensland
SITREP	Situation Report
SMS	Short Message Service
TC	Treatment Coordinator
UHF	Ultra High Frequency
WRT	Water Restrictions Team
WTP	Water Treatment Plant
WW	Water & Waste

Document Control Sheet

Revision Status

Issue / Revision number	Revision description	Date
1	Working document	February 2020
2	Final for endorsement	May 2020

Amendments

Amendment number	Description	Date	Approved

Note: It is intended that the document will be reviewed every four (4) years.

This document was endorsed by Council resolution at its Committee Meeting of 9 September 2020.

1 Introduction

1.1 Background

Cairns has two main sources of water supply: run-of-river extraction from the Behana Creek intake and the release of water stored in Copperlode Falls Dam (Lake Morris) on Freshwater Creek.

CRC's Levels of Service framework acknowledges that the long-term performance of the water supply involves:

- the implementation of water restrictions during drought conditions to conserve storage in Copperlode Falls Dam; and,
- a non-zero likelihood of needing to implement emergency provisions to supply an essential minimum volume of water during extreme drought.

1.2 Purpose

The purpose of this plan is to provide CRC the framework within which it can effectively manage any minor or extreme drought affecting water supply availability, and communicate with and manage the provision of water services to its customers.

1.3 Scope

This plan details the requirements of CRC and their management of the response to minor to extreme drought conditions affecting the supplies from Copperlode Falls Dam and Behana Creek.

This plan applies to all customers connected to the Cairns Water Supply Scheme for the period until 2026 or until commissioning of the Behana Mulgrave Water Supply Scheme (whichever occurs first).

1.4 Objectives

The objectives of the plan are to:

- Identify the expectation of customers and the wider community to conserve water during drought events and use it wisely;
- Outline the approved measures for restricting the use of water from CRC's water supply system during periods of drought;
- Outline the emergency water supply provisions and actions that CRC will take during periods of extreme drought to maintain essential water services to meet minimum health requirements;
- Clearly define the roles, responsibilities, instructions, accountabilities and authority in managing drought events; and,
- Provide a coordinated response in the shortest possible time to maintain minimum essential supply volumes during extreme drought.

2 Storage Behaviour of Copperlode Falls Dam

Since its construction, the storage behaviour of Copperlode Falls Dam has been dynamic, with the storage reliant on regular seasonal inflows to meet demand. To date, there have been no recorded water supply shortfalls as a result of Copperlode Falls Dam reaching its minimum supply volume.

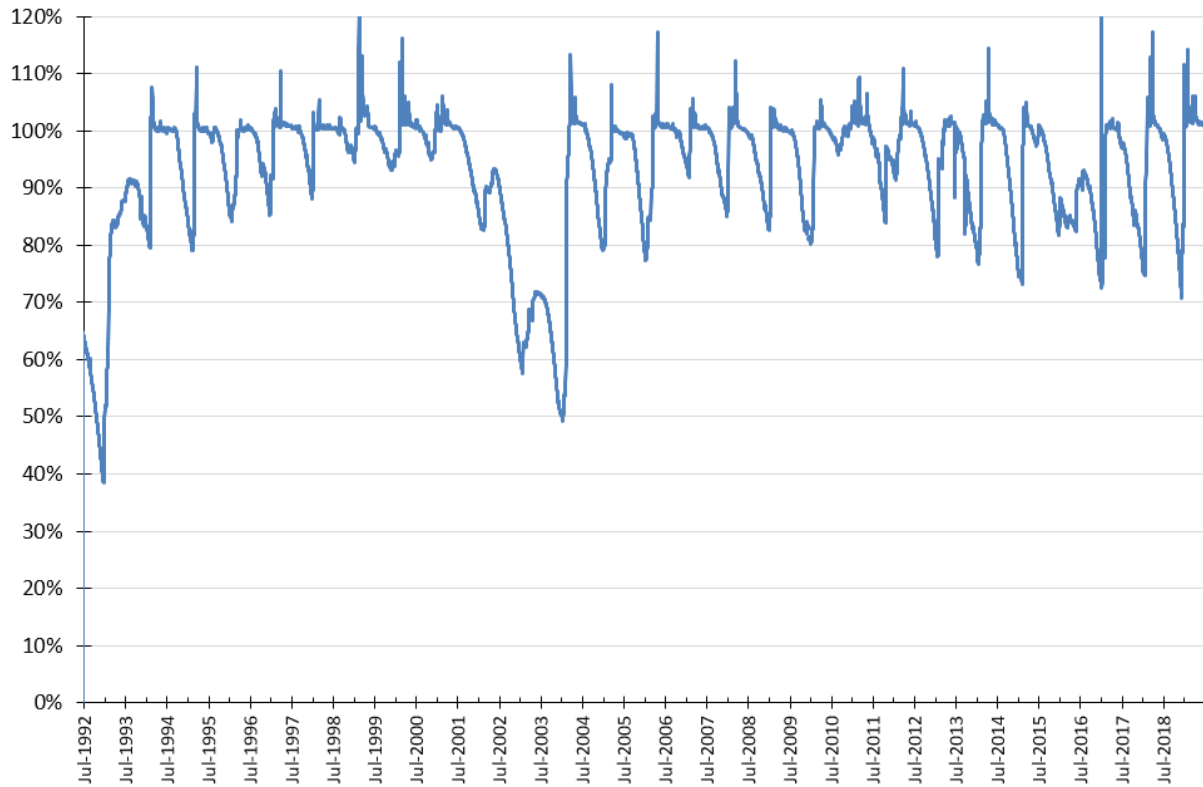


Figure 1: Recorded storage behaviour of Copperlode Falls Dam between 1992 and 2019¹

¹ Cairns Regional Council. (2019). *Record of dam storage levels.* (#6144064)

3 Water Conservation

3.1 Demand Management

CRC imposes permanent water conservation measures and implements a suite of activities and initiatives to manage potable water demand during normal climatic conditions.

The primary objective of the demand management measures is to maintain and influence the attitudes and behaviours towards responsible and conservative use of potable water.

3.2 Water Restrictions

Water restrictions have a legitimate role in managing water resource security. Accordingly, the *Water Supply (Safety and Reliability) Act 2008* provides CRC, as the registered water service provider, powers to restrict water supply due to climatic conditions (e.g. drought) or for water conservation needs.

CRC may impose restrictions around the following aspects of water use²:

- The volume of water supplied to a customer or type of customer; or
- The hours when water may be used on premises for stated purposes; or
- The way water may be used on premises.

Together with permanent water conservation measures, CRC has defined four (4) additional levels of increasing water restriction³. The restrictions are largely targeted towards external end uses such as irrigation, wash down, pools, and other external cleaning uses. The estimated demand reductions⁴ are as follows:

- Level 1 – 10% use reduction
- Level 2 – 15% use reduction
- Level 3 – 20% use reduction
- Level 4 – 25% use reduction

3.3 Essential Minimum Supply Volume

Further water restrictions have been defined to achieve an acceptable Essential Minimum Supply Volume (EMSV) during emergency water supply conditions.

The EMSV for Cairns is based on the conditions, characteristics and requirements specific to Cairns. The derivation of an EMSV has considered community impacts, potential timing implications to achieve demand reductions, and availability of water to supply the defined EMSV.

The **EMSV currently defined for Cairns is 207 litres per capita per day (L/c/d)**, on the basis of the following:

- A *Residential* EMSV demand target of **104 L/c/d** as an achievable and socially acceptable target during severe drought conditions based on analysis of residential end use profiles and experiences from the South East Queensland (SEQ) drought.

