



**Colac Otway**  
SHIRE

**COUNCIL MEETING**

**AGENDA**

**Wednesday 24 August 2022**

**at 4:00 PM**

**COPACC**

**95 - 97 Gellibrand Street, Colac**

**Next Council Meeting: 28 September 2022**



# COLAC OTWAY SHIRE COUNCIL MEETING

Wednesday 24 August 2022

## TABLE OF CONTENTS

1	Declaration of Opening of Meeting .....	4
2	Present.....	4
3	Apologies and Leave of Absence .....	4
4	Welcome and Acknowledgement of Country.....	4
5	Question Time .....	5
6	Petitions / Joint Letters.....	5
7	Declarations of Interest .....	5
8	Confirmation of Minutes .....	5
9	Officer Reports.....	6
9.1	Domestic Wastewater Management Plan for Adoption.....	6
9.2	Consideration of the Public Toilet Strategy .....	326
9.3	Combined Amendment C111cola and Planning Permit Application PP219/2020 - Consideration of Planning Panel Report.....	439
9.4	Asset Management Policy For Adoption.....	507
9.5	Nomination of a Substitute Representative for Municipal Association of Victoria (MAV) Special State Council meeting.....	517
9.6	Audit and Risk Committee Minutes - 25 May 2022 .....	520
9.7	Authorisation of an Officer under the Planning and Environment Act 1987.....	548
9.8	Report of Informal Meetings of Councillors .....	552
10	Delegate Reports and Notices of Motion .....	560
10.1	Report from Delegate - 2022 National General Assembly in Canberra - 19-22 June 2022...560	
10.2	Report from Delegate - Municipal Associations of Victoria (MAV) State Council meeting held on Friday 24 June 2022 .....	573

10.3 Notice of Motion - Governance Rules - Submissions Committee .....616

10.4 Notice of Motion - Recording of Responses to Public Questions in the Meeting Minutes...618

10.5 Notice of Motion - Foot and Mouth Disease - Advocacy for Action .....621

# COLAC OTWAY SHIRE COUNCIL MEETING

NOTICE is hereby given that the next **COUNCIL MEETING OF THE COLAC OTWAY SHIRE COUNCIL** will be held at COPACC on Wednesday 24 August 2022 at 4:00 PM.

## AGENDA

### **1 DECLARATION OF OPENING OF MEETING**

#### **OPENING PRAYER**

*Almighty God, we seek your blessing and guidance in our deliberations on behalf of the people of the Colac Otway Shire. Enable this Council's decisions to be those that contribute to the true welfare and betterment of our community.*

*AMEN*

### **2 PRESENT**

### **3 APOLOGIES AND LEAVE OF ABSENCE**

### **4 WELCOME AND ACKNOWLEDGEMENT OF COUNTRY**

Colac Otway Shire acknowledges the original custodians and law makers of this land, their elders past, present and emerging and welcomes any descendants here today.

#### **RECORDING AND PUBLICATION OF MEETINGS**

Please note: All Council meetings will be live streamed and recorded when when the meeting is held either at COPACC or online. This includes the public participation sections of the meetings. When meetings are held in other locations, Council will endeavour to make an audio recording of the meeting for community access. Matters identified as confidential items in the Agenda will not be live streamed or recorded regardless of venue of mode.

By participating in open Council meetings, individuals consent to the use and disclosure of the information they share at the meeting (including any personal and/or sensitive information).

As soon as practicable following each open Council meeting, the live stream recording will be accessible on Council's website. Recordings are also taken to facilitate the preparation of the minutes of open Council and Committee meetings and to ensure their accuracy. Live stream and audio recordings will be retained by Council for a period of four years.

As stated in the Governance Rules, other than an official Council recording, no video or audio recording of proceedings of Council Meetings will be permitted without specific approval by resolution of the relevant Council Meeting.

This meeting will be livestreamed to the public via Council's YouTube channel (search Colac Otway Shire Council at [www.youtube.com](http://www.youtube.com)).

## **5 QUESTION TIME**

A maximum of 30 minutes is allowed for question time. Any person wishing to participate in public question time by videoconference will need to register their intention to do so by contacting the shire prior to 5pm on Monday 22 August 2022. To ensure that each member of the gallery has the opportunity to ask questions, it may be necessary to allow a maximum of two questions from each person in the first instance. You must ask a question. Question time is not a forum for public debate or statements.

1. Questions received in writing prior to the meeting. Written questions must be received by 5pm on Monday 22 August 2022.
2. Questions via videoconference by prior arrangement.
3. Questions from the floor.

## **6 PETITIONS / JOINT LETTERS**

Nil

## **7 DECLARATIONS OF INTEREST**

A Councillor who has declared a conflict of interest, must leave the meeting and remain outside the room while the matter is being considered, or any vote is taken.

## **8 CONFIRMATION OF MINUTES**

- **Council Meeting held on 27 July 2022.**

### ***RECOMMENDATION***

***That Council confirm the minutes of the Council Meeting held on 27 July 2022.***

## Item: 9.1

# Domestic Wastewater Management Plan for Adoption

<b>OFFICER</b>	James McDonald
<b>GENERAL MANAGER</b>	Heath Chasemore
<b>DIVISION</b>	Infrastructure and Operations
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"><li>1. DWMP Review 2021 – Operational Document for Council Adoption [9.1.1 - 110 pages]</li><li>2. DWMP Review 2021 – Technical Document for Council Adoption [9.1.2 - 204 pages]</li></ol>

## 1. PURPOSE

To present the 2021 Domestic Wastewater Management Plan (DWMP) to Council for adoption.

## 2. EXECUTIVE SUMMARY

Council adopted its Domestic Wastewater Management Plan (DWMP) at the 25 November 2015 Council Meeting. This plan is required to be reviewed every 5 years under State Environment Protection Policy Waters of Victoria (SEPP).

A review has now been conducted in accordance with statutory requirements involving Council, the original author of the 2015 plan Whitehead and Associates and the Water Authorities.

The outcome of the review and the changes to the plan were tabled at the 23 March 2022 Council Meeting at which it was resolved to place the Domestic Wastewater Management Plan on public exhibition for a period of eight weeks.

The draft plan was placed on exhibition from 29 April to the 24 June 2022, seeking submissions from the community and key stakeholders. A variety of methods were used to gain public feedback which included media releases, online information with FAQs, email contact, newspaper advertising and local print communications and three open door community drop-in sessions.

No objections to the review or submissions for changes to the plan were received during the public exhibition period.

A written complaint was received from a Forrest ratepayer during the public exhibition period relating to Forrest wastewater issues, and this was responded to in writing on 10 June 2022. It was neither in support or opposition to the Domestic Wastewater Management Plan review.

### 3. RECOMMENDATION

*That Council:*

- 1. Notes the draft Domestic Wastewater Management Plan 2021 was exhibited seeking community feedback from 29<sup>th</sup> April until 24<sup>th</sup> June 2022**
- 2. Notes that no submissions were received on the draft Domestic Wastewater Management Plan 2021.**
- 3. Adopts the Domestic Wastewater Management Plan 2021 as per Attachment 1 Operational Plan and Attachment 2 Technical Document.**

### 4. KEY INFORMATION

Council's DWMP sets out how Council manages the risk to public health and the environment from effluent that is discharged from onsite wastewater management systems (OWMS). The framework for managing OWMS is specified as part of the State Environmental Protection Policy Waters of Victoria Clause 29 which requires the implementation and review of Council's DWMP. Compliance with the SEPP also enables Council to continue development in declared water supply catchments.

This review will ensure there is continued strategic direction for managing OWMS. The review also sets out a new approach for having a prioritised auditing program in our declared water supply catchments.

The DWMP gives guidance to those preparing Land Capability Assessments, provides a risk assessment tool for planning and development in unsewered areas and assists with the permit and application process for septic tank systems under the *Environment Protection Act 2017* and *Environment Protection Regulations 2021*.

The review process was facilitated by Whitehead and Associates who developed the original plan in 2015 with Barwon Water and Wannon Water actively involved in the review process. This review focused on its 2015 action plan and what was achieved. It has also identified changes to regulatory controls and the future direction Council needs to take in order to satisfy the requirements of the water authorities.

Information in relation to the key changes to the DWMP which have been incorporated through this review include:

#### **1. Recent legislative and policy changes**

On 1 July 2018, the new *Environment Protection Act 2017* (the Act) came into force with the General Environment Duty (GED) taking affect with a prevention of harm approach. This was followed by the *Environment Protection Regulations 2021*. This means that Council under the Act must consider a precautionary and proportionate approach to managing the risks from OWMS and when it comes to enforcement, consider what is reasonably practicable in terms of the controls needed for harm reduction. It is now an offence for failing to prevent harm from reasonably foreseeable risks.

## **2. Updated Risk Assessment Framework (RAF), updating the individual constraints for lots, updating the Sensitivity Rating Mapping (Figure 3) and revising the Locality Reports.**

Where the sensitivity rating of a parcel or lot is thought to be incorrect from either observation or from Land Capability Assessment information, or where there have been new lots created as part of planning changes, the RAF approved data and the final complied lot constraints data sheets were updated. The data compiles the sensitivity rating for each site based on a risk assessment methodology and site constraints (soil type, slope, useable lot space, climate, overlays ES03). This sensitivity rating provides direction on the nature and complexity of information to be submitted to Council with planning permit applications and Permit to Install applications made to the Health Protection Unit.

## **3. Revised Council priorities.**

Alignment has been achieved with the 2021-2025 Council Plan vision where there is a focus on the environment and sustainability, and also a strong connection to the pillar valuing our natural and built environment.

The revised DWMP has incorporated reference to the priority of Forrest being supported for sewer reticulation given the challenges that have been identified over the past four years. Complaints have ranged from odour to offsite discharge. There are inadequate wastewater systems and constraints to economic development due to small allotments being incapable of containing treated wastewater. It is noted that Barwon Water are conducting a review of small towns across the region to identify townships with priority for sewer implementation over time, and that Forrest is a priority in this work.

## **4. Reviewed Council's Domestic Wastewater Management (DWM) procedures and processes including the evaluation of DWM system trends.**

Since November 2015 (when Council's original plan was developed) to June 2021 there have been 486 applications for Permits to Install processed (approximately 70 per year). For the 8,886 lots that are unsewered, there are approximately 3,884 OWMS records on file. It is expected that the number is not a true reflection on the total number of wastewater systems in the municipality as records were only required post 1970 and due to discrepancies in data management upon amalgamation.

The Health Protection team have developed amended standard operating procedures for undertaking audits of properties with wastewater systems and have adjusted their processes to accord with requirements under the new legislation.

## **5. Changes to technical data or recent advances in technology and management practices**

The silo or climate data has been updated which reflects more accurate rainfall and evaporation rates in certain localities (e.g. Beech Forrest), and sizing tables used to assist in calculating treatment system size for Lavers Hill have been updated. This improves the accuracy when sizing land application areas for systems. Management practices that have changed are included as part of the Environment Protection Regulatory changes.

## **6. Update to the 2015 Operational Plan.**

The 2021 operational plan lists 12 action items compared to 18 in the 2015 plan. The action items that changed were:

- Action item 3 data base management and 4 data collection has been condensed into improvement of date collection (reduction of 2).
- Action item 5 removed – trained officers in GIS (reduction of 1).



- Action item 7 risk-based compliance and monitoring has been included into Septic tank permit conditions and compliance (reduction of 1).
- Action item 15 external auditing and 16 future planning removed from action plan list (reduction of 2).

The two key changes of the action plan were in relation to:

- Action Plan Item (1) - policies and procedures. A standard operating procedure (SOP) is in place to ensure our approach is in line with the EPA toolkit for Onsite Wastewater Management (OWM) published last year.
- Action Plan Item (7) - Implement the Risk-based Compliance Monitoring Program has been included into Septic Tank Permit Conditions and Compliance. Our auditing and compliance resources will be reduced from 5 days of Officer time per week to 1 day per week of Officer time to assess and follow up poorly performing systems due to funding constraints. Our compliance approach will be proportionate to the level of risk and as per the EPA Onsite Wastewater Management Local Government Toolkit.

## 5. CONSIDERATIONS

### **Overarching Governance Principles (s(9)(2) LGA 2020)**

This review is being undertaken in accordance with Clause 29 of State Environmental Protection Policy Waters of Victoria that states Councils must develop and implement a domestic wastewater management plan. The governance approach that Council will follow will be in accordance with the Environment Protection Authority of Victoria compliance and enforcement guidance.

### **Policies and Relevant Law (s(9)(2)(a) LGA 2020)**

The relevant laws that apply to onsite wastewater are contained within the *Local Government Act 2020*, *Environment Protection Act 2017*, *Water Act 1989*, *Planning and Environment Act 1987*, *State Environmental Protection Policy Waters of Victoria 2018 (SEPP)*, *Catchment and Land Protection Act 1994* and *Victorian Building Regulations 2018*.

The Ministerial Guideline 1 - '*Planning Permit Applications in Open Potable Water Supply Catchment Areas*' (DSE 2012) states that in order for the density requirements to be relaxed for dwellings in water catchments to less than 1 dwelling per 40 hectares the Water Corporations must be satisfied that Council has prepared, adopted and is implementing its DWMP in accordance with DWMP requirements.