² See *Water Supply (Safety and Reliability) Act 2008*, section 41(1) (Current as at 1 July 2019)

³ Cairns Regional Council. (2020). *Water Restrictions*. (#5638144)

⁴ Stantec. (2017). *Cairns Emergency Water Supply Plan*. (#5401669). See discussion in section 2.2 on page 6 regarding the analysis and verification of these estimates as reasonable and appropriate.

- A *Non-Residential* EMSV demand target of **81 L/c/d** as an achievable and socially acceptable target during severe drought conditions, with consideration of critical customers, uncertainties in Tourism sector reductions and previous experiences from the SEQ drought.
- A *System Leakage* allowance of **20 L/c/d** is included (reduced from 30 L/c/d through leakage management programs undertaken as part of the Demand Management Strategy)
- *Water Treatment Plant (WTP)* losses allowance of 1%, equating to **2.05 L/c/d**.

The defined EMSV figure equates to an emergency supply requirement of 38.4 ML/day by the adopted 2026 planning horizon (applying 2018 medium series QGSO population projections).

4 Emergency Water Supply

4.1 Introduction

CRC's approach is to manage water supply through permanent demand management measures and restrictions in response to adverse climatic events. The approach needs to be underpinned by a well-defined and demonstrably achievable emergency response to ensure water supply security under extreme short-term conditions⁵.

The Emergency Water Supply Plan (EWSP) for Cairns involves the implementation of a borefield and water treatment plant to provide the EMSV.

4.2 Contingency Supply Source

The Mulgrave Aquifer is identified as the contingency supply source for Cairns⁶. A groundwater assessment of the ability of the Mulgrave Aquifer to supply the defined EMSV of 38.4 ML/d under extreme climatic conditions indicated the following modelled outcomes⁵:

- Sustainable supply is likely over the long-term under non-zero (approx. <0.1%) hydrologic risk conditions; and,
- Sustainable supply is unlikely beyond 12 months under 0% hydrologic risk conditions.

It was therefore determined that under non-zero (approx. <0.1%) hydrological risk conditions that the EMSV is able to be sustainably supplied by the Mulgrave Aquifer.

4.3 Emergency Infrastructure Requirements

The infrastructure identified to supply and treat the EMSV is illustrated in Figure 2 and involves:

- 20 production bores and associated borefield pipelines;
- Groundwater delivery pipeline to a raw water storage of a water treatment plant; and,
- Water treatment plant consisting of containerised modules, a clearwater storage, and booster pumping station to deliver water to Cairns using the existing bulk water supply system.

⁵ Stantec. (2017). *Cairns Emergency Water Supply Plan*. (#5401669)

⁶ Water Security Advisory Group. (2015). *Water Security Strategy - Final Report*. (<http://www.cairns.qld.gov.au/>)



Figure 2: Emergency Borefield and Supporting Infrastructure

4.4 Trigger Level

Scheduling for the EWSP implementation identified a maximum duration of 6 months for the construction phase period. The construction phase is preceded by the preliminary works and design phase prior to the trigger level for the EWSP implementation being reached⁷.

An analysis of the storage drawdown behaviour of Copperlode Falls Dam determined a trigger level that balances the time available to construct and commission the EWSP infrastructure with minimising the likelihood of (unnecessarily) triggering the very significant effort and costs associated with the response.

Based on adhering to Level 4 restrictions during the implementation of the emergency infrastructure, a trigger level of 12,000 ML (approx. 32% of full supply volume) was determined to provide a minimum of 6 months of supply at <0.1% hydrologic risk.

⁷ As of February 2020, a consultancy to complete the preliminary works and deliver the detailed design and tender documents is underway (Consultancy No. CW23/2019).

5 Drought Response Provisions

5.1 Framework

The drought response framework (see Figure 3) is aligned to disaster management principles and emergency management standards to ensure that CRC can effectively respond to a water supply shortfall emergency and activate the resources of the Local Disaster Management Group – Cairns Region (LDMG-CR) to assist.

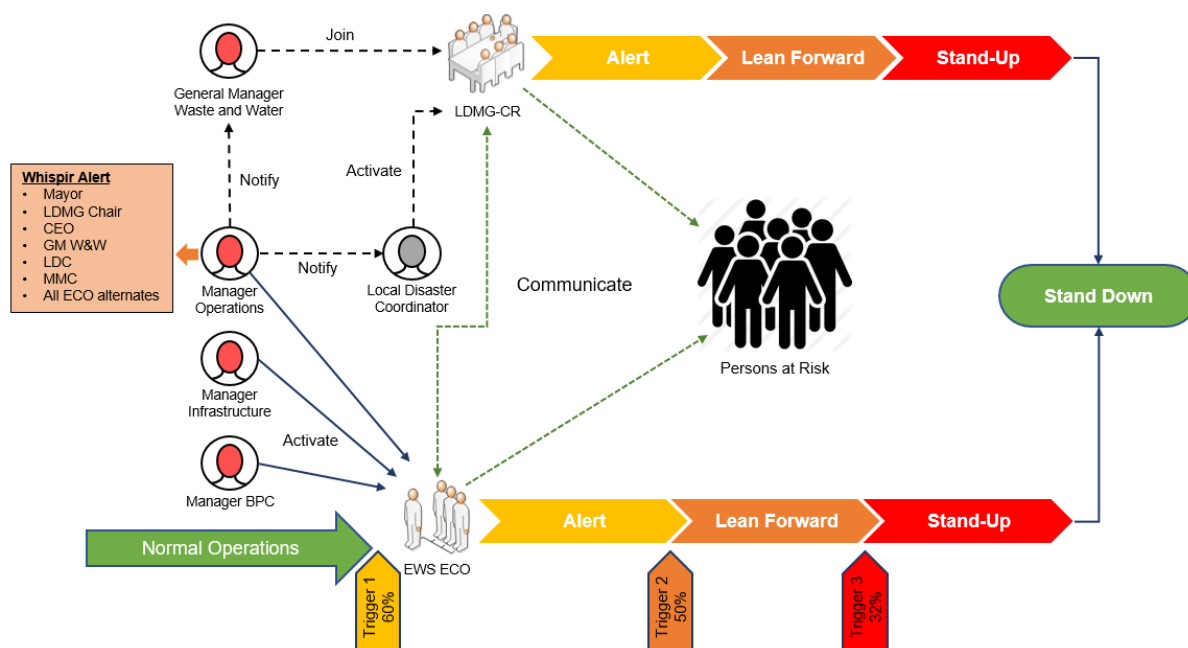


Figure 3: CRC Emergency Management Framework

5.2 Normal Operations

The state of normal operations is characterised by general seasonal fluctuation of storage levels in the dam. Operational procedures relate to the following specific monitoring activities:

- Historic and trending water supply demand requirements for Cairns;
- Water level at the dam relative to the spillway level;
- Total creek flow and authorised take at Freshwater Creek Intake;
- Total creek flow and authorised take at Behana Creek Lower Intake; and
- Rainfall in the Cairns area.

Available operational procedures also include short-term behaviour forecasting of Copperlode Falls Dam to determine the likelihood of available storage under a range of forecast climatic and hydrological outcomes.

5.3 Activation Levels

This plan applies the standard disaster activation levels consistent with those applied by the LDMG-CR and other disaster management agencies. These are:

- **Alert:** A heightened level of vigilance due to the possibility of an event in the area of responsibility.

- **Lean Forward:** An operational state prior to 'stand up' characterised by a heightened level of situational awareness of a disaster event (either current or impending) and a state of operational readiness.
- **Stand Up:** The operational state following 'lean forward' whereby resources are mobilised, personnel are activated, and operational activities commenced.
- **Stand Down:** Transition from responding to an event back to normal core business and/or recovery operations. There is no longer a requirement to respond to the event and the threat is no longer present.

5.4 Activation Trigger Levels

The activation levels for the implementation of water restrictions and the emergency water supply are based on pre-defined triggers associated with the storage in Copperlode Falls Dam. The activation trigger levels during the drawdown of Copperlode Falls Dam are provided in Table 1.

Table 1: Drawdown Activation Trigger Levels

CFD Volume		Activation Level		
Storage Volume (ML)	Percent of Full Supply Volume	Trigger Level	Water Restriction	Emergency Water Supply
38,475	100%	N/A	Permanent Conservation Measures	Normal Operations
30,780	80%		Level 1 Restrictions	
26,932	70%		Level 2 Restrictions	
23,085	60%	1	Level 3 Restrictions	Alert
19,238	50%	2	Level 4 Restrictions	Lean Forward
12,000	32%	3		Stand-Up
175	0.5%		Essential Minimum Supply	

5.4.1 Transitioning to Stand Down

Once commissioned, the emergency infrastructure will supply the EMSV requirements. Normal operating conditions will only be returned once Copperlode Falls Dam returns to full supply capacity, unless determined otherwise by the CEO. This is to ensure sufficient time and water security in case the emergency supply is re-triggered within a short timeframe.

5.5 Notification and Assessment

The process of notifying a drought event and activating the WRT, EST and the LDMG-CR is shown in the Notification and Activation Flowchart contained in Appendix 1.

Identification of an event may be via the activities undertaken by CRC during normal operations, existing sensors and other monitoring devices (e.g. on-line dam level gauge) or from an external source. Once alerted to an event, CRC officers are to notify the GM WW. If the GM WW cannot be contacted, the MO is to be contacted and if the MO cannot be contacted the TC is to be notified.

The GM WW or alternate will then assess the situation against the conditions detailed in Table 1. This will identify the trigger level and dictate the required activation level.

See Appendix 1 – Notification and Activation Flowchart

5.6 Activation

This DRP will be invoked, the WRT and EST activated, and appropriate internal CRC stakeholders notified as soon as any of the conditions of a drought event described in Table 1 are met. Activation of the “Alert” level will primarily be managed through the use of *Whispir* (see Section 7.1.1) or, if this is not possible, by phone using the notification listing contacts in Appendix 2.

The responsibility for invoking the DRP rests with the GM WW for authorisation by the CEO. While timeframes would not be of an urgent nature, the MO and TC are able to invoke the DRP for authorisation by the CEO in extenuating circumstances.

The activation of the LDMG-CR is defined in the LDMP (see Appendix 1 Activation of the LDMG) and will be managed by the LDC to provide the appropriate level of support to the WRT and EST through each level of activation.

See Appendix 2 – Notification Listing Contacts

6 Roles and Responsibilities

6.1 Normal Operations

CRC staff actions in regard to monitoring CFD during normal operations are contained in the CFD operational procedures. Specific responsibilities under this DRP prior to the activation of the WRT and EST are detailed below.

6.1.1 Chief Executive Officer

The responsibilities of the CEO are:

- By delegation of Council, authorise implementation of the DRP; and,
- Assist in maintaining communications with the Mayor and Councillors.

6.1.2 General Manager Water & Waste

The responsibilities of the GM WW are:

- Review and assess any notifications of a drought trigger level event;
- Invoke the DRP and activate the ECO if the conditions detailed in Table 1 are met;
- Notify CRC stakeholders (via *Whispir*) that “Alert” conditions have been reached and the ECO is activating including:
 - Mayor
 - Chair Local Disaster Management Group
 - Chief Executive Officer
 - Manager Business Development and Compliance
 - Local Disaster Coordinator
 - Manager Marketing and Communications
 - All potential ECO members.
- Chair a teleconference with all ECO members to confirm role allocation; and
- Fill the role of Emergency Controller within the ECO when it is activated.

6.1.3 Manager Operations

The responsibilities of the Manager Operations are:

- Identify lead indicators of a potential trigger level being met;
- Escalate notifications of a drought event to the GM WW;
- Be prepared to invoke the DRP if the GM WW is unavailable;
- Be prepared to resource the enforcement of restrictions; and,
- Be prepared to resource the operation of the emergency supply borefield and WTP.

6.1.4 Treatment Coordinator

The responsibilities of the Treatment Coordinator are:

- Identify lead indicators of a potential trigger level being met;
- Escalate notifications to the MO;
- Be prepared to invoke the DRP if the GM WW is unavailable; and,
- Be prepared to operate the emergency supply borefield and WTP.

6.1.5 Manager Business Performance and Compliance

The responsibilities of the Manager Business Performance and Compliance are:

- Coordinate collaboration with local and district disaster management groups and other entities about reviewing DRP and communicating with the community;
- Maintain Water and Waste Department Whispir Communication Procedure (#5748810);
- Work with CRC Information Systems Branch to undertake an annual review of Critical Customer Distribution Lists within *Whispir* to ensure their accuracy for use during an event;
- Ensure all DRP related training and exercise requirements detailed in Section 9 are met;
- Manage the communication of CRC educational information regarding the DRP and its associated emergency water supply arrangements with the broader Cairns community in consultation with Manager Marketing and Communications; and,
- Manage regulatory compliance, including approval to implement alternative operational arrangements for minimum stream flows at the water supply intakes.

6.1.6 Manager Marketing and Communication

The responsibilities of the Manager Marketing and Communication are:

- Manage communications with the community during an event.

6.1.7 Manager Infrastructure

The responsibilities of the Manager Infrastructure are:

- Ensure suitable tender documents are available for tendering the contract for construction and commissioning of the emergency water supply borefield, water treatment plant, and associated infrastructure;
- Manage the tendering, evaluation and award of the contract;
- Manage and administer the contract delivery phase; and,
- Ensure commissioning of the emergency water supply infrastructure meets the critical success objectives prior to reaching dead storage at CFD.

6.1.8 Local Disaster Coordinator

The responsibilities of the Local Disaster Coordinator are:

- Establishing and maintaining EWS ECO role profiles within the Guardian Control Centre System (GCCS);
- Providing initial and annual refresher training on the GCCS to all ECO role holders (as per Table 2);
- Participating in EWS ECO training and exercises including the set-up of the GCCS in training mode; and,
- Be prepared to activate during “stand up” conditions.

6.1.9 Emergency Control Organisation - Role Holders

All CRC staff identified as a primary or alternate ECO role holder (see Table 2) are to:

- Attend all annual training and exercises as defined in Section 9;

- Attend annual refresher training on the GCCS; and
- Remain cognisant of their ECO role requirements.

6.2 General Manager Water & Waste

The role of the GM WW is to direct and manage the activities of the CRC WW division with regard to ensuring water security for the Cairns population. GM WW is therefore responsible for ensuring WW staff meet their responsibilities as described in Section 6.1.

During a drought emergency event, the GM WW is responsible for:

- Activating as part of the LDMG to provide advice on CFD and the emergency supply arrangements; and
- Managing water security objectives and activating contingency plans if necessary.

6.3 Emergency Control Organisation

Following the invocation of this DRP based on the triggers described in Table 1, the EWS ECO will be established to manage CRC response activities.

6.3.1 Role

The role of the EWS ECO is to manage the implementation and enforcement of water restrictions, and the implementation and commissioning of the emergency water supply infrastructure. Separate teams under the governance of the EWS ECO are assigned to each of these key activities: Water Restrictions Team and Emergency Supply Team.