It is noted that the SEPP and the Ministerial Guideline 1 is currently under review.

### **Environmental and Sustainability Implications (s(9)(2)(c) LGA 2020)**

Sound on-site treatment and management of wastewater in rural areas is critical to avoiding well-known health impacts from pathogens and viruses found in effluent. This review will improve environmental and sustainable outcomes for all unsewered localities through improved wastewater quality and management of the receiving environments. The audit program in our declared catchments should further protect the quality of our community's drinking water supply.

### **Community Engagement (s56 LGA 2020 and Council's Community Engagement Policy)**

The draft DWMP was placed on public exhibition for eight weeks, which allowed sufficient time for interested land holders and the general community to read the technical documentation and make

submissions. Engagement included media releases, local paper advertising, website updates and 3 drop-in information sessions held in Beeac, Forrest and Beech Forrest.

### **Public Transparency (s58 LGA 2020)**

The Amendment has been exhibited in accordance with the relevant legislation. All information pertaining to the DWMP has been fully accessible to the public and any interested parties, namely Land Capability Assessors, the Water Authorities and members of the community. The adopted plan will be available online.

### **Alignment to Plans and Strategies**

Alignment to Council Plan 2021-2025:

Theme 2 - Valuing the Natural and Built Environment

Objective 3: Protect and enhance the natural environment

The current Council Plans has a focus on the environment and sustainability. The DWMP has a strong connection to the pillar valuing our natural and built environment. The DWMP places a significant value on the natural environment as the plan lists action that are needed to be taken and the controls required to maintain and protect the Shire's environment.

### **Financial Management (s101 Local Government Act 2020)**

There is a cost associated with the implementation of the DWMP. Onsite wastewater applications fees and charges are set as a statutory fee and the fees generated from the applications do not cover the time and resources needed to fulfil all of the DWMP activities. The action plan contained in the review is based on an assumption that Council will only be able to carry out a limited ongoing audit and compliance program (approximately 1 officer day per week of existing resource) to meet the Water Authority requirements due to competing priorities in the Council budget.

### **Service Performance (s106 Local Government Act 2020)**

As noted above, the action plan included in the draft DWMP Review would limit the impact of on-going auditing and compliance work by officers to one day per week. It is considered this could be undertaken without significant impact on the service provided by the Health Protection Unit.

### **Risk Assessment**

The draft DWMP includes a thorough assessment of on-site wastewater risks and establishes an action plan that aims to manage these risks in an affordable manner for Council.

### **Communication/Implementation**

Should Council support the recommendation, the Domestic Wastewater Management Plan will be adopted for implementation. This will be communicated to key stakeholders such as Environmental Protection Authority of Victoria, Department of Land Water Planning and the Environment and Land Capability Assessors.

### **Human Rights Charter**

There are no proposals in the draft DWMP Review which would compromise human rights principles.

### **Officer General or Material Interest**

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.

## **Options**

### Option 1 – Adopt the DWMP following public exhibition

This option is recommended by officers and will assist Council in meeting its regulatory responsibilities. There are no proposed changes following the public exhibition period. It is important that this review is endorsed as it updates the plan to reflect recent changes to legislation and will provide continued public and environmental health protection to the community. It will also enable continued development to occur in the declared water catchment. Through completion of this review, Council is meeting its statutory obligations under the State Protection Policy Waters of Victoria. This is also consistent with the governance principles of the *Local Government Act 2020*.

### Option 2 – Not proceed with the review for endorsement

This option is not recommended by officers as it is critical that Council maintain a current and up to date DWMP under its statutory responsibilities. It is also important in maintaining flexibility for water authorities to support development occurring in our water catchments which will not occur if this review is rejected. The document has already undergone a comprehensive technical review and extensive community consultation.



# Whitehead & Associates

## Environmental Consultants

197 Main Road Cardiff NSW 2285 Australia  
Telephone +61 2 4954 4996  
Email mail@whiteheadenvironmental.com.au

# Colac Otway Shire Council

## Domestic Wastewater Management Plan

### Operational Plan

**December 2021**

Prepared for: Colac Otway Shire Council

Prepared by: Jasmin Kable  
Whitehead & Associates Environmental Consultants Pty Ltd  
197 Main Road  
CARDIFF  
NSW 2285

Telephone: 02 4954 4996  
Email: jasminkable@whiteheadenvironmental.com.au

## Document Control Sheet

Document and Project Details					
<b>Document Title:</b>	Colac Otway Shire Council Domestic Wastewater Management Plan – Operational Plan				
<b>Author:</b>	Jasmin Kable				
<b>Project Manager:</b>	Mark Saunders				
<b>Date of Issue:</b>	20/12/2021				
<b>Job Reference:</b>	1307 COS Review DWMP_Operational Document_011.docx				
<b>Synopsis:</b>	<p>This Operational Plan has been developed to accompany the Technical Document (revised 2015), which together forms the Domestic Wastewater Management Plan (DWMP), to identify domestic wastewater management (DWM) issues within the Shire and recommend management actions to ensure potential risks are appropriately managed. A key component of the DWMP is a domestic wastewater management risk assessment and mapping that has been completed for the Shire. This assessment identifies prioritised districts that are in need of improved domestic wastewater management practices. The DWMP also provides technical guidance and a strategy for community education. A framework for the regulation of domestic wastewater management system performance is also provided.</p>				
Client Details					
<b>Client:</b>	Colac Otway Shire Council				
<b>Primary Contact:</b>	James McDonald, Health Protection Coordinator Telephone (03) 5232 9558				
Document Distribution					
Version Number	Date	Status	DISTRIBUTION – NUMBER OF COPIES (p – print copy; e – electronic copy)		
			Client	Other	Other
003	24/04/15	DRAFT	1e	-	-
004	05/05/15	Revised DRAFT	1e	-	-
005	10/06/15	Draft FINAL	1e		
006	02/07/15	FINAL	1e		
007	14/07/15	FINAL	1e		
008	04/11/15	FINAL	1e, 3p		
009	08/05/18	Review	1e		
010	01/09/21	Review DRAFT	1e		
011	20/12/21	Review	1e		
Document Verification					
<b>Checked by:</b> Mark Saunders			<b>Issued by:</b> Jasmin Kable		

## Disclaimer

The information contained in this report is based on independent research undertaken by Whitehead & Associates Environmental Consultants Pty Ltd (W&A). To our knowledge, it does not contain any false, misleading or incomplete information. Recommendations are based on an appraisal of the site conditions subject to the limited scope and resources available for this project, and follow relevant industry standards. The work performed by W&A included a limited system audit and site and soil investigation in addition to a desktop review, and the conclusions made in this report are based on the information gained and the assumptions as outlined. Under no circumstances can it be considered that these results represent the actual conditions throughout the entire Shire due to the regional scale of this study.

## Copyright Note

© Whitehead & Associates Environmental Consultants Pty Ltd, 2021.

This report and accompanying plans were prepared for the exclusive use of Colac Otway Shire Council (the “Client”). No extract of text of this document may be reproduced, stored or transmitted in any form without the prior consent of Whitehead & Associates. Plans accompanying this document may not be reproduced, stored or transmitted in any form unless this copyright note is included.

## Document Certification

This Domestic Wastewater Management Plan has been prepared following the standards and guidelines set out in the following documents, where applicable:

- EPA Victoria (2016) 891.4 Code of Practice – *Onsite Wastewater Management*;
- Department of Sustainability and Environment (2012) *Planning permit applications in open, potable water supply catchment areas*;
- *Environment Protection Act 2017* and *Environment Protection Regulations 2021*;
- EPA ‘*Regulating onsite wastewater management systems: local government toolkit*’ (publication 1974: 2021);
- Municipal Association of Victoria (2014) *Victoria Land Capability Assessment Framework*, 2<sup>nd</sup> Ed; and
- AS/NZS 1547:2012 *On-site Domestic Wastewater Management* (Standards Australia / Standards New Zealand, 2012).

To our knowledge, it does not contain any false, misleading or incomplete information. Recommendations are based on an honest appraisal of the sites’ opportunities and constraints, subject to the limited scope and resources available for this project.

## Supporting Author

Supporting technical contribution for this document was provided by Dr. Robert Van de Graaff (Van de Graaff and Associates). Dr. Van de Graaff undertook detailed (field) soil investigation and has provided primary soil data and interpretation which has been utilised in the development of the methodology outlined in this document.

## Executive Summary

Colac Otway Shire Council (COS, the 'Council' or 'Shire') has developed a Domestic Wastewater Management Plan (DWMP) to assist with the efficient and effective management of domestic wastewater within the Shire in a way which will minimise the potential risk posed by domestic effluent upon public health, the physical environment and local receiving environments. COS is committed to the monitoring and management of on-site domestic wastewater management (DWM) systems within the Shire.

Under the provisions of the State Environment Protection Policy (Waters of Victoria) (SEPP), local Councils need to develop a DWMP in conjunction with relevant Water Corporations and the community. This DWMP has been prepared to ensure COS meets the requirements of the Minister for Water's Guideline 1 - Planning Permit Applications in Open, Potable Water Supply Catchment Areas (DSE, November 2012) for DWM; to ensure existing and future development does not compromise the Declared Water Supply Catchments (DWSCs, otherwise known as drinking water catchments) and to assist in maintaining a sustainable environment

The DWMP has been prepared to recognise, respond to and link with Council policies and Plans, current legislation and regulations and the relevant direction of State Regulatory Authorities. The DWMP also addresses recent changes in Codes of Practice, Australian Standards and guidelines relating to DWM, and recent advances in technology and management practices.

The 2015 DWMP was revised in 2021 to address the following components:

- Incorporate recent legislative and policy changes relating to DWM;
- Refine the Risk Assessment Framework process in light of feedback after the first period (2015-2021) of real-use application;
- Update the individual constraints for the cadastral changes since 2015;
- Update the final Sensitivity Rating map (Figure 3);
- Incorporate revised Council priorities and projects;
- Review Council DWM procedures and processes; including the evaluation of DWM system trends;
- Incorporate any required changes with respect to technical data or recent advances in technology and management practices;
- Revise the Locality reports; and
- Update the Action Plan.

The DWMP describes the current situation relating to DWM in the Shire and identifies a range of actions Council seeks to implement. The DWMP is comprised of two documents; this Operational Plan, which contains the Action Plan, and legislative controls Council will put in place for the management of domestic wastewater in the Shire; and a Technical Document, which details the derivation of methodology for the Constraint Mapping, Sensitivity Analysis and the individual Locality Reports.

A number of key issues for DWM in COS have been identified:

- There are a number of sensitive catchments (DWSCs) within the Shire and the protection of these areas is important for the supply of potable water, maintenance of public health and the environment;
- Within the DWSCs, development is currently restricted to 1 dwelling per 40 hectares; the implementation of the DWMP by Council will enable Water Corporations to appropriately relax this restriction and assess development at a higher density within these catchments, on a case by case basis;
- Failing DWM systems have the potential to pollute the environment;

- There are a number of significant constraints, e.g. challenging soils, proximity to water bodies and existing small lots, which limit the effectiveness of DWM systems in some parts of the Shire. To enable improvements to be made in areas where existing DWM systems have historically proved problematic, Council needs to develop strategies to assist DWM system owners to upgrade or replace systems where appropriate;
- Soil assessments undertaken as part of the Land Capability Assessments (LCA) are not consistent with locality data for the region;
- Council has had issues with the quality of some LCA reports in the past, this has since improved and the relationships with LCA assessor has strengthened.
- Additional limitations have been applied by Water Corporations in respect to planning permit applications within DWSCs, setting requirements above and beyond the EPA Code of Practice, Australian Standard and DWMP;
- DWM designs should be undertaken to include all nominal rooms that can be separated by a door; this includes studies;
- Ongoing trend for split wastewater treatment with greywater treatment and irrigation;
- Physical environments (including climate patterns) may limit the effectiveness of DWM systems within the Shire and therefore many systems may require a high level of design and management to ensure each DWM system is sustainable; and
- To ensure that DWM systems associated with new development can operate in a sustainable manner, a high level of design and management is required and Council needs to develop policies and procedures to allow development to proceed in a manner which appropriately protects public health and the environment.

The fundamental purpose of any DWMP is the identification and management of the risk from DWM systems to public and environmental health. A comprehensive 6-staged Risk Assessment Framework (RAF) was developed with the aim of quantitatively and qualitatively assessing the consequences of unsewered development. The stages are outlined as follows:

- Stage 1: Data Collection - background information, legislation/regulatory/planning controls, and data collection and pre-processing.
- Stage 2: Data Analysis - development of individual constraint and informative maps for parameters that significantly impact on the degree of sensitivity of any given lot on sustainable DWM.
- Stage 3: Sensitivity Analysis - weighted analysis of individual constraints which determines the final consolidated sensitivity of the unsewered lots within the Shire, based on an algorithm that takes into account the inter-relationships between the individual constraints.
- Stages 4 & 5: Procedural - Review requirements for development assessment under Planning Scheme and administrative controls and the management of existing DWM systems.
- Stage 6: Cumulative Risk Analysis - optional component that prepares a semi-quantitative assessment of risk (Cumulative Impact) in a delineated Area-of-Concern (AOC) by comparing the probability of DWM system failure with the lots ability to contain DWM on-site (Sensitivity).