6.3.2 Responsibilities

The EWS ECO has the following responsibilities during a drought emergency event:

- Collect and collate data on the storage in the dam;
- Monitor key metrics on the drawdown of the dam and customer/community consumptive demands;
- Manage the implementation and commissioning of the emergency water supply borefield, water treatment plant, and associated infrastructure;
- Minimise system leakage and losses by efficient operation of the water supply and treatment systems;
- Enforce water restrictions in accordance with the pre-defined measures in Appendix 4;
- Maintain a chronological record of actions taken and data collected during the event;
- Provide subject matter expert advice to the LDMG;
- Recommend communication activities to the LDMG;
- Manage access to CFD by the public and commercial operators;
- Maintain communications with the LDMG;
- Notify and manage communications with Drinking Water Regulator.

6.3.3 ECO Roles

The EWS ECO consists of two key roles to implement water restrictions and the commissioning of the emergency water supply infrastructure during a drought event. The primary and alternate holders of each role are detailed in Table 2.

Table 2: ECO Role Holders

Position	Primary Holder	Alternate 1	Alternate 2
Water Restrictions Team Leader	Manager Operations	Water Services Coordinator	Treatment Coordinator
Emergency Supply Team Leader	Manager Infrastructure	Principal Engineer Design & Delivery	Senior Engineer Projects
Communications Leader	Manager Business Performance and Compliance	Strategic Policy & Compliance Coordinator	Community Engagement Officer

6.4 Local Disaster Coordinator

6.4.1 Role

The role of the LDC is to activate the LDMG to act on reports from the ECO during a drought emergency event.

6.4.2 Responsibilities

The LDC has the following responsibilities following the invocation of this DRP and the activation of the EWS ECO:

- Create a new Operation Name for the drought emergency event in GCCS;
- Initiate an extraordinary meeting of the LDMG Executive when notified that the DRP has been invoked and the EWS ECO is activating;
- Brief the LDMG Executive on the situation;
- Activate relevant LDMG Sub-Plans;
- Open the LDCC; and
- Activate the LDMG as required to act on reports from the EWS ECO.

Once the LDMG has been activated, the responsibilities of the LDC are in accordance with the LDC operational checklist and normal LDMG operating procedures and plans based on the situational information provided by the EWS ECO and other relevant information obtained from external sources (e.g. BoM).

6.5 Local Disaster Management Group – Cairns Region

6.5.1 Role

The role of the LDMG-CR is to coordinate CRC response and recovery actions and joint agency response during a drought emergency event.

6.5.2 Responsibilities:

The LDMG-CR has the following responsibilities during a drought emergency event:

- Activate LDMG-CR when requested by LDC
- Take over management of communication with the broader Cairns community for the remaining stages of the emergency

- Assist with enforcement of water restrictions and management of critical customers

7 Emergency Communications

CRC has a range of communication channels and platforms to assist in internal and external communication during an emergency event. External communications will be managed by the Manager Marketing and Communications in consultation with LDC.

7.1 Internal Communications

In the case of an emergency, direct contact with ECO members can be conducted using Satellite phones, VoIP, UHF radio and Mobile telephone technologies. In addition, operations staff can be contacted using the below radio frequencies.

- Transmit frequency – 454.900 MHz
- Receive frequency – 464.900 MHz (Mount Yarrabah)
- Receive frequency – 463.575 MHz (Lamb's Head)

- Encode and decode 123 Hz

The following communication systems are also used for internal communication during the invocation of the DRP, activation of the ECO and management of a drought emergency. These are in addition to normal phone and SMS communications outlined above. Note that email should not be used for high priority communications.

7.1.1 *Whispir*

Whispir is a communication platform which allows CRC to issue alerts and warnings via SMS, email and voicemail. This system allows internal and external tiered communication trees with automatic trigger points with emergency alerts/ warnings disseminated as required. *Whispir* features rich text messaging enabling the use of GIS mapping and live cam pictures.

Whispir will be used for communication with internal and external CRC stakeholders in the following circumstances:

- When the DRP has been invoked and the ECO is activating (internal only);
- When a change in the level of activation of the ECO has occurred (internal and external); and
- End of drought emergency event and stand down of the ECO (internal and external).

Table 3: *Whispir* Notifications

Circumstance	Message
Initial activation	The trigger conditions for a Level <i>[insert level assessed (1/2/3)] [insert type of emergency event]</i> drought emergency event have been identified and the EWS ECO has activated to [ALERT/LEAN FORWARD/STAND UP] status
Escalation of trigger level	The trigger conditions for a Level <i>[insert level assessed (2/3)] [insert type of emergency event]</i> drought emergency event have now been met and the EWS ECO is now at [LEAN FORWARD/STAND UP] status
De-escalation of trigger levels	The trigger conditions for a Level <i>[insert level assessed (1/2/3)] [insert type of emergency event]</i> drought emergency event have now moderated and the EWS ECO has de-escalated to [ALERT/LEAN FORWARD/STAND UP] status
Emergency over	The drought emergency event is now over and the EWS ECO has been stood down

7.1.2 Guardian IMS

Following the activation of the EWS ECO and LDMG, the Guardian IMS will be used to manage communication between these teams as it is during all CRC disaster and emergency events. EWS ECO roles are included in the CRC GUARDIAN IMS, which allows ECO members to:

- Access role-specific operational checklists;
- Provide regular sitreps to the LDMG;
- Request LDMG support; and
- Recommend actions to be carried out by the LDMG.

EWS ECO members access Guardian IMS, using the following log on convention:

- Web address: <https://live.guardianims.com/QIMS/Landing>
- Sign In rules: Email (<initial.surname>@cairns.qld.gov.au
Password (<individual password>)

EWS ECO members and their alternates maintain a quick link on their computer toolbar.

The GUARDIAN IMS will also be used during exercises in training mode to allow ECO members to maintain their knowledge and familiarity of the system and practice its use during an emergency event.

For assistance and troubleshooting in Guardian IMS during an emergency, the following phone numbers are available:

- Head Office: +61 7 4946 6697
- After Hours: +61 4 0926 4130

7.1.3 Loss of systems

If during a drought emergency event the ECO loses the functionality of *Whispir* or the GUARDIAN IMS, it will revert to phone communications (if operational), and the use of paper-based checklists and guides to manage its response.

7.2 External Communications

In the event of a drought emergency situation, everyone has a responsibility for conservative and responsible use of drinking water. The following communication systems are used to communicate with the broader community so that they can be informed, take suitable actions and manage their behaviours to ensure the prolongation of drinking water supplies.

7.2.1 Cairns Alert and Cairns Disaster Management Dashboard

CRC has a 'Cairns Alert' system which uses text messages (SMS) and email to send out information about local disasters, severe weather and emergency events. **The alerts are official communication from the LDMG**, who manages the community response to disasters.

'Cairns Alert' utilises the *Whispir* communication platform to issue alerts and warnings to residents. Resident details are obtained from the CRC rates database for emergency alerts. Also, residents can 'opt-in' to be included in Cairns regional emergency alerts which would include drought emergency events.

CRC Disaster Management also has a Cairns Disaster Management Dashboard at disaster.cairns.qld.gov.au which provides disaster news and intelligence via a CRC webpage information gateway.

7.2.2 Media and Social Media

Social media and local media outlets including TV and radio will be engaged to release information as deemed appropriate at the time.

The **LDMG Communication Officer (Manager Marketing and Communications)** conducts communication with the community with the support of local disaster staff. CRC can also call upon the emergency services.

7.2.3 My Cairns App

My Cairns has been designed to make life easier for residents and visitors to go about their day-to-day lives. With My Cairns you get information you need, right in your hand.

It has been designed to report non-urgent issues and requires users to opt in to receive notifications about water restriction reminders and information.