Taken together, all stages of the Risk Assessment Framework have substantial value as a development assessment tool and provide defensible identification and justification for prioritisation of existing management issues within the Shire. The RAF aims to provide Council with a reasoned and justified tool to prioritise resourcing, oversight and management for DWM systems within the Shire.



The DWMP has collated a substantial amount of information on existing DWM systems and the various environmental and built constraints that substantially impact on DWM outcomes. This information is presented as a series of constraint and thematic (informative and overlay) maps developed using Geographic Information Systems (GIS) which illustrate the significance of each element (slope, soil suitability, proximity to surface water and groundwater, etc.) to DWM within both the Shire as a whole and the targeted localities and associated towns/settlements. Individual constraints have been considered in the light of current standards for DWM as outlined in the Victorian Environment Protection Authority (EPA) current Code of Practice, Australian Standards and other commonly applied industry standards. For unsewered lots, each constraint is considered on the basis of information supplied by Council or relevant State Government agencies. DWM Sensitivity is described as Low, Moderate, High or Very High depending on the degree of sensitivity the lot presents to DWM.

This information will assist Council to prioritise actions including programmed inspections, education of owners and occupants, the need for and level of land capability assessment and reporting required to support proposals for new DWM systems, and will provide guidance in identifying minimum standards of DWM servicing and appropriate technologies. It will also provide Council with guidance by defining areas where centralised wastewater servicing is most required.

The DWMP presents a prioritised Action Plan for the Shire with proposed timeframes for completion of the various tasks. The Action Plan provides actions which will be implemented to improve the effectiveness of DWM within COS, to protect public and environmental health and to ensure that future development within the Shire is sustainable and protects the sensitive waterways and potable drinking water catchments. The DWMP will also provide a valuable tool for the assessment of planning applications within drinking water catchment areas, all unsewered localities and associated towns/settlements, and direction for owners on the requirements that will need to be met. The 2015 DWMP Action Plan was revised as part of the 2021 DWMP revision. A separate document was produced reviewing the Action Plan, including how each Action has been met and recommendations for further action. The revised Action Plan has been incorporated into the DWMP within Section 13.

The Operational Plan is supported by a more detailed Technical Document which outlines the basis on which the constraint mapping has been developed, presents the individual constraint and thematic maps for both the Shire and individual localities and towns/settlements, and presents minimum DWM treatment system and land application area sizing requirements for compliant sustainable DWM systems..

## Table of Contents

<b>Executive Summary</b> .....	<b>iv</b>
<b>Acronyms</b> .....	<b>2</b>
<b>1 Introduction</b> .....	<b>3</b>
<b>1.1 Overview and Objectives</b> .....	<b>3</b>
<b>1.2 Development of the DWMP</b> .....	<b>6</b>
1.2.2 Guidelines – Planning Permit Applications in Open, Potable Water Supply Catchment Areas (DSE, 2012).....	8
<b>1.3 Previous Reports and Plans</b> .....	<b>12</b>
1.3.1 Evaluation of 2007 DWMP .....	<b>Error! Bookmark not defined.</b>
1.3.2 DWMP (2015) 2021 revision .....	<b>Error! Bookmark not defined.</b>
<b>1.4 Implementation and Review</b> .....	<b>12</b>
<b>2 Overview of Domestic Wastewater Management</b> .....	<b>13</b>
<b>2.1 What is Wastewater?</b> .....	<b>13</b>
<b>2.2 The Historical Context</b> .....	<b>13</b>
<b>2.3 Wastewater Treatment</b> .....	<b>13</b>
<b>2.4 Land Application of Treated Effluent</b> .....	<b>14</b>
<b>2.5 Environmental &amp; Health Risks of Domestic Wastewater Management</b> ...	<b>15</b>
2.5.1 Human Health .....	15
2.5.2 Environmental .....	16
2.5.3 Social.....	16
2.5.4 Summary .....	16
<b>3 Legislation and Policies</b> .....	<b>18</b>
<b>3.1 Council’s Plans and Policies</b> .....	<b>18</b>
<b>3.2 Legislation</b> .....	<b>18</b>
<b>3.3 Regulatory and Legislated Authorities</b> .....	<b>18</b>
<b>3.5 Administrative Authorities</b> .....	<b>19</b>
<b>3.6 Standards and Guidelines</b> .....	<b>19</b>
<b>4 Risk Assessment Framework</b> .....	<b>20</b>
<b>4.1 DWM Sensitivity Analysis (Stage 3)</b> .....	<b>23</b>
4.1.1 Methodology and Rationale.....	23
4.1.2 Sensitivity Analysis Mapping .....	24
4.1.3 Evaluation of Final Sensitivity Analysis.....	28
<b>4.2 Land Capability Assessment (Stage 3)</b> .....	<b>29</b>
4.2.1 Requirements for Low Sensitivity Lots.....	30
4.2.2 Requirements for Moderate Sensitivity Lots .....	31

4.2.3	Requirements for High Sensitivity Lots.....	31
4.2.4	Requirements for Very High Sensitivity Lots .....	31
4.2.5	Generic LCA Requirements - Overlays .....	31
4.2.6	Subdivision LCA Requirements.....	32
<b>4.3</b>	<b>Sensitivity Analysis Summary.....</b>	<b>32</b>
<b>4.4</b>	<b>Prioritisation of Investigation Areas .....</b>	<b>33</b>
<b>4.5</b>	<b>Management of Unsewered Development in COS.....</b>	<b>34</b>
4.5.1	Management of Existing Systems (Stage 4).....	34
4.5.2	Assessment of New Development (Stage 5).....	34
<b>4.6</b>	<b>Cumulative Impact Assessment of DWM .....</b>	<b>36</b>
4.6.1	Cumulative Risk Analysis (Stage 6).....	37
4.6.1.1	Pilot Study (Separation Creek).....	39
<b>4.7</b>	<b>Limitations of the Risk Assessment Framework.....</b>	<b>41</b>
<b>5</b>	<b>Development Planning and Assessment.....</b>	<b>42</b>
5.1	Assessment of DWM Proposals.....	42
5.2	Development Potential in Unsewered Localities .....	42
5.3	Minimum Lot Size for New Developments .....	43
5.4	Stormwater Management.....	43
<b>6</b>	<b>DWM System Design, Approval, Installation and Operation .....</b>	<b>45</b>
6.1	Council’s Responsibilities .....	45
6.2	Owners’ and Occupiers of the Land Responsibilities.....	48
6.3	LCA Assessor/System Designer’s Responsibilities .....	49
6.4	DWM System Design .....	49
6.4.1	Treatment Systems .....	49
6.4.2	Land Application Systems .....	50
6.5	Installation.....	50
6.6	Maintenance.....	50
<b>7</b>	<b>Compliance Monitoring .....</b>	<b>51</b>
7.1	Record Keeping .....	51
7.2	Electronic Records of Inspections.....	51
7.3	Fees or Charges for DWM System Owners.....	51
7.4	Inspections.....	51
7.4.1	Overview .....	51
7.4.2	Legislation .....	52
7.4.3	Inspection Program .....	52
7.4.4	Inspection Protocol.....	53
<b>8</b>	<b>Onsite System Maintenance and Upgrade Options .....</b>	<b>54</b>

<b>8.1 Non-compliant Systems</b> .....	<b>54</b>
8.1.1 Addressing Compliance.....	54
<b>8.2 Maintenance of Existing Systems</b> .....	<b>54</b>
<b>8.3 Modifications for Existing Systems</b> .....	<b>55</b>
8.3.1 Install Service Riser for Septic Tank Access.....	55
8.3.2 Minor Repairs.....	55
8.3.3 Install Outlet Filters in Septic Tanks.....	55
<b>8.4 Upgrade/Replacement of Existing Systems</b> .....	<b>56</b>
8.4.1 Enforcement of Upgrade Works.....	56
8.4.2 Replacement of Septic Tanks.....	56
8.4.3 Upgrades, Extensions and Replacements for Trenches.....	57
<b>8.5 Decentralised or Clustered Wastewater Management</b> .....	<b>58</b>
<b>9 Commercial Wastewater Management Systems</b> .....	<b>59</b>
<b>9.1 Overview</b> .....	<b>59</b>
<b>9.2 Risks Associated with Commercial Systems</b> .....	<b>60</b>
<b>9.3 Management Strategies for Commercial Systems</b> .....	<b>61</b>
9.3.1 Wastewater Treatment Systems.....	61
9.3.2 Effluent Management Systems.....	61
<b>10 Educational Programs</b> .....	<b>62</b>
<b>11 Downstream Water Quality Monitoring</b> .....	<b>62</b>
<b>12 Risk Mitigation in DWM Design and Installation</b> .....	<b>63</b>
<b>13 Action Plan Timeline</b> .....	<b>65</b>
<b>14 Glossary of Terms</b> .....	<b>69</b>
<b>15 References (Cited and Used)</b> .....	<b>71</b>
<b>Appendix A Evaluation of Wastewater Management Systems</b> .....	<b>72</b>
<b>Appendix B Sensitivity Pro-forma Checklist</b> .....	<b>87</b>
<b>Appendix C Land Capability Assessment Checklists</b> .....	<b>89</b>
<b>Appendix D Example System Inspection Pro-forma</b> .....	<b>100</b>

## List of Figures

<b>Figure 1: Sewered Lots within COS</b> .....	<b>5</b>
<b>Figure 2: Risk Assessment Framework Flowchart (a and b)</b> .....	<b>21</b>
<b>Figure 3: Final Sensitivity Analysis Ratings</b> .....	<b>27</b>
<b>Figure 4: DWM Impact Probability Matrix of DWM System Failure Matrix</b> .....	<b>40</b>
<b>Figure 5: Cumulative Risk Analysis (Matrix)</b> .....	<b>41</b>

## List of Tables

<b>Table 1: Guideline 1 Requirements</b> .....	<b>10</b>
<b>Table 2: COS (2007) DWMP Actions not Completed at August 2014</b> Error! Bookmark not defined.	
<b>Table 3: Typical Domestic Wastewater and Septic Effluent Quality</b> .....	<b>13</b>
<b>Table 4: Health and Environmental Risks of DWM Systems</b> .....	<b>16</b>
<b>Table 5: Sensitivity Rating Descriptions</b> .....	<b>24</b>
<b>Table 6: Final Sensitivity Rating Summary</b> .....	<b>26</b>
<b>Table 7: Sensitivity Pro-forma Checklist Example</b> .....	<b>30</b>
<b>Table 8: Prioritisation Summary</b> .....	<b>35</b>
<b>Table 9: Risk Mitigation for Various Constraints</b> .....	<b>63</b>
<b>Table 10: DWM System Compatibility Matrix</b> .....	<b>85</b>
<b>Table 11: Effluent Management Suitability by Locality</b> .....	<b>86</b>
<b>Table C1: Minimum Requirement for a Standard LCA and Report</b> .....	<b>90</b>
<b>Table C2: Minimum Requirements for a Detailed LCA and Report</b> .....	<b>93</b>
<b>Table C3: Minimum Requirements for a Comprehensive LCA and Report</b> .....	<b>96</b>

## Acronyms

AEP	Annual Exceedance Probability
ARI	Annual Recurrence Interval
AHD	Australian Height Datum
AO	Authorised Officer under Environmental Protection Act Division 5 Part IXB (1970)
AOC	Areas of Concern
AWTS	Aerated Wastewater Treatment System
CMA	Catchment Management Authority
COS	Colac Otway Shire Council
DEM	Digital Elevation Model
DEPI	Department of Environment and Primary Industries (now known as DELWP)
DELWP	Department of Environment, Land, Water and Planning
DIR	Design Irrigation Rate
DLR	Design Loading Rate
DSE	Department of Sustainability and the Environment (former)
DSM	Decentralised Sewage Model
DWM	Domestic Wastewater Management
DWMP	Domestic Wastewater Management Plan
DWSC	Declared Water Supply Catchments
EPA	Environment Protection Authority
GED	General Environmental Duty
GIS	Geographic Information System
GMAs	Groundwater Management Area
HPO	Health Protection Officer
LAA	Land Application Area
LCA	Land Capability Assessment
LGA	Local Government Area
LRA	Land Resource Assessment
MAV	Municipal Association of Victoria
PIC	Plumbing Industry Commission
SEPP	State Environment Protection Policy
SWG	Stakeholder Working Group
VCAT	Victorian Civil and Administrative Tribunal
VVG	Visualising Victoria's Groundwater (Project)
WC	Water Corporation(s)
WMIS	The Victorian Water Measurement Information System
WSPAs	Water Supply Protection Area(s)

# 1 Introduction

## 1.1 Overview and Objectives

Colac Otway Shire Council (COS, 'the Shire' or 'Council') has a geographic area of approximately 3,433km<sup>2</sup> and a population of approximately 21,662 in 2021 (Council Plan, 2021-25). There are approximately 2,850 on-site Domestic Wastewater Management (DWM) systems that Council has record of within the Shire. In addition, there are unsewered commercial (non-domestic) lots, such as cafes, pubs and dairy farms in the Shire, which are regulated by the EPA and Council. This Domestic Wastewater Management Plan (DWMP) covers the management of DWM systems within the Shire. Figure 1 identifies the unsewered areas of COS that forms the basis for this document.