7.3 Drinking Water Regulator Notification

Following each notification level, the **Manager Business Performance and Compliance will notify DNRME Drinking Water Regulator** about the change in activation level. The contact details are listed in Appendix 2 and hereunder:

- DNRME Incident Hotline – 1300 596 709
- Email – DrinkingWater.Reporting@dnrme.qld.gov.au

In addition, as a stakeholder listed in Guardian IMS, the Drinking Water Regulator will receive media releases and bulletins via email when released by the LDMG.

8 Emergency Control Organisation Support Tools

The following tools will be used by the ECO during a dam emergency in addition to the functionality provided by the GUARDIAN IMS.

8.1 Event Records

Once the EWS ECO is activated, Guardian IMS is used to record details on communications, major decisions, and actions taken and to ensure appropriate information is provided to other CRC staff quickly if required.

Prior to activation event logs are used by all ECO members to ensure details of the event can be included in the emergency event report.

8.2 Situation Report

The Situation Report (SITREP) is used to provide a structured update to the LDMG on the current situation during the emergency event. The timing of when a SITREP is to be provided to the LDMG and will change depending on the status of the emergency. As a guide, a SITREP would be provided to the LDMG as follows:

- **Alert:** Fortnightly
- **Lean Forward:** Weekly
- **Stand Up:** Daily

The SITREP will provide the LDMG and other CRC stakeholders with information on the current status.

Templates for the tools can be located in Appendix 3. This SITREP is also available in GUARDIAN IMS.

See Appendix 3 – ECO Support Tools

- Event Log Template
- SITREP Template

8.3 Post Event

It is important to capture all the information required during an event using the correct templates and procedures to ensure all the appropriate details can be included in an emergency event report.

The General Manager WW will convene a post event review with all CRC primary and alternate officers to inform the emergency event report.

9 Training Exercise and Testing Requirements

CRC officers undertake a range of emergency preparedness activities as part of their normal designated responsibilities which include:

- Review and update of the DRP;
- Training of relevant CRC staff; and
- Exercising the DRP.

9.1.1 Training

EWS ECO members and those personnel who provide support to the ECO during a drought emergency event are to be trained in this plan and its application. Training is to be conducted to ensure individuals who have a specific role understand:

1. Their responsibilities;
2. How notification, assessment and activation will occur;
3. What facilities and resources they will utilise;
4. How the team will function and communicate during an event;
5. What key decisions they may need to make; and
6. The complexities associated with managing a crisis.

Training is to include scenario-based activities relevant to water supply operations and emergency construction activities to consider the range of risks they may be exposed to.

Ongoing EWS ECO training is to be conducted at least annually and new CRC staff that will be required in the ECO or to support it are to be provided introductory training as part of their induction.

In addition to EWS ECO training all ECO members and their alternates undertake QDMA training at least once every three years.

9.1.2 Exercises

Exercises are to be conducted annually and are facilitated by the MBPC with assistance from the LDC to facilitate engagement with the LDMG and use of the GUARDIAN IMS. Individuals who may fill a role in the EWS ECO are to attend.

Where possible, CRC will initiate additional exercises, such as field exercises, to further support continued training and effectiveness of ECO activations.

9.1.3 Testing Equipment

The Treatment Coordinator will maintain and test equipment needed during drought emergencies, including radios, satellite phones, cameras and monitoring equipment such as SCADA.

9.1.4 Feedback

Following all training or exercises, WW seek feedback from participants to evaluate the benefits, raise improvements for future exercises and highlight any further training requirements of the group. Feedback is provided to the W&W Management Team for consideration.

9.1.5 Training Records

Records of attendance at training and participation in exercises are maintained on attendance records and individual employee HR files.

10 Appendices

Appendix 1: Notification and Activation Flowchart

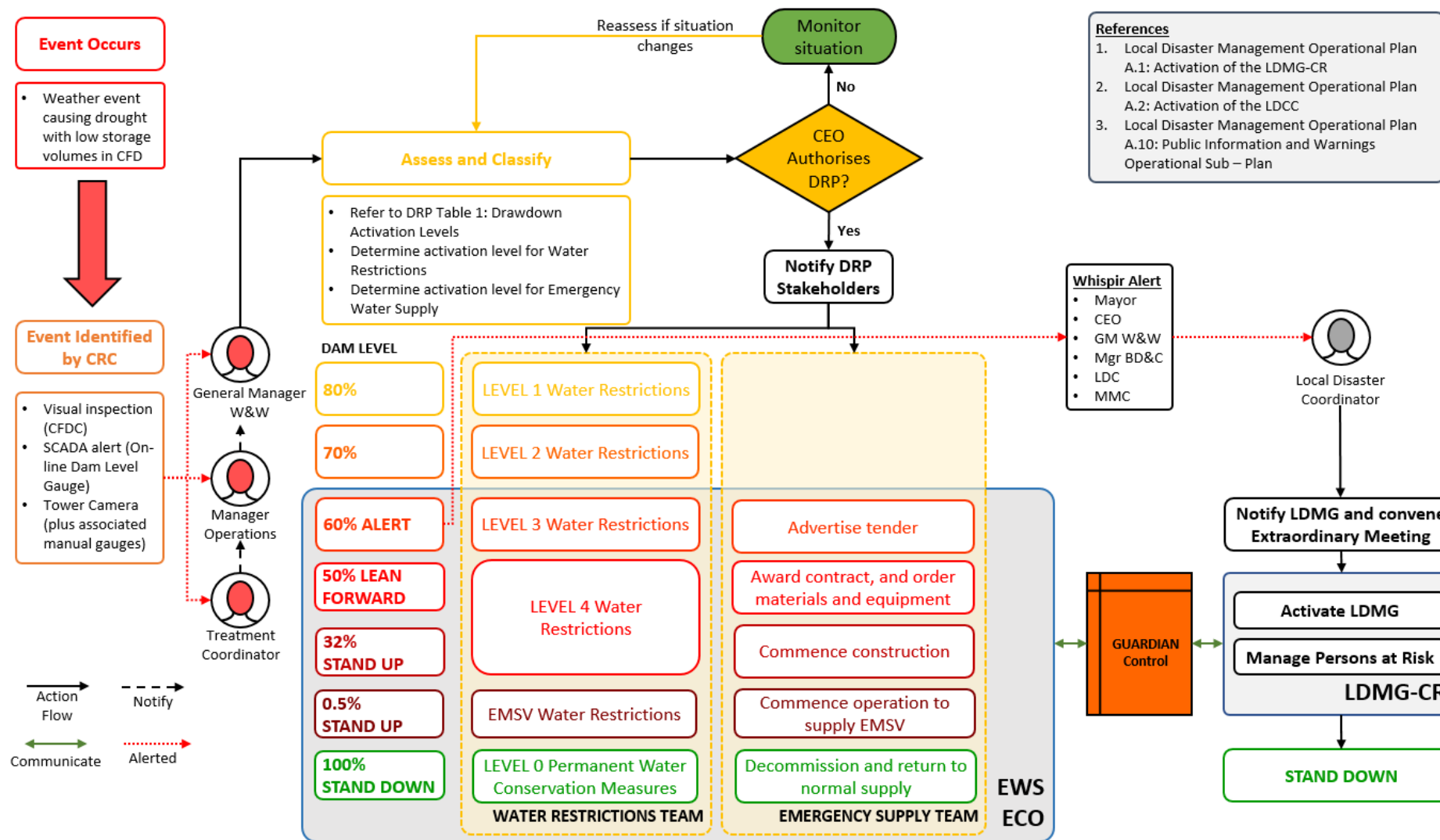
Appendix 2: Notification Listing Contacts

Appendix 3: Emergency Control Organisation Support Tools

Appendix 4: Water Restriction Measures ([#5638146](#))

- Level 0: Permanent Water Conservation Measures
- Level 1: Water Restrictions
- Level 2: Water Restrictions
- Level 3: Water Restrictions
- Level 4: Water Restrictions
- Essential Minimum Supply Volume Water Restrictions

Appendix 1: Notification and Activation Flowchart



Appendix 2: Notification Listing Contacts

Part A CRC Internal Stakeholders (*Whispir* notification at level 1, 2 and 3).