Wastewater management in COS is undertaken to protect human and environmental health. The Shire is characterised by towns, rural residential development, farming (including forestry), national parks and state forests, and coastline; and includes large areas designated as Declared Water Supply Catchments (DWSCs) (around 30% of the Shire). The protection of surface waters, groundwater and human health are all requirements of the *Environment Protection Act 2017* (as amended). Under the provisions of this Act and other legislative guidelines, Councils are required to prepare a DWMP. This DWMP is a revision of the first DWMP created in 2007.

This DWMP has been developed in accordance with the legislation and policies outlined in Section 3, and in particular:

- *Environmental Protection Act, 2017* (as amended);
- Ministerial Guidelines for *Planning Permit Applications in Open, Potable Water Supply Catchments*, (DSE, 2012); and
- State Environmental Protection Policy (SEPP) (Waters) 2018.

The DWMP addresses the various aspects of wastewater, including treatment, land application, and the cumulative impacts in DWSCs. This plan also covers the regulation of DWM systems, including; permits to install, permits to use, permits to upgrade and ongoing monitoring of DWM system performance.

This Operational Plan forms the major component of the DWMP and outlines how COS will manage DWM systems and work with system designers, installers, owners and maintainers to minimise risk to public and environmental health. This document is supported by a Technical Document that provides detail on the regulatory framework for DWM and the methodology used to generate constraint mapping and corresponding Sensitivity Analysis of the Shire and individual Locality Reports.

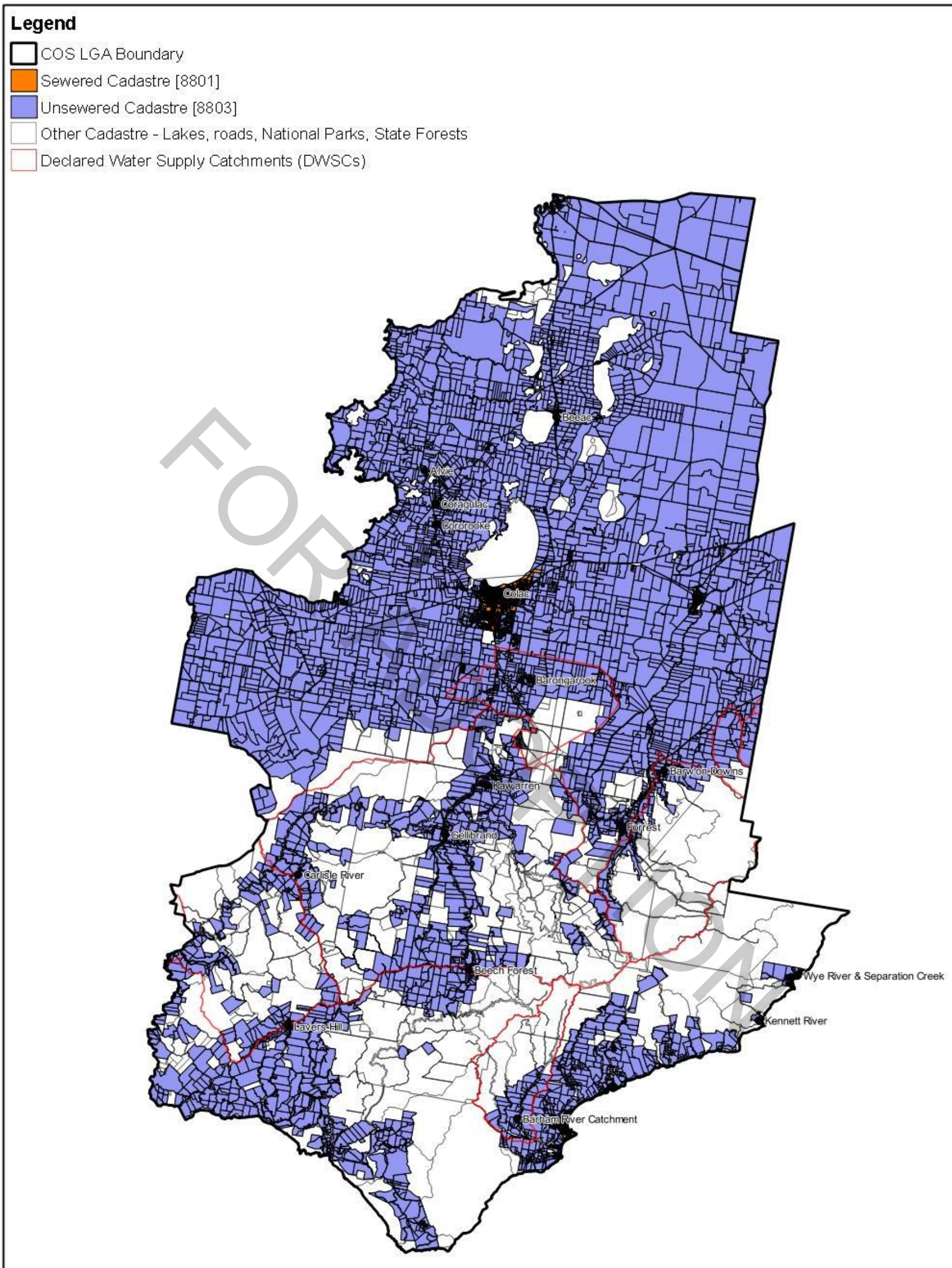
### The key objectives of this DWMP are to:

- Provide strategic direction for the development and management of wastewater throughout COS;
- Develop and implement a prioritised audit program of DWM systems within declared water supply catchments (DWSCs);
- Provide guidance to, and the minimum standards for, those preparing Land Capability Assessments within COS for existing and new developments;
- Develop a risk-based decision tool to provide guidance on the development potential of unsewered localities (including the more densely populated 'towns' and 'settlements') within and outside of the DWSCs, with regards to environmental and public health risks from DWM systems;
- Clarify the circumstances in which dwellings can be constructed within DWSCs at a higher density than 1 per 40 hectares;
- Provide greater certainty for landowners about the development potential of their land;

- Provide guidance on appropriate maintenance, modifications and upgrades for under-performing and failing systems throughout the Shire;
- Provide guidance on what types of wastewater treatment and land application systems are appropriate (and inappropriate) for the physical constraints of unsewered localities;
- Provide guidance on appropriate education for DWM system owners and residents of unsewered properties;
- Provide clear direction for the assessment of new and modified DWM system applications and their ongoing compliance with legislative requirements; and
- Specify actions to achieve these objectives to ensure the DWMP delivers demonstrable results.

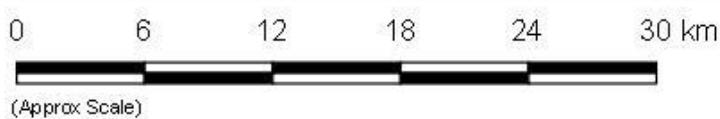
FOR ADOPTION





**Figure 1: Sewered vs Unsewered Lots - Shire**

Colac Otway Shire DWMP Review



Revision	3
Drawn	JK
Approved	MS

## 1.2 Development of the DWMP

All Councils within Victoria are required to prepare a municipal DWMP. A DWMP is a planning and management document that provides a mechanism for the development, implementation and review of programs to protect public health, the local environment and local amenity. The DWMP establishes Council's policy on and commitment to sustainable ongoing wastewater management and its programs for compliance and enforcement. The DWMP establishes processes to ensure early and comprehensive consideration of DWM in the planning cycle and Council's responsibility for the monitoring and compliance of systems.

The DWMP assists landowners and Council staff to understand the requirements for development within the Shire in respect of DWM. With the information provided by the DWMP Council staff will be able to assist landowners and developers to determine the level of assessment that is required for a proposed development. The detailed risk-based assessments of unsewered localities and towns/settlements included in the DWMP equips Council staff to assess existing and proposed DWM systems within the Shire, with the overarching objective of improving wastewater management into the future. Council staff will also be able to assess the capacity of land to manage wastewater for future development using the risk assessment framework.

A Stakeholder Working Group (SWG) was established to oversee development of the 2015 Plan, comprising officers from Council, Barwon Water, Wannon Water, Southern Rural Water, EPA, the Department of Environment, Land, Water and Planning (DELWP) and Corangamite Catchment Management Authority (CCMA). This group helped determine the priority regions and issues with regards to DWM within COS, and to establish the methodology of the risk assessment framework. Further engagement occurred between Council, Wannon Water and Barwon Water during the 2021 review of the plan.

The field investigations undertaken by Consultant staff involved an audit of a representative sample of approximately 10% of existing on-site wastewater management systems and soil investigations in towns/settlements selected by the Stakeholder Working Group. The purpose of the investigations was to:

- confirm the nature and extent of the environmental and public health impacts associated with the existing wastewater management within the towns/settlements;
- identify the areas that may not need improvement if domestic wastewater management systems are operating effectively; and
- guide the Land Capability Assessment process to determine the capability of vacant lands within and around the towns/settlements, in terms of their suitability for sustainable on-site land application of effluent.

Summaries of the field assessment results are included in the Locality Reports included in Appendix B of the Technical Report.

Feedback from the community was sought via community drop-in sessions across the Shire and other methods including surveys and written submissions. The concerns and suggestions most commonly raised during the community consultation process were as follows:

- Uncertainty about planning processes and time delays for obtaining development approvals, particularly for new development on small lots in the DWSCs.
- Uncertainty about Council and Water Corporations' requirements for new and upgraded DWMs, particularly within the DWSCs.
- Questioning the fairness of owners having to forgo potential lot development or sales opportunities for small or non-compliant lots in the DWSCs (i.e. regulatory controls and expectations change between buying and developing or selling).
- The view that large, rural properties do not pose a threat to drinking water quality and should be allowed to utilise primary treatment DWM systems.

Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

---

- Clarification of the Lot Sensitivity rating for individual properties and the associated LCA requirements;
- Uncertainty regarding the nature and intent of ‘compliance monitoring’ programs, in particular how under-performing systems will be addressed;
- Questions regarding possible solutions (and associated costs) for DWM system combinations on the Otway Ridge;
- Concerns regarding the applicability of the DWMP to ‘other’ land use activities (i.e. agriculture);
- Concerns about the performance and accountability of non-domestic (commercial) systems on the local environment and how the DWMP will address those; and
- Questions about possible funding measures/support for improving DWM, particularly in older homes with lower disposable incomes.

Additionally, a targeted workshop was held with LCA assessors which focussed on describing and demonstrating the Risk Assessment Framework (RAF) methodology, particularly the derivation of individual Lot Sensitivity ratings. Practitioners were also briefed on the new (minimum) requirements for LCAs (site and soil investigation and DWM design). All feedback received during the public exhibition period was reviewed and either incorporated into, or used to inform the DWMP, where appropriate.

**1.2.1 Guidelines – Planning Permit Applications in Open, Potable Water Supply Catchment Areas (DSE, 2012)**

These Guidelines outline the requirements for development in declared water supply catchment areas (DWSC), where a planning permit is required to use land for a dwelling or to subdivide land, or to develop land pursuant to a schedule to the Environmental Significance Overlay that has a catchment or water quality protection as an object.

Guideline 1 requires that the density of dwellings should be no greater than one dwelling per 40 hectares and each lot created in a subdivision should be at least 40 hectares in area. The dwelling density is established by calculating the number of dwellings within a one kilometre radius of the site of the proposed dwelling. The density requirement of Guideline 1 does not apply where:

- Category 1: A permit is not required (i.e. outside of the DWSC/Environmental Significance Overlay);
- Category 2: If the dwelling is connected to reticulated sewerage;
- Category 3: If the development is consistent with a Catchment Policy that has been prepared for the catchment and endorsed by the relevant Water Corporation following consultation with relevant stakeholders; and
- Category 4: The Water Corporation is satisfied that Council has prepared, adopted and is implementing a DWMP in accordance with DWMP requirements.

The preparation and implementation of this DWMP and Action Plan allows COS to demonstrate that it has fulfilled the requirements of Ministerial Guideline 1. Once the Category 4 criterion is met, the Water Corporations have the ability to consider applications that would result in a higher density of development than would otherwise be permitted by Guideline 1 (currently constrained to a density of 1 in 40 ha). In order to relax this density requirement, all conditions of Guideline 1, as listed below, are to be met:

- The minimum lot size area specified in the zone for subdivision is met in respect of each lot (for subdivision applications only);
- The Water Corporation is satisfied that the Council has prepared, adopted and is implementing a DWMP in accordance with the DWMP requirements; and
- The proposal does not present an unacceptable risk to the catchment having regard to:
  - a. the proximity and connectivity of the proposal site to a waterway or a potable water supply source (including reservoir);
  - b. the slope of the land;
  - c. the quality of the soil;
  - d. the existing lot and dwelling pattern in the vicinity of the site;
  - e. the existing condition of the catchment and evidence of unacceptable water quality impacts;
  - f. the link between the proposal and the use of the land for a productive agricultural purpose;
  - g. any site remediation and/or improvement works that form part of the application; and
  - h. the intensity or size of the development or use proposed and the amount of run-off that is likely to be generated.

Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

---

Items a-c are addressed through the Sensitivity Analysis as detailed in Section 4 of this DWMP. Items d-e may be addressed through the Cumulative Impact Assessment component of the RAF (Stage 6) or other methods as determined by the Council or Water Corporation. The remaining items (f-h) will be dealt with under other respective planning controls.

The preparation, adoption and implementation of a DWMP is required for the relaxation of Guideline 1. Many of the items for compliance with Guideline 1 will form part of the Operational Plan of this DWMP. These actions are identified in the DWMP and will result in the adoption of the DWMP by Council, and endorsement by the relevant stakeholders.

Table 1 outlines how this will be achieved.

For the DWMP to be considered for endorsement by the Water Corporations, COS is also required to demonstrate that suitable resourcing for implementation, including monitoring, enforcement, review and auditing, is available.

A working group comprising Council and Water Corporation delegates was formed in 2015 to discuss DWM system applications, ensure that requests for information remain uniform, and to help ensure the implementation of this plan. This group aims to meet 2-3 times per year.

FOR ADOPTION

Table 1: Guideline 1 Requirements

Action	Details	Completed within this DWMP	Comments/Reference
The DWMP must be prepared or reviewed in consultation with all relevant stakeholders.	Other local governments with which catchments are shared	Yes	Liaison with abutting Councils will be undertaken during the public exhibition period. Detailed in Section 1.2 of the Operational Plan.
	EPA	Yes	A representative from the EPA was a part of the original working group for the 2015 Plan. All documentation relating to the preparation of the DWMP was provided to the EPA, which was also invited to comment on all drafts developed. Detailed in Section 1.2 of the Operational Plan.
	Local Water Corporations	Yes	This DWMP was prepared and progressively reviewed by a working group that included representatives from Barwon Water, Wannon Water, Southern Rural Water and the Corangamite Catchment Management Authority. All documentation relating to the preparation of the DWMP was provided to the Water Corporations, which were also invited to comment on all drafts developed. Detailed in Section 1.2 of the Operational Plan.
The DWMP must comprise a strategy including timelines and priorities to:	Prevent discharge of wastewater beyond lot boundaries	Yes	Assessment of DWM sensitivity and assessment protocols to ensure best possible DWM system is installed. Section 6 outlines the responsibilities of lot owner's, LCA assessors and Council with regards to effective DWM system design, installation and maintenance. Continual education of the community as per Action 9. All lots will follow the LCA procedure outlined in Section 4.2 of the Operational Plan for their given Sensitivity Rating.
	Prevent individual and cumulative impacts on groundwater and surface water beneficial uses	Yes	Assessment of DWM sensitivity and assessment protocols to ensure best possible DWM system is installed. Particular considerations to slope, soil, useable lot area and climate have been addressed within the Sensitivity Analysis. Section 4 of the Operational Plan details the methodology and results of the Sensitivity Analysis for each lot within the Shire as well as providing a tool to assess the cumulative impact of DWM systems within particular areas of concern, i.e. within a sub-catchment (Stage 6).
The DWMP must provide for:	Effective monitoring of the condition of DWM systems, including compliance with permit conditions	Yes	Ongoing. Improvement of data management system to allow for effective management of existing permits and conditions. A dedicated DWM officer was employed by Council for a three (3) year period 2018-2021, completing a targeted auditing program within six (6) localities. As part of the new requirements of the <i>Environment Protection Act 2017</i> (as amended), owners and occupiers of the land on which a DWM system is located have an obligation to take reasonable steps to maintain the DWM system in good working order, including notifying Council of any failure to meet the Permit to Use conditions and undertake rectification steps. Council will continue to meet the required inspections for the issuing of Permits under this <i>Act</i> and undertake responsive inspections of DWM systems.

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Action	Details	Completed within this DWMP	Comments/Reference
	The results of monitoring provided to stakeholders	Yes	Ongoing – biannually. Report shall include summary of new permits issued, systems inspected, and results of any recommended upgrade works or compliance requirements. Detailed in Actions 6 and 12a.
	Enforce action where non-compliance is identified	Yes	Ongoing – Council have also received a delegation of functions and powers from the EPA to allow councils to take action under the GED of the <i>Environment Protection Act 2017</i> (as amended). Council has found that DWM system compliance and improvements in performance can be achieved without taking enforcement action in the majority of cases; however, Section 8 outlines enforcement actions for ongoing poor performance of systems. Council also has escalation points available to address system under-performance, with responses commensurate to the risk posed by poorly performing systems (see Section 8.4.1).
	A process review and update of the DWMP every five (5) years	Yes 2020	Biannual progress review of the DWMP proposed with the Water Corporations. Detailed in Action 12c.
	Independent audit by an accredited auditor of the implementation of the DWMP, monitoring and enforcement every three (3) years	Pending - 2024	Audit to ensure that the work undertaken is done so in accordance with the DWMP. Detailed in Action 12b.
	The results of the audit is to be provided to all stakeholders as soon as possible after the audit	Pending- 2024	Results of the audit will be provided to all stakeholders for review after the audit.
	COS is required to demonstrate that suitable resourcing for implementation, including monitoring, enforcement, review and audit is in place	Yes	This is detailed in Section 7 of the DWMP and the Action Plan (Section 13).

### 1.3 Previous Reports and Plans

The 2015 DWMP was revised in 2021 to address the following components:

1. Incorporate recent legislative and policy changes relating to DWM;
2. Refine the Risk Assessment Framework process in light of feedback after the first period (2015-2021) of real-use application;
3. Update the individual constraints for the cadastral changes since 2015;
4. Update the final Sensitivity Rating map (Figure 3);
5. Incorporate revised Council priorities and projects;
6. Review Council DWM procedures and processes; including the evaluation of DWM system trends;
7. Incorporate any required changes with respect to technical data or recent advances in technology and management practices;
8. Revise the Locality reports; and
9. Update the Action Plan.

### 1.4 Implementation and Review

The effectiveness of the DWMP and the compliance inspections will depend on the ability of Council to implement the Action Plan (Section 13).

Staff must be trained in onsite wastewater assessment and be familiar with plumbing requirements to ensure compliance with repair and/or upgrade orders that can be made for systems under the program. Follow-up visits to properties to ensure compliance are likely to be required.

The effectiveness of the DWMP will be measured by a monitoring and reporting process. Further to the requirements in the SEPP and *Environment Protection Act 2017*, Council will monitor and report biannually to the Water Corporations (Refer Section 13) on a range of performance indicators listed in this DWMP, including but not limited to:

- the number of complaints about poorly functioning DWM systems;
- the number of system inspections for each risk category;
- the number of systems needing rectification (following inspection);
- the number of systems rectified;
- the number of systems still needing rectification; and
- the assessment of the results of surface and/or groundwater quality monitoring in respect to DWM and its potential impacts on water quality;

This reporting will not only indicate the progress of Operational Plan implementation, but it will also provide an indication of the effectiveness of the actions to improve environmental and public health and cumulative DWM risk across the Shire.

The DWMP must be audited every three years (Refer Section 13) so as to ensure the DWMP is being implemented appropriately. Resource funding and time allocation must be made by Council to undertake this review.



## 2 Overview of Domestic Wastewater Management

### 2.1 What is Wastewater?

Wastewater is water-borne waste material and includes all normal wastes from residences, as well as many forms of waste matter from other establishments. Domestic wastewater is derived from household waste streams: kitchen; bathroom (basin, bath and shower); laundry and toilet. Industrial and commercial wastewater varies widely in character and often requires specialised treatment processes as it may contain substances that are harmful to the biological processes utilised for treatment processes. Domestic wastewater is commonly described in these three forms:

- Blackwater – “water grossly contaminated with human excreta” e.g. toilet water, composting toilet leachate;
- Greywater – “water that is contaminated by but does not contain human excreta” e.g. kitchen, bath and laundry water. Also referred to as ‘sullage’; and
- Combined – “a combination of both black and grey water.”

Domestic wastewater quality can vary greatly due to numerous factors; however, Table 2 outlines typical values for domestic wastewater quality parameters.

**Table 2: Typical Domestic Wastewater and Septic Effluent Quality<sup>1</sup>**

Parameter (mg/L)	Untreated Wastewater	Septic Effluent
Biological Oxygen Demand (BOD <sub>5</sub> )	150-300	100-200
Total Suspended Solids (TSS)	150-300	20-100
Ammonium (NH <sup>4+</sup> )	~10	~40
Organic Nitrogen	~30	~15
Ammonia (NO <sup>3-</sup> )	4-13	<1
Ortho Phosphate	6-10	10-15
Organic Phosphorus	4-15	<4

### 2.2 The Historical Context

Historically the management of domestic wastewater systems, throughout Victoria, has been difficult. Local Councils are the regulatory authority for DWM and have generally been limited by time and financial support from implementing effective DWMPs. Many Councils throughout Victoria (and Australia) have previously provided very limited programs for DWM, focusing on an approval scheme for new systems and a basic system monitoring program, as time permits. There are limited cost recovery options for Councils to monitor increasingly complex and larger numbers of systems as the peri-urban areas experience rapid growth throughout Victoria. There is increasing pressure on all Councils within Victoria to improve DWM so that existing and future development does not impact on public health and the environment.

### 2.3 Wastewater Treatment

Wastewater is typically managed in urban environments in a community sewerage system, with treatment at a centralised wastewater treatment plant with disposal via discharge to waterways or land application. In areas where a centralised sewerage system cannot be provided,

<sup>1</sup> Information collated from a range of sources including AS1546.1:2008, AS1547:2012, EPA Publication 760 (2002), NRMCC (2006) and NSW DLG (1998). Note all concentrations are highly variable.

wastewater is managed on-site at each individual lot. On-site domestic wastewater is managed by a variety of treatment systems, including but not limited to:

- Septic Tanks;
- Aerated Wastewater Treatment Systems;
- Aerobic Biological Filter Systems (Wet Composting, Vermiculture);
- Membrane Filtration;
- Ozonation;
- Reed Beds;
- Sand Filters;
- Textile (fabric) Filters;
- Trickling Aerobic Filters; and
- Greywater Treatment Systems.

Appendix A provides detailed information about treatment systems. Following treatment, the effluent is then either dispersed or reused within the boundaries of the lot. The type of dispersal or reuse system depends on the type of treatment system and the quality of effluent (primary or secondary).

Current best-practice is for effluent to be treated to a secondary standard or better, particularly within the DWSCs. Any variations to this must be provided with detailed evidence and explanations to demonstrate its suitability. Most systems apply effluent within the soil profile in a dedicated area on the lot (often referred to as the Land Application Area or the dispersal area). Highly treated and disinfected greywater can be used internally for toilet flushing and cold water supply to the laundry; however such systems are not common due to relatively high costs. Further details on land application systems are provided below.

## **2.4 Land Application of Treated Effluent**

There are a range of effluent dispersal or reuse systems that apply effluent to the soil profile. Systems that are suitable for primary-treated effluent (from septic tanks and wet composting systems) include:

- Conventional Absorption Trenches and Beds;
- Evapotranspiration-Absorption (ETA) Trenches and Beds;
- Modified ETA Trenches and Beds – such as ‘Wick Trenches’ and modified pipe systems;
- Wisconsin or Sand Mounds; and
- Low Pressure Effluent Distribution (LPED).

Systems that are suitable for secondary-treated and disinfected effluent (from accredited secondary treatment systems only) include:

- All of the above systems suitable for primary effluent (although less commonly used);
- Surface spray or drip irrigation;
- Covered surface drip irrigation; and
- Subsurface drip irrigation.

Appendix A provides detailed information about land application systems.

## 2.5 Environmental & Health Risks of Domestic Wastewater Management

Domestic wastewater can be highly variable in quantity and quality, which can impact on the performance of DWM treatment systems. Primary treatment in septic tank systems relies on the anaerobic breakdown of organic matter by microbes and the settling of solids. Shock loads or biocide use within the home can impact on the ability of these microbes to treat the wastewater and solids passing through the first treatment stage, resulting in poor quality of effluent being discharged to the environment.

DWM system failures are most often a result of poor system design, poor installation practices, inadequate maintenance and sometimes insufficient land area, all of which contribute to potential public and environmental health impacts. These are discussed below.

### 2.5.1 Human Health

The principal groups of organisms found in natural waters and wastewater include: bacteria, fungi, protozoa, rotifers, algae and viruses. Not all of these pose potential human and public health risks. Organisms with the potential to pose health risks to humans are known as “pathogenic” organisms and may be classified into three broad categories:

1. **Bacteria** – domestic wastewater contains a wide variety and concentration of pathogenic and non-pathogenic bacteria. There are many waterborne infectious diseases e.g. typhoid and cholera. Infectious doses of disease causing bacteria in wastewater can lead to illness. Testing for pathogens is difficult and expensive, therefore indicator bacteria from the intestinal tract of uninfected humans and warm blooded animals is used; for example coliform bacteria such as *Escherichia coli* are used as an indicator of potential pathogenic/faecal contamination in water.
2. **Parasites** – (Protozoa and Helminths). The two dominant protozoan parasites of concern in the treatment of wastewater are:
  - *Cryptosporidium*; and
  - *Giardia*.

These are both resistant to standard disinfection methods and pose considerable risk to susceptible members of the community (children, elderly and immune-compromised). Helminths or intestinal worms, e.g. tapeworms and roundworms, are also commonly found in wastewater. These release millions of environmentally resilient eggs throughout their lifespan.

3. **Viruses** – contamination of domestic wastewater by viruses may lead to major outbreaks, such as Hepatitis A (referred to as infectious hepatitis), which is the most dominant waterborne virus. Polio Virus is also transmitted in wastewater. Viruses can cause widespread illness in epidemic patterns. Viruses are more common and diverse than bacteria in the aquatic environment.

The ability of pathogens to survive in the environment varies substantially, depending on environmental conditions and the type and life-stage of the organism. Some organisms produce highly resilient spores which can persist in unfavourable conditions for long time periods and can be transported large distances in water and groundwater.

Furthermore, nitrogen in the form of nitrate is highly mobile in the soil/water environment and can also be a potential public health risk if exposure is high (however this has not been identified as a particular risk for the relatively low-density towns of regional Australia).

Exposure to any of the above, via direct or indirect contact with wastewater, poses a human health risk.

### 2.5.2 Environmental

Nutrients, along with trace quantities of other elements, are essential for biological growth. Phosphorus (P) and Nitrogen (N) are the principal nutrients of concern with regard to DWM systems and are present in a range of compounds in raw wastewater and treated effluent. In excess, phosphate and nitrate encourage vigorous growth of algae and aquatic plants in surface water systems, which can lead to ecological disruptions and reduced water quality. Poor quality raw supply water is more difficult and costly to treat for drinking water purposes, compared to water taken from catchments where pollution inputs are reduced.

### 2.5.3 Social

The poor management of DWM systems has potential financial implications where it may adversely impact on drinking water supplies by contamination. Where DWM systems cause pollution from effluent discharges to waterways, there is a requirement for a higher level of treatment of drinking water prior to distribution. Where failing DWM systems cause odours or discharge into adjoining properties, there is an adverse impact on public amenity and these may cause a nuisance. There are financial implications for owners who have a failing DWM system and are required to complete upgrade works. New systems can be expensive and some owners may not have the finances to undertake works immediately, resulting in continuing system failures.

### 2.5.4 Summary

Table 3 below summarises the risks common to all DWM systems (treatment and land application components). The operation of a large number of DWM systems within a catchment may have long term negative and cumulative impacts on that particular area and on downstream water bodies. However, where systems are correctly designed, installed and managed (including upgrades to existing systems where necessary), the risks of cumulative impacts to the downstream environment are substantially reduced. As such, the sustainable density of DWM systems is higher when systems are operating optimally, compared to when a proportion (or all) systems are underperforming or failing in some way.

**Table 3: Health and Environmental Risks of DWM Systems**

Risk	Typical Cause	Potential Impacts
Ineffective regulation	Lack of staff/ time	Environmental, Health and Social
Off-site discharge	Failing/ poorly managed/ damaged/ unapproved treatment and/or land application system(s)/ previous approved practices for off-site discharges	Environmental, Health and Social
Disinfection failure	No disinfection (chlorine)/ poor upstream treatment	Health
Failure of treatment system	Lack of maintenance/ poor installation/ age of system	Environmental, Health and Social
Surcharge from land application area	Peak loads/ overload of system/ failure of land application system / undersized or poorly designed system	Environmental, Health and Social
Failure of land application system	Clogging layer in trenches or beds/ broken pipes/ inappropriate hydraulics	Environmental, Health and Social
Human contact with effluent	Poor OH&S in maintenance/ inappropriate disposal methods	Health and Social

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

<b>Risk</b>	<b>Typical Cause</b>	<b>Potential Impacts</b>
Owner ignorance	Lack of knowledge of system	Environmental, Health and Social
Damage to land application system	Access by vehicles or stock/ inappropriate boundaries	Health and Social
Odour	Inadequate treatment in systems/ mechanical fault	Social
Groundwater contamination	Effluent dispersal area overloaded (undersized and/or failing)	Environmental, Health and Social
Surface water contamination	Surface runoff of effluent in area with reduced setback distance buffers/ recharge from contaminated GW	Environmental, Health and Social
Human or animal disease outbreak	Direct or indirect pathogen exposure due to any of above causes	Health and Social
Degradation of soils	Undersized or failing land application system/ usually high strength effluent	Environmental and Social
Increased algae growth	Excess nitrate and phosphate in surface waters	Environmental, Health and Social
Degradation of native vegetation	Excess nitrate and phosphate in soils and/ or surface waters	Environmental and Social

### 3 Legislation and Policies

#### 3.1 Council's Plans and Policies

The DWMP has been developed to fit with other Council Policies and Plans through actions identified in the Action Plan. The following lists the various Council Plans which have been included in the DWMP review, which are discussed further within the Technical Document.

- Council Plan 2021 – 2025;
- Municipal Public Health and Wellbeing Plan 2021 – 2025;
- Colac Otway Planning Scheme;
- Environmental Strategy 2010 – 2018;
- Environment Action Plan 2013 – 2015;
- Rural Living Strategy 2011; and
- Council Budget.

#### 3.2 Legislation

A summary of the legislation and their stipulated requirements relevant to the regulation of DWM systems are detailed in the Technical Document. The relevant legislation includes:

- *Local Government Act 2020*;
- *Environment Protection Act 2017 (as amended)*;
- *Water Act 1989*;
- *Safe Drinking Water Act 2003* and Regulation 2005;
- *Planning and Environment Act 1987*;
- *Public Health and Wellbeing Act 2008*;
- State Environmental Protection Policy (Waters) 2018;
- *Catchment and Land Protection Act 1994*; and
- Victorian Building Regulations 2018.

#### 3.3 Regulatory and Legislated Authorities

DWM involves, to varying degrees, a number of regulatory agencies:

- Council (Colac Otway Shire Council);
- Environment Protection Authority Victoria (EPA);
- Plumbing Industry Commission (PIC);
- Municipal Association of Victoria (MAV);
- Water Corporations: Barwon Water, Wannon Water, and Southern Rural Water;
- Department of Environment, Land, Water and Planning (DELWP); and
- Corangamite Catchment Management Authority.

### 3.5 Administrative Authorities

VCAT is a tribunal which deals with civil disputes, administrative decisions and appeals that are heard before Judge or Tribunal member. It provides a dispute resolution service for both government and individuals within Victoria.

In cases throughout Victoria, VCAT has questioned the quality of LCAs for DWM, particularly where a site is located within a potable water supply catchment. VCAT has also questioned the rigour of some Council's evaluation of these LCAs and how the minimum development guideline of 1 dwelling per 40 hectares should be applied in the DWSCs (ref. 'Guidelines – Planning Permit Applications in Open, Potable Water Supply Catchment Areas' – DSE, 2012).

### 3.6 Standards and Guidelines

The design, operation and management of DWM systems are supported by a number of standards and guidelines:

- EPA Code of Practice – Onsite Wastewater Management, Publication 891.4 (2016);
- Land Capability Assessment – Onsite Wastewater Management, Publication 746.1 (2003);
- AS/NZS 1547:2012 Onsite Domestic Wastewater Management;
- AS/NZS 1546.1-4 Onsite Domestic Wastewater Treatment Units;
- AS/NZS 3500.1-4:2021 Plumbing and Drainage;
- Guidelines for Development in Flood Affected Areas (DELWP, 2019);
- Auditor General of Victoria (2006) Protecting our environment and community from failing septic tanks; and
- Guidelines – Planning Permit Applications in Open, Potable Water Supply Catchment Areas (DSE, 2012).

## 4 Risk Assessment Framework

Risk Assessment is practiced by individuals and organisations all of the time. However, with the evolving complexity of society, a need for formal Risk Assessment has arisen since the 1950's. This began with studies of food safety and was progressively adopted in the fields of public health and environmental impact. Formal risk assessment has proven to be an effective way of making decisions in situations involving considerable complexity and uncertainty.

Formal recognition of the value, intent and application of risk assessment is provided in the international standard for formal risk management and associated guidelines (Standards Australia, 2009; IEC/ISO, 2009). AS/NZS ISO 31000:2009 (Risk Management) defines risk as the "effect of uncertainty on objectives", where an effect is a (+/-) deviation from the expected and objectives can apply to differing aspects (e.g. environmental goals) or at differing scales (e.g. strategic). In more general terms, Risk is often expressed in terms of the 'consequences' of an event or action and the associated 'likelihood' of that event/action occurring.

The fundamental purpose of any DWMP is the identification and management of risk from DWM systems to public and environmental health. A means of addressing the DWM issues raised by the unsewered towns/settlements, both within and outside of DWSCs, is to prepare a Risk Assessment tool that scientifically measures possible impacts of DWM systems on public and environmental health. A comprehensive 6-staged Risk Assessment model (Framework) (RAF) has been developed for this DWMP to assist Council in analysing risk at variable scales (Shire-wide to individual lot).

Together, all stages of the Risk Assessment have substantial value as a development assessment tool and provide a defensible identification and justification for prioritisation of existing management issues within the localities and towns/settlements. It incorporates tools that assess the bio-geophysical capability for DWM in existing unsewered localities and towns/settlements, recently developed unsewered subdivisions and undeveloped unsewered land. It will be primarily used:

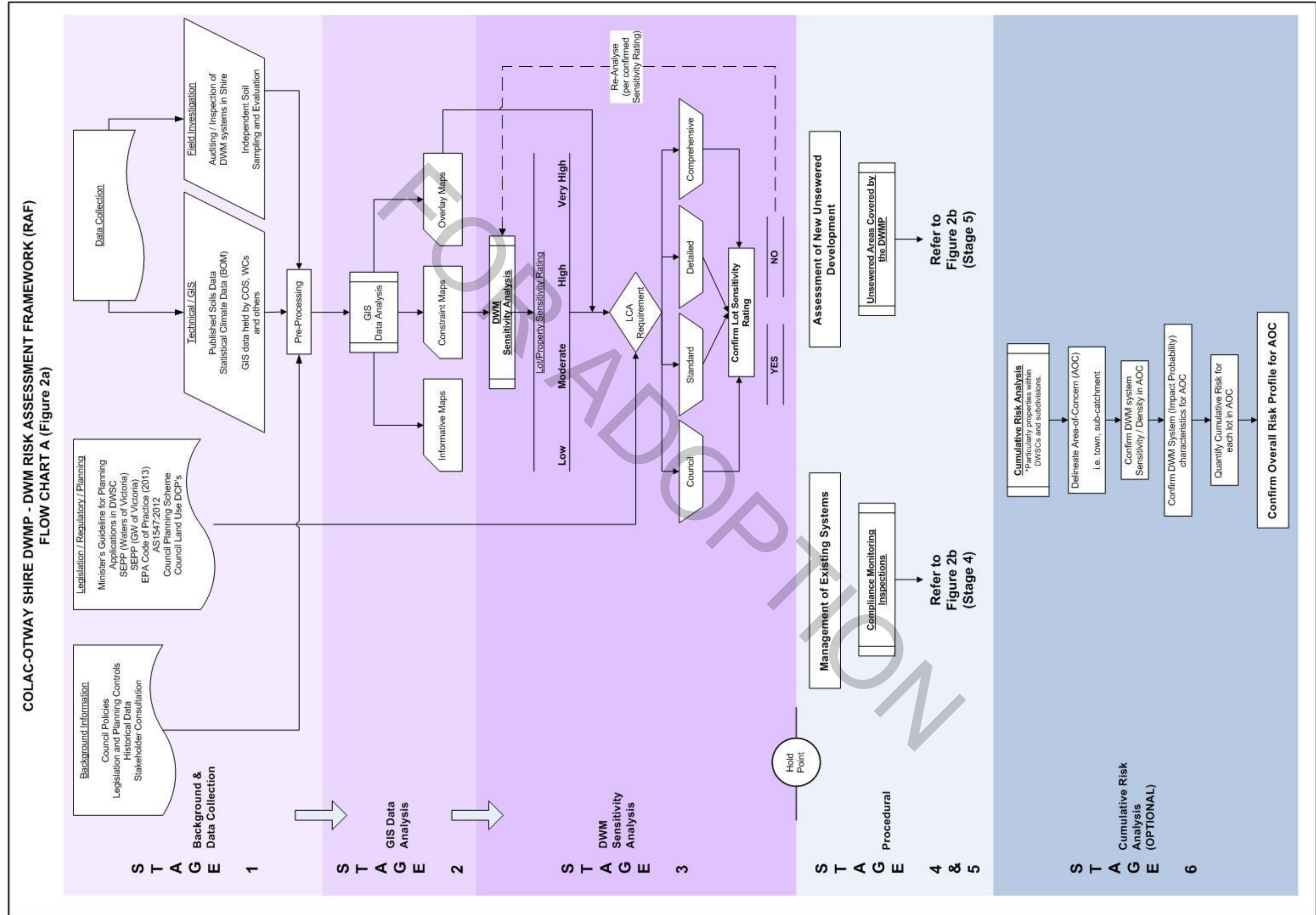
- To determine the level of technical investigation to be undertaken as part of a development application in an unsewered area;
- To identify existing priority unsewered localities and towns/settlements that require more detailed investigations to determine needs (i.e. improvement actions or plans);
- As a guide to develop a monitoring strategy for existing DWM systems in the Shire; and
- As a guide to Council for strategic planning of future unsewered development.