EWS ECO Role	Position title
	Mayor
	Chief Executive Officer
	Chair LDMG
	Divisional Councillor
	Local Disaster Coordinator
	1. General Manager WW
	2. Manager Bus Perf and Comp
	3. Manager Infrastructure
Water Restrictions Team Leader	1. Manager Operations
	2. Water Services Coordinator
	3. Treatment Coordinator
Emergency Water Supply Team Leader	1. Manager Infrastructure
	2. Principal Engineer Design & Delivery
	3. Senior Engineer Projects

Part B CRC External Stakeholders (*Whispir* notification at level 2 and 3).

DAM EAP Role	Position title
	Police Duty Phone
	QPS Northern Region DDC Chief Supt
	QPS North Reg Counter Terr Insp
	Queensland Fire and Emergency Serv
	Exec Officer FN DDMG
	FN DDMG
	FN DDMG
	Director Regional Operations QFES
	DNRME Incident Hotline
	DNRME Water Supply Regulation

Appendix 3: Emergency Control Organisation Support Tools

Event Log

Date:	Person/Shift:	Page No:
--------------	----------------------	-----------------

Record all major observations, decisions, actions, messages IN and OUT etc

Date	Time	From	To	Item/Event	Comments/Action	Decision

Appendix 4: Water Restriction Measures

Refer #5638144

LEVEL 0 Permanent Water Conservation Measures

Private gardens - watering	No manual or automated sprinklers, micro spray or drip watering systems to be used on Mondays. Odd numbered houses, sprinklers allowed on Tuesdays, Thursdays and Saturdays, between the hours of 5am and 9am and 5pm and 9pm only. Even numbered houses, sprinklers allowed Wednesdays, Fridays and Sundays, between the hours of 5am and 9am and 5pm and 9pm only. Hand held hoses, fitted with a trigger nozzle, watering cans or buckets can be used at any time.
Public parks and gardens and road reserves – watering Other than Parks and Gardens of significance or Heritage Gardens as determined by Council	No manual (sprinklers that are turned on and off by hand) or automated sprinklers, micro spray or drip watering systems to be used on Mondays. Sprinklers allowed on Tuesdays, Thursdays and Saturdays, between the hours of 5pm and 9am only. Hand held hoses, fitted with a trigger nozzle, watering cans or buckets can be used at any time.
Private gardens and public gardens - filling or topping up of ponds	No restrictions.
Fountains	No restrictions.
Paved areas - cleaning	Cleaning can be done using high pressure, low volume cleaners or a hand held hose with trigger nozzle at any time
Private swimming pools or spas - filling or topping up	Filling new pools – no restrictions. Existing pools and spas may be topped up as per garden watering times.
Farm dams and tanks - topping up	No restrictions.
Sports grounds - watering	Non active playing surfaces - Sprinklers allowed Wednesdays, Fridays and Sundays, between the hours of 5pm and 10am only. Active playing surfaces may be watered between 5pm and 10am any day
Commercial market garden or plant nursery - watering of plants	No restrictions.
Window cleaning	Windows can be cleaned at any time using – <ul style="list-style-type: none"> • High pressure, low volume cleaners • Trigger hoses • Buckets or watering cans
Mobile water tankers - filling	No restrictions.
Motor vehicle dealers' vehicles - cleaning	Hose must be fitted with a trigger control nozzle for cleaning vehicles by hand. Commercial car washing facilities that recirculate water should be used. High pressure, low volume cleaner should be used.
Food transport vehicles - cleaning	No restrictions.
Other vehicles (cars, trucks, boats, jet skis) - cleaning	Water must not be used to clean vehicles except by means of – <ul style="list-style-type: none"> a) Trigger hoses; b) Automatic washing systems which recycle water; or c) Commercial car wash facilities using trigger hoses; or d) Watering cans or buckets filled directly from taps. e) High pressure, low volume cleaner f) Boat motors may be flushed and rinsed after use
Construction industry - use of water in	No restrictions.

Failure to comply with Water Restrictions may incur penalties as described in s43 (3) of the Water Supply (Safety and Reliability) Act 2008.

LEVEL I Water Restrictions

Private gardens - watering	No manual or automated sprinklers, micro spray or drip watering systems to be used on Mondays. Odd numbered houses, sprinklers allowed on Tuesdays, Thursdays and Saturdays, between the hours of 6am and 8am and 6pm and 8pm only. Even numbered houses, sprinklers allowed Wednesdays, Fridays and Sundays, between the hours of 6am and 8am and 6pm and 8pm only. Hand held hoses, fitted with a trigger nozzle, watering cans or buckets can be used at any time.
Public parks and gardens and road reserves - watering Other than Parks and Gardens of significance or Heritage Gardens as determined by Council	No manual or automated watering systems to be used on Mondays. Sprinklers allowed on Tuesdays, Thursdays and Saturdays, between the hours of 10pm and 5am only. Hand held hoses, fitted with a trigger nozzle; watering cans or buckets can be used at any time.
Private gardens and public gardens - filling or topping up of ponds	Existing ponds can only be topped up to their normal level and only by means of hand held hoses, fitted with a trigger nozzle or by means of watering cans or buckets filled directly from taps.
Fountains	Fountains must not operate unless they recycle water. Water lost from fountains must not be replaced except by means of hand held hoses or by means of watering cans or buckets filled directly from taps.
Paved areas - cleaning	Hosing of paved areas is prohibited unless cleaning is required as a result of an accident, fire, health hazard or other emergency. The use of a bucket filled directly from a tap is permitted at any time.
Private swimming pools or spas - filling or topping up	Filling new pools – no restrictions. Existing pools and spas may be topped up as per garden watering times.
Farm dams and tanks - topping up	Farm dams and tanks must not be topped up except - Dams or tanks providing water for fire fighting, public health or stock watering purposes but only to the extent necessary to reasonably provide for those purposes; or In the case of other dams or tanks, with the written permission of the Authority.
Sports grounds - watering	Sprinklers, micro spray or drip systems, can be used between 6.00 a.m. to 8.00 a.m. and 6.00 p.m. to 8.00 p.m. Hand held hoses, watering cans or buckets could be used at any time. Active playing surfaces may be watered prior to events to maintain the ability to be used for the intended purpose.
Commercial market garden or plant nursery - watering of plants	No restrictions.
Window cleaning	Windows can be cleaned at any time using – • High pressure, low volume cleaners • Trigger hoses • Buckets or watering cans
Mobile water tankers - filling	Mobile water tankers must not be filled except – Between the hours of 8.00 a.m. and 8.00 p.m. with the written permission of the Authority; or Tankers supplying water for use inside domestic premises, or for fire fighting or stock watering purposes.
Motor vehicle dealers' vehicles - cleaning	Water must not be used to clean vehicles except by means of – (a) Commercial car washing facilities that recycle water (b) Watering cans or buckets filled directly from taps; or (c) Trigger hoses, which can be used only to rinse vehicles after washing.
Food transport vehicles - cleaning	Water must not be used to clean vehicles except by means of – (a) Automatic washing systems which recycle water; or (b) Trigger hoses; (c) Commercial car wash facilities using trigger hoses; or (d) Watering cans or buckets filled directly from taps. (e) High pressure, low volume cleaner
Other vehicles (cars, trucks, boats, jet skis) - cleaning	Water must not be used to clean vehicles except by means of – (a) Automatic washing systems which recycle water; or (b) Commercial car wash facilities using trigger hoses; or (c) Watering cans or buckets filled directly from taps; or (d) Trigger hoses, which can be used only to rinse vehicles after washing. (e) Boat motors may be flushed and rinsed after use
Construction industry - use of water in	Unless otherwise exempted by the Authority in writing, hoses must not be used except trigger hoses.
Any purpose not included in any other items of this column other than for use inside domestic premises and for domestic and farm animals	Water must not be used without the written permission of the Authority.
New Lawns, Residential	New lawns can be watered on the day of installation for a period of one hour at any time with sprinkler with timer shut off. On any day between the hours of 6am and 8am and 6pm and 8pm for a period of 14 days after the installation date (receipt of installation required), by sprinkler with timer shut off. After 14 days from the day of establishment all level 1 water restrictions apply including watering times – • Odd numbered properties - between 6am and 8am and 6pm and 8pm, Tuesdays, Thursdays and Saturdays • Even numbered properties between 6am and 8am and 6pm and 8pm Wednesdays, Fridays and Sundays. Hand held hoses fitted with a trigger nozzle can be used at any time.