The overall Risk Assessment aims to provide Council with a reasoned and justified tool to prioritise future development, and to implement monitoring and upgrading of DWM systems within the Shire by highlighting regions with elevated DWM risk profiles (e.g. towns/settlements with a large numbers of small lots and older DWM systems). Consideration of both individual (lot) and cumulative (regional) DWM risk provides a versatile tool for:

- a) examining changes from an accepted 'baseline' condition (i.e. water quality or environmental indicators).
- b) preparing cost/benefit analyses for upgrade/improvement options (i.e. DWM vs. sewerage).
- c) comparing alternate land use/development scenarios (i.e. development density).

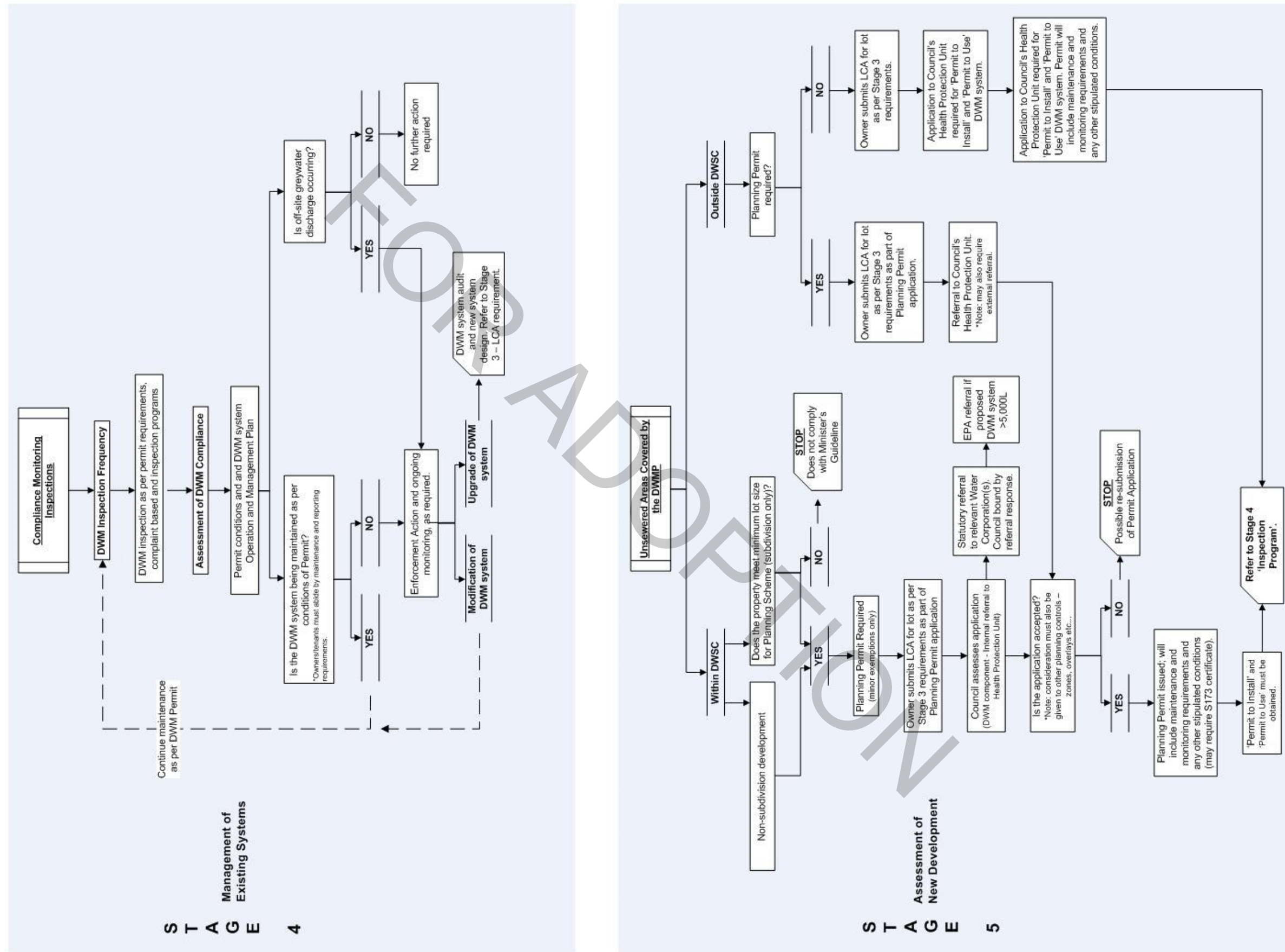


Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan



Whitehead & Associates Environmental Consultants

COLAC-OTWAY SHIRE DWMP - DWM RISK ASSESSMENT FRAMEWORK (RAF)  
FLOW CHART B (Figure 2b)



## 4.1 DWM Sensitivity Analysis (Stage 3)

### 4.1.1 Methodology and Rationale

The primary objective of the DWMP is to assess all ‘unsewered’ ‘developable’ lots within COS to determine their suitability to sustainably manage domestic wastewater on-site in compliance with legislative (i.e. SEPPs) and regulatory (i.e. Code) requirements. The inter-relationship of a wide range of individual constraints and variables affect the specific land capability and associated limitations for sustainable on-site DWM. Understanding this inter-relationship can be difficult, particularly in terms of assessing the relative contributions of individual constraints in a broad-scale evaluation.

The DWM Sensitivity Analysis involved assessing the cumulative effect of the individual constraints detailed in Section 6 of the Technical Document: soil suitability, slope, useable lot area, climate and location (i.e. whether or not a lot is located within a DWSC) for all of the unsewered lots within COS. Each lot was assigned a rating class for each of the individual constraints based on the criteria detailed in Section 6 of the Technical Document.

The following algorithm was developed using professional judgement and reviews of current literature. The algorithm generally follows the rationale developed for the Mansfield Domestic Wastewater Management Plan Pilot Project (Mansfield Shire Council, 2014); with adaptation by the Stakeholder Working Group (SWG) to reflect COS specific concerns. It details how the individual constraints were combined to determine the final Sensitivity Rating for each unsewered lot within COS:

$$((\text{Soil Suitability} + \text{Slope}) \times ((2 \times \text{Useable Lot Area}) + \text{Climate})) / 10$$

The algorithm incorporates the constraints imposed by landform and soil characteristics, as well as the local climate which will impact on the selection and sizing of DWM systems for any given location. The useable lot area refers to the physical constraints imposed by prescribed setbacks from sensitive features, such as surface waterways (permanent and intermittent); groundwater bores and flood prone land. The existing vegetation on a lot, as well as the proposed development footprint (i.e. building envelope and improvements), will also impact on the resultant useable lot area. If there is insufficient area remaining, the lot will be unable to sustainably manage the wastewater on-site and, hence, not comply with the requirements of the SEPP.

The final sensitivity value (number) derived from the algorithm for each lot was assessed to determine the appropriate ‘Sensitivity Rating’ ranges. Further information on the development of the Sensitivity Rating classification is provided in the Technical Document (Section 6.2.1). The following outlines the respective ranges and associated final Sensitivity Rating classes:

- Very High: > 5.5;
- High:  $4 \leq x \leq 5.5$ ;
- Moderate:  $2 \leq x \leq 4$ ; and
- Low: < 2.

Further, all lots were identified as being located within, or outside, a DWSC. This step was included to ensure that all lots located within a DWSC are subject to a LCA prior to development, as per Section 3.6 of the EPA Code of Practice 891.4 (2016). For example, for a ‘low’ Sensitivity Rating lot within a DWSC, the algorithm automatically increases the rating to ‘moderate’ to ensure that a LCA is undertaken, in accordance with the Code of Practice.

The criteria used to determine the Sensitivity Rating categories were based on previous constraint assessments for unsewered towns in Australia undertaken by W&A, and relevant Australian and Victorian guidelines for DWM. Table 4 provides a rationale for the interpretations that were used to derive the ratings, which is also discussed in Section 6.2.1 of the Technical Document.

The final Sensitivity Ratings give guidance towards the DWM requirements as stipulated by Council. For existing DWM systems, the level of sensitivity will commonly reflect the level of

challenge that has been experienced in managing the system. This information will help guide owners and Council in the ongoing management of existing systems.

**Table 4: Sensitivity Rating Descriptions**

<b>Very High</b>	Constraints are present at a very high level and this significantly restricts opportunities for sustainable DWM. Traditional systems are 'typically' not appropriate and a detailed site and soil evaluation would be required to determine if DWM is achievable at all. If achievable, specialised, advanced treatment and land application systems may be required to overcome the constraint.
<b>High</b>	Constraints are present at a high level and this substantially restricts opportunities for sustainable DWM. Traditional systems (i.e. septic tanks and trenches) are 'typically' not appropriate and a detailed site and soil evaluation would be required to determine if they are supported. Otherwise, specialised, advanced treatment and land application systems may be required to overcome the constraint.
<b>Moderate</b>	Constraints are present at a moderate level and this limits the range of DWM options that are appropriate for the site. A detailed site and soil evaluation is required to identify the most appropriate DWM system and mitigation measures to be employed.
<b>Low</b>	Constraints are present at a low level and are unlikely to substantially limit opportunities for DWM. In most cases appropriately designed and managed conventional systems will be accepted.

The terms relate to the underlying level of sensitivity to DWM posed by the lot. These factors are used to direct management (planning) decisions and subsequently, the level or intensity of site-specific investigation (LCA) required.

#### 4.1.2 Sensitivity Analysis Mapping

The final Sensitivity Rating for each individual unsewered lot within COS is shown in Figure 3 and Table 5, which detail the results of the Sensitivity Analysis for the Shire. The final Sensitivity Rating and final map for each of the targeted localities and associated towns/settlements are detailed in the respective Locality Reports in Appendix B of the Technical Document. The targeted localities were highlighted as priority regions of investigation by Council and the SWG. The localities considered in this DWMP are: Alvie, Barham River Catchment (Apollo Bay locality hinterland), Barongarook, Barwon Downs, Beeac, Beech Forest, Carlisle River, Coragulac, Cororooke, Forrest, Gellibrand, Kawarren, Kennett River, Separation Creek and Wye River. The towns represent the developed 'centre' of each locality and are predominantly zoned Township Zone. Barham River, Barongarook and Kawarren, which are within the Rural Living Zone and Rural Conservation Zone, are referred to as 'settlements'. The town/settlement boundaries were primarily based on the zoning boundaries.

The parcels within each town/settlement include both commercial and domestic DWM systems without distinction. Town/settlement boundaries may also, on occasion, transect a given parcel. In that instance the parcel is considered to be within the town/settlement boundary and its Sensitivity Rating will be applied to the entire parcel.

Council maintains a database of the calculated Sensitivity Ratings for all the unsewered properties within the Shire.

An owner can contact Council to obtain the data for the final Sensitivity Rating of their land. As per the Action Plan, Council have added the DWM Sensitivity Overlay to the interactive mapping interface available for all residents on the Council's website. The mapping can be accessed here:

[http://cos.cerdi.com.au/cos\\_map.php](http://cos.cerdi.com.au/cos_map.php); with the layer located within the 'Planning- Domestic Wastewater' folder.

Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot. For example, some waterways such as surface farm dams may not be captured in the mapping which may impact the final Sensitivity Rating and Useable Land for effluent application on a given lot.