Failure to comply with Water Restrictions may incur penalties as described in s43 (3) of the Water Supply (Safety and Reliability) Act 2008.

LEVEL 2 Water Restrictions

Private gardens - watering	Watering by manual or automated sprinklers, micro spray or drip watering systems and hand held hoses are prohibited on Mondays. Odd numbered houses, sprinklers allowed on Tuesdays, and Saturdays, between the hours of 6am and 7am and 6pm and 7pm only. Even numbered houses, sprinklers allowed Wednesdays, and Sundays, between the hours of 6am and 7am and 6pm and 7pm only. Hand held hoses, fitted with a trigger nozzle can be used on any day except Mondays. Watering cans or buckets can be used at any time.
Public parks and gardens and road reserves - watering other than Parks and Gardens of significance or Heritage Gardens as determined by Council	Watering by attended hand held hose, fitted with a trigger nozzle, only between 6am and 7am and 6pm and 7pm only.
Private gardens and public gardens - filling or topping up of ponds	Newly constructed ponds must not be filled for the first time without the written permission of the Authority. Existing ponds can only be topped up to their normal level and only by means of hand held hoses, fitted with a trigger nozzle, or by means of watering cans or buckets filled directly from taps.
Fountains	Fountains must not operate unless they recycle water. Water lost from fountains must not be replaced.
Paved areas - cleaning	Hosing of paved areas is prohibited unless cleaning is required as a result of an accident, fire, health hazard or other emergency. The use of a bucket filled directly from a tap is permitted at any time.
Private swimming pools or spas - filling or topping up	Filling new pools – no restrictions. Existing pools and spas may be topped up as per garden watering times.
Farm dams and tanks - topping up	Farm dams and tanks must not be topped up except - Dams or tanks providing water for fire fighting, public health or stock watering purposes but only to the extent necessary to reasonably provide for those purposes; or In the case of other dams or tanks, with the written permission of the Authority.
Sports grounds - watering	Non-active playing surfaces must not be watered without the written permission of the Authority. Active playing surfaces can only be watered using - Sprinklers, micro sprays or drip systems between the hours of 6.00 a.m. to 8.00 a.m. and 6.00 p.m. to 8.00 p.m., or With hand held hoses immediately before or at the time of use; or With watering cans or buckets filled directly from taps.
Commercial market garden or plant nursery - watering of plants	No restrictions
Window cleaning	Water must not be used to clean windows except by means of a bucket or watering can filled directly from a tap.
Mobile water tankers - filling	Mobile water tankers must not be filled except – Between the hours of 8.00 a.m. and 8.00 p.m. with the written permission of the Authority; or Tankers supplying water for use inside domestic premises, or for fire fighting or stock watering purposes.
Motor vehicle dealers' vehicles - cleaning	Water must not be used to clean vehicles except by means of – (a) Commercial car washing facilities that recycle water (b) Watering cans or buckets filled directly from taps; or (c) Trigger hoses, which can be used only to rinse vehicles after washing.
Food transport vehicles - cleaning	Water must not be used to clean vehicles except by means of – (a) Automatic washing systems which recycle water; or (b) Trigger hoses; (c) Watering cans or buckets filled directly from taps (d) High pressure, low volume cleaner
Other vehicles (cars, trucks, boats, jet skis) - cleaning	Water must not be used to clean vehicles except by means of – (a) Automatic washing systems which recycle water; or (b) Commercial car wash facilities using trigger hoses; or (c) Watering cans or buckets filled directly from taps (d) Boat motors may be flushed and rinsed after use for a maximum 5 mins
Construction industry - use of water in	Unless otherwise exempted by the Authority in writing, hoses must not be used except trigger hoses.
Any purpose not included in any other items of this column other than for use inside domestic premises and for domestic and farm animals	Water must not be used without the written permission of the Authority.
New Lawns, Residential	New lawns can be watered on the day of installation for a period of one hour at any time with sprinkler with timer shut off. On any day between the hours of 6am and 7am and 6pm and 7pm for a period of 14 days after the installation date (receipt of installation required), by attended hand held hose or sprinkler with timer shut off. After 14 days from the day of establishment all level 2 water restrictions apply including watering times – • Odd numbered properties - between 6am and 7am and 6pm and 7pm, Tuesdays and Saturdays • Even numbered properties between 6am and 7am and 6pm and 7pm, Wednesdays and Sundays. Hand held hoses fitted with a trigger nozzle can be used at any time except Mondays. Watering cans or buckets can be used at any time.

Failure to comply with Water Restrictions may incur penalties as described in s43 (5) of the Water Supply (Safety and Reliability) Act 2008.

LEVEL 3 Water Restrictions

Private gardens - watering	Sprinklers, micro spray and drip systems must not be used at any time. Hand held hoses, fitted with a trigger nozzle, can be used between 6am and 8am and 6pm and 8pm. Watering cans or buckets filled directly from taps can be used at any time.
Public parks and gardens and road reserves - watering Other than Parks and Gardens of significance or Heritage Gardens as determined by Council	Watering is prohibited at all times.
Private gardens and public gardens - filling or topping up of ponds	Newly constructed ponds must not be filled. Existing ponds can only be topped up to their normal level and only by means of watering cans or buckets filled directly from taps.
Fountains	Fountains must not operate without the permission of the authority.
Paved areas - cleaning	Hosing of paved areas is prohibited unless cleaning is required as a result of an accident, fire, health hazard or other emergency. The use of a bucket filled directly from a tap is permitted at any time.
Private swimming pools or spas - filling or topping up	Newly constructed swimming pools and spas must not be filled for the first time without the written permission of the Authority. Existing swimming pools and spas must not be topped up except by means of hand held hoses or by means of watering cans or buckets filled directly from taps.
Farm dams and tanks - topping up	Farm dams and tanks must not be topped up except - Dams or tanks providing water for fire fighting, public health or stock watering purposes but only to the extent necessary to reasonably provide for those purposes; or In the case of other dams or tanks, with the written permission of the Authority.
Sports grounds - watering	Non-active playing surfaces must not be watered without the written permission of the Authority. Active playing surfaces must not be watered except with hand held hoses on surfaces to be used for a scheduled Regional or State professional sporting competition; or with watering cans or buckets filled directly from taps.
Commercial market garden or plant nursery - watering of plants	Sprinklers must not be used except between the hours of 7.00pm to 7.00am. Hand held hoses, watering cans or buckets can be used at any time.
Window cleaning	Water must not be used to clean windows except by means of a bucket or watering can filled directly from a tap.
Mobile water tankers - filling	Mobile water tankers must not be filled except - Between the hours of 8.00 a.m. and 8.00 p.m. with the written permission of the Authority; or Tankers supplying water for use inside domestic premises, or for fire fighting or stock watering purposes.
Motor vehicle dealers' vehicles - cleaning	Water must not be used to clean vehicles except by means of - (a) Commercial car washing facilities that recycle water. (b) Watering cans or buckets filled directly from taps.
Food transport vehicles - cleaning	Water must not be used to clean vehicles except by means of - (a) Automatic washing systems which recycle water; or (b) Watering cans or buckets filled directly from taps.
Other vehicles (cars, trucks, boats, jet skis) - cleaning	Water must not be used to clean vehicles except by means of - (a) Automatic washing systems which recycle water; or (b) Commercial car wash facilities using trigger hoses; or (c) Watering cans or buckets filled directly from taps; or (d) Boat motors may be flushed and rinsed after use for a maximum 5mins.
Construction industry - use of water in	Unless otherwise exempted by the Authority in writing, hoses must not be used except trigger hoses.
Any purpose not included in any other items of this column other than for use inside domestic premises and for domestic and farm animals	Water must not be used without the written permission of the Authority.
New Lawns, Residential	New lawns can be watered on the day of installation for a period of one hour at any time with sprinkler with timer shut off. On any day between the hours of 6am and 8am and 6pm and 8pm for a period of 14 days after the installation date (receipt of installation required), by sprinkler with timer shut off. After 14 days from the day of establishment all level 1 water restrictions apply including watering times - • Odd numbered properties - between 6am and 8am and 6pm and 8pm, Tuesdays, Thursdays and Saturdays • Even numbered properties - between 6am and 8am and 6pm and 8pm Wednesdays, Fridays and Sundays. Hand held hoses fitted with a trigger nozzle can be used at any time.

Failure to comply with Water Restrictions may incur penalties as described in s43 (5) of the Water Supply (Safety and Reliability) Act 2008.

LEVEL 4 Water Restrictions

Private gardens - watering	Sprinklers, micro spray and drip systems must not be used at any time. Hoses must not be used at any time. Watering cans or buckets filled directly from taps can be used between the hours of 7.00am to 8.00am and 7.00pm to 8.00pm.
Public parks and gardens and road reserves - watering Other than Parks and Gardens of significance or Heritage Gardens as determined by Council	Watering is prohibited at all times.
Private gardens and public gardens - filling or topping up of ponds	Existing ponds sustaining fish or bird life can only be topped up to their normal level and only by means of watering cans or buckets filled directly from taps. Other ponds must not be topped up or filled.
Fountains	Fountains must not operate without the permission of the Authority.
Paved areas - cleaning	Water must not be used to clean paved areas unless cleaning is required as a result of an accident, fire, health hazard or other emergency.
Private swimming pools or spas - filling or topping up	Newly constructed swimming pools and spas must not be filled. Existing swimming pools and spas must not be topped up or filled.
Farm dams and tanks - topping up	Farm dams and tanks must not be topped up except - Dams or tanks providing water for fire fighting, public health or stock watering purposes but only to the extent necessary to reasonably provide for those purposes; or In the case of other dams or tanks, with the written permission of the Authority.
Sports grounds - watering	Non-active playing surfaces must not be watered. Active playing surfaces must not be watered except with hand held hoses on surfaces to be used for a scheduled Regional or State professional sporting competition; With hand held hoses; or With watering cans or buckets filled directly from taps.
Commercial market garden or plant nursery - watering of plants	Sprinklers must not be used without the written permission of authority. Hand held hoses, watering cans or buckets can be used at any time.
Window cleaning	Water must not be used to clean windows. <u>Exemption from Restrictions</u> The restrictions on the use of water for cleaning windows do not apply where cleaning is required as a result of an accident, fire, health hazard or other emergency.
Mobile water tankers - filling	Mobile water tankers must not be filled except – Between the hours of 8.00 a.m. and 8.00 p.m. with the written permission of the Authority; or Tankers supplying water for use inside domestic premises, or for fire fighting or stock watering purposes.
Motor vehicle dealers' vehicles - cleaning	Water must not be used to clean vehicles except by means of – (a) Commercial car washing facilities that recycle water (b) Watering cans or buckets filled directly from taps
Food transport vehicles - cleaning	Water must not be used to clean vehicles except by means of – (a) Automatic washing systems which recycle water; or (b) Watering cans or buckets filled directly from taps.
Other vehicles (cars, trucks, boats, jet skis) - cleaning	Water must not be used to clean vehicles unless cleaning is required for health or safety reasons. Cleaning for health and safety reasons must be undertaken using – Water must not be used to clean vehicles except by means of – (a) Automatic washing systems which recycle water; or (b) Commercial car wash facilities using trigger hoses or; (c) Watering cans or buckets filled directly from taps; or (d) Trigger hoses, which can be used only to rinse vehicles after washing. (e) Boat motors may be flushed and rinsed after use for a maximum 5 mins.
Construction industry - use of water in	Unless otherwise exempted by the Authority in writing, hoses must not be used except trigger hoses. Water must not be used for dust suppression unless the water is recycled water of the appropriate quality for the purpose.
Any purpose not included in any other items of this column other than for use inside domestic premises and for domestic and farm animals	Water must not be used without the written permission of the Authority.
New Lawns, Residential	New lawns can be watered on the day of installation for a period of one hour at any time with sprinkler with timer shut off. On any day between the hours of 6am and 8am and 6pm and 8pm for a period of 14 days after the installation date (receipt of installation required), by sprinkler with timer shut off. After 14 days from the day of establishment all level 1 water restrictions apply including watering times – • Odd numbered properties - between 6am and 8am and 6pm and 8pm, Tuesdays, Thursdays and Saturdays • Even numbered properties between 6am and 8am and 6pm and 8pm Wednesdays, Fridays and Sundays. Hand held hoses fitted with a trigger nozzle can be used at any time.

Failure to comply with Water Restrictions may incur penalties as described in s43 (5) of the Water Supply (Safety and Reliability) Act 2008.

ESSENTIAL MINIMUM SUPPLY VOLUME Water Restrictions

Residential	<p>Internal use targets:</p> <ul style="list-style-type: none"> • Showers – reduction to 4-minute shower per person per day • Baths – minor use (reduction with exception of infants) • Toilets – reduction to 5 flushes per person per day • Washing machines – reduction to 3 loads per household per week • Taps/sinks – reduction to 14 uses per person per day (average of 1.3 L per use) • Dishwashers – all loads to be full and on “eco” setting <p>No external use – with exception of:</p> <ul style="list-style-type: none"> • Cleaning where required as a result of an accident, fire, health hazard or other emergency <p>Exemptions must be provided by the Authority in writing to allow any other critical external use.</p>
Non-residential	<p>Ban on external use – with exception of:</p> <ul style="list-style-type: none"> • Cleaning where required as a result of an accident, fire, health hazard or other emergency • Dams or tanks providing water for firefighting or public health • Major recreational areas using recycled water or rainwater/stormwater • Commercial nurseries and Car dealers/washers cannot operate without recycling <p>Exemptions must be provided by the Authority in writing to allow any other critical external use.</p>

Failure to comply with Water Restrictions may incur penalties as described in s43 (5) of the Water Supply (Safety and Reliability) Act 2008.