FOR ADOPTION

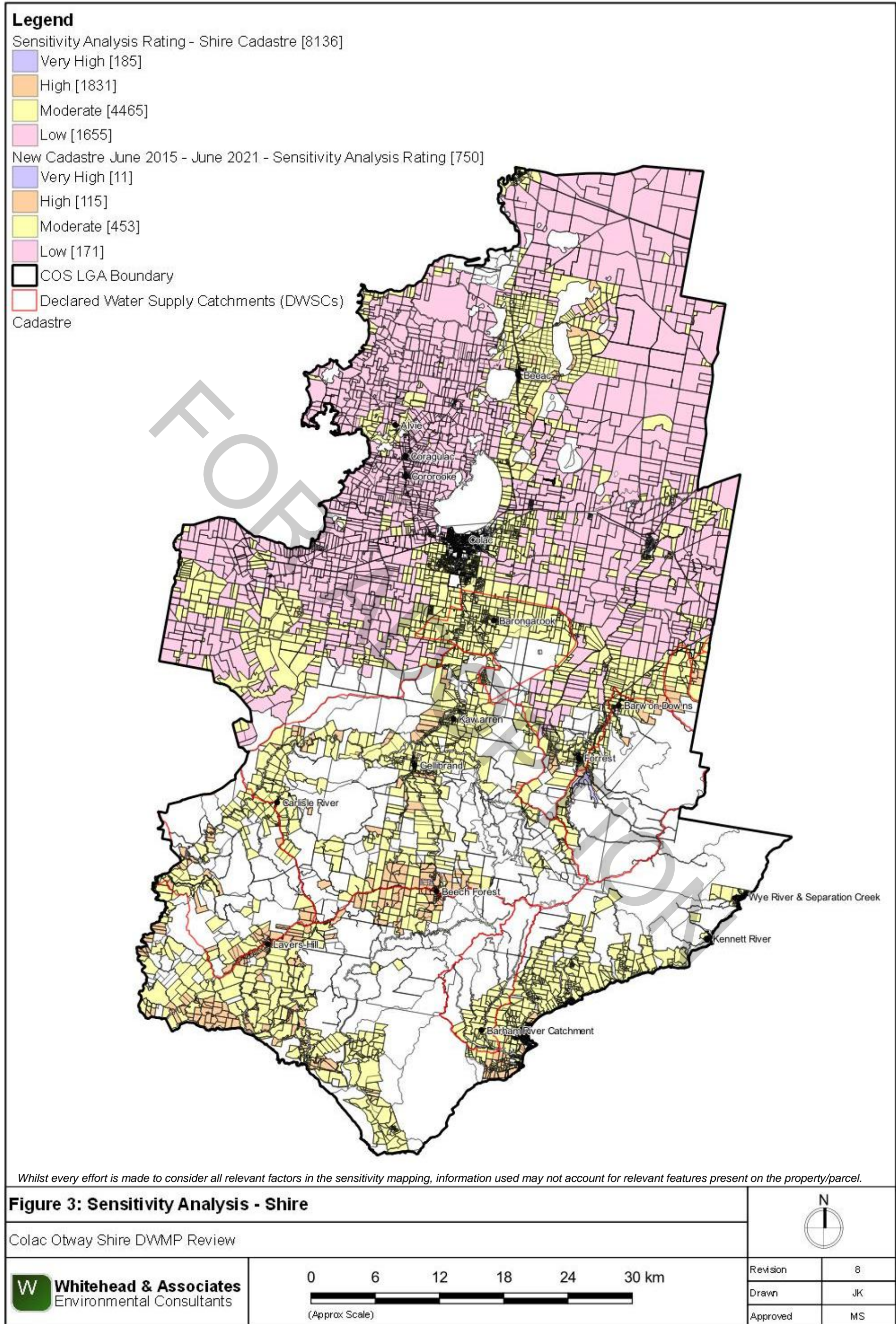
## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

**Table 5: Final Sensitivity Rating Summary**

	Total Lots <sup>2</sup>	Total Number in Final Sensitivity Rating*			
		Very High	High	Moderate	Low
Shire (Overall)	8,136 (750)	185 (11)	1,831 (115)	4,465 (453)	1,655 (171)
Alvie Town (Locality)	33 (161)	0 (0)	3 (8)	22 (73)	8 (76)
Barham River (Apollo Bay) Settlement (Locality)	78 (392)	0 (12)	21 (146)	57 (234)	0 (0)
Barongarook Settlement (Locality)	101 (262)	0 (0)	2 (7)	99 (255)	0 (0)
Barwon Downs Town (Locality)	85 (260)	0 (1)	24 (57)	61 (201)	0 (1)
Beeac Town (Locality)	256 (642)	0 (0)	187 (241)	69 (355)	0 (46)
Beech Forest Town (Locality)	142 (332)	97 (119)	42 (153)	3 (60)	0 (0)
Carlisle River Town (Locality)	25 (246)	0 (0)	0 (38)	25 (205)	0 (3)
Coragulac Town (Locality)	73 (188)	0 (0)	0 (0)	43 (70)	30 (118)
Cororooke Town (Locality)	123 (285)	0 (0)	0 (0)	110 (146)	13 (139)
Forrest Town (Locality)	167 (349)	0 (9)	14 (43)	153 (284)	0 (13)
Gellibrand Town (Locality)	69 (265)	0 (2)	19 (61)	50 (202)	0 (0)
Kawarren Settlement (Locality)	72 (215)	0 (0)	12 (35)	60 (180)	0 (0)
Kennett River Town (Locality)	180 (183)	0 (0)	174 (175)	6 (8)	0 (0)
Lavers Hill Town (Locality)	84 (194)	29 (40)	53 (131)	0 (23)	0 (0)
Separation Creek Town (Locality)	117 (129)	0 (0)	105 (109)	13 (20)	0 (0)
Wye River Town (Locality)	373 (389)	0 (0)	360 (364)	13 (25)	0 (0)

<sup>2</sup> Shire (original (new since 2015)); townships (town (locality)).

Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan



### 4.1.3 Evaluation of Final Sensitivity Analysis

The Sensitivity Analysis resulted in the lots throughout the majority of the Shire being assigned a Moderate Sensitivity Rating. The final Sensitivity Analysis map highlights the inherent relationship that results in only one or two individual constraints (e.g. soil suitability) generally affecting any given lot. This relationship is described further in the individual Locality Reports (Appendix B, Technical Document). Each locality and associated town/settlement has particular DWM constraints that need to be addressed.

The mapping identifies approximately:

- 20.6% of lots within the Shire with a Low Sensitivity Rating;
- 55.3% of lots with a Moderate Sensitivity Rating;
- 21.9% of lots with a High Sensitivity Rating; and
- 2.2% of lots with a Very High Sensitivity Rating.

The spatial distribution of the levels of sensitivity appears to be distinctly influenced by topographical features, such as the Otway Ranges. The northern half of the Shire appears to pose a lower sensitivity to sustainable DWM, whereas, the southern half of the Shire, including the coastline, generally poses a moderate sensitivity to sustainable DWM. Therefore, prioritisation should be towards the areas that pose a higher level of sensitivity.

According to the individual constraint maps as detailed in the Technical Document, the parameters contributing the greatest limitation to DWM within the Shire are soil suitability (which is often due to clayey soils derived from the basaltic parent rocks), slope, climate and useable lot area, (generally associated with surface waterways, particularly within the DWSCs in the Otway Ranges).

It is essential that the limitations of the data used to compile these maps are recognised when using the Sensitivity Analysis map. Whilst individual lots have been assigned a Sensitivity Rating, it is not sufficiently detailed to allow determination of individual system performance or land capability for individual lots. This is why the term Risk Assessment is used to describe the methodology and resultant outputs. An allotment categorised as having a Very High Sensitivity rating will not necessarily be totally unsuitable for on-site DWM or currently be experiencing poor system performance or system failure; however, it is likely to contain a number of significant limitations to the safe operation of on-site DWM systems assessed at a very broad scale.

Overall Sensitivity Ratings should be used to justify the requirement for more detailed individual lot LCAs, more rigorous assessment of development proposals and to target investment in the inspection and management of existing on-site DWM systems, rather than to define system performance or land capability.

Furthermore, the degree of risk depends on the type of effluent dispersal system and generated effluent quality (e.g. subsurface irrigation can be installed on slopes up to 15 – 20% in some cases, but this would be impractical for trenches). This relationship is detailed further in Section 6.2.5 of the Technical Document. Physical constraints can often be overcome or substantially mitigated by a range of measures (such as terracing, importing topsoil fill, installing stormwater diversions, removing vegetation or planting nutrient tolerant vegetation), thereby increasing the 'suitability' of the available area.



## 4.2 Land Capability Assessment (Stage 3)

A Land Capability Assessment (LCA) is required when submitting a Planning Permit application for a development or subdivision on a Moderate, High or Very High Risk lot (or for Low Risk lots within a DWSC), or when a Certificate to Install a DWM system is required.

A LCA must be conducted in accordance with the minimum standards outlined in the current EPA Code of Practice and *AS/NZS 1547:2012* and should be guided by the Victorian Model Land Capability Assessment Framework (MAV & DSE, 2006) (as amended). A LCA needs to demonstrate that the requirements of the SEPP will be met.

The Sensitivity Rating determined by the Sensitivity Analysis will act as the default LCA standard for lots as defined by this DWMP. Copies of the minimum requirements for assessment and reporting for each level of LCA are provided in Appendix C. It is important to note that there may be circumstances where the desktop sensitivity analysis results do not correlate perfectly with actual site conditions. In these circumstances, an increase or decrease in the Sensitivity Rating and LCA requirements may occur at the discretion of Council through completing a Site Inspection and Field Investigation. Therefore, the results of site-specific LCAs will constantly update the Sensitivity Analysis database held by Council, which will improve site understanding and validity of results. A Sensitivity Pro-forma Checklist, as shown below in Table 7 (also attached in Appendix B), can be used by the LCA assessor to accommodate any request to Council to alter the Sensitivity Rating of a lot.

It may be suitable for accredited LCA assessors to provide a clause within the contract warning clients of a potential fluctuation of requirements, and hence cost, that is dependent on Sensitivity Rating confirmation of the lot. The current EPA Code of Practice states that Council's Health Protection Officers (HPOs) or other Authorised Officers (AO) can determine what comprises a satisfactory LCA.

The MAV has developed a model LCA report and procedures to assist LCA assessors and regulators. As a minimum, LCAs should follow the 12-stage best practice model detailed within the current EPA Code of Practice and Victorian LCA Framework (MAV, 2014). The specific LCA requirements for the determined Sensitivity Ratings (Very High, High, Moderate and Low) are detailed below.

**Table 6: Sensitivity Pro-forma Checklist Example**

Parameter	Site specific input
PFI Identification Number <sup>3</sup>	(e.g. 5763482)
Lot Address	(e.g. 57 Main Road)
Locality	(e.g. Barongarook)
Zoning and Overlay	(e.g. Township Zone)
Area (ha)	(e.g. 4ha)
Soil Texture	Soil Category as per AS/NZS 1547:2012 (e.g. Category 4 - Clay loam)
Soil Depth (m)	Depth to limiting layer (1.7m)
Soil Structure	Weak, moderate, strong, massive or apedal (e.g. weak)
Soil Limitations	(e.g. sodic and low fertility)
Permeability (Ksat) (m/day)	Indicative as per AS/NZS 1547:2012 or directly measured in-situ (e.g. 0.1m/day) using approved methodology (i.e. AS/NZS 1547:2012, Appendix G)
Slope (%)	Average slope (e.g. 4%)
Presence of Surface Waters	Distance to nearest surface waters
Useable Lot Area (ha)	Apply all relevant setback distances (e.g. 1.5ha)

With regards to DWM system selection and sizing, the permeability and corresponding 'design' loading rate for the most limiting soil horizon within 600mm from the base of the LAA must be used. This conservative approach ensures that the loading of wastewater on the soil can be supported for the entire soil profile to ensure that surface runoff and excessive deep drainage does not occur. The DWM systems should be sized either:

- as per the System Sizing Tables (Section 7 of the Technical Document) if permitted by this DWMP; or
- by site-specific design as detailed by the respective LCA requirements explained below.

#### 4.2.1 Requirements for Low Sensitivity Lots

**For Low Sensitivity Rating Lots**, it is envisaged that a LCA will generally not be necessary, unless deemed so by Council staff. Council may request for a Soil Assessment to be provided in addition to a Site Plan on a case-by-case basis. Applications for Low Sensitivity lots can be assessed using the Sensitivity Pro-forma Checklist (Table 6 and Appendix B) and/or the 'Site Information Sheet' template in Appendix D of AS1547:2012 to confirm and record the site and soil characteristics. If available for the location, the proposed treatment and land application system combination can be selected from the System Selection (Appendix A) and Sizing Tables (Locality Reports in Appendix B of the Technical Document).

Council may visit the site to confirm site and soil details are as per the Pro-forma detail and that the proposed DWM treatment and land application system is appropriate for the site. If a Low Sensitivity Rating lot is located within a region of increased sensitivity or DWM constraint, Council staff may require, at their discretion, a Standard LCA Assessment and Report to be completed

<sup>3</sup> Either parcel or property identifier.

(Table C1, Appendix C). This may include lots that are located in areas prone to landslip, high groundwater regions, Groundwater Water Supply Protection Areas (i.e. Warrion), or Groundwater Management Areas.

**For Low Sensitivity Rating lots located within a DWSC**, a LCA is mandatory as per Section 3.6 of the EPA Code of Practice 891.4 (2016); therefore, they are automatically required to complete a Standard LCA as detailed in Table C1, Appendix C.

For Moderate, High and Very High Sensitivity Rating lots, or other properties where Council has ordered that a LCA should be prepared, the following guidelines (or as amended) should be adhered to by the consultant preparing the LCA on behalf of the owner:

- EPA Code of Practice – On-site Wastewater Management, Publication 891.4 (2016);
- AS/NZS 1547:2012; and
- Municipal Association of Victoria – Model Land Capability Assessment Framework (2014).

#### 4.2.2 Requirements for Moderate Sensitivity Lots

**For Moderate Sensitivity Rating Lots**, a Standard LCA is required (Appendix C, Table C1) which includes Site Inspection and Field Investigations. However, where appropriate, system design can be determined using the System Selection (Appendix A) and Sizing Tables (Section 7 and the Locality Reports in Appendix B of the Technical Document). For Moderate Sensitivity Rating lots located outside of a DWSC, Council may at its discretion not require an LCA to be completed and the procedure as per Low Sensitivity Rating lots to be followed.

A provision is made for Moderate Sensitivity Rating lots located within Climate Zone 4 (Otway Ridge region) that they must complete Section 6 ‘System Selection and Design’ as per the Detailed LCA procedure, as site-specific design is required for system sizing. This is to ensure that the sensitivity of the Otways and increased difficulty in DWM design due to high rainfall is taken into consideration.

#### 4.2.3 Requirements for High Sensitivity Lots

**For High Sensitivity Rating lots**, a Detailed LCA is required (Appendix C, Table C2) which requires information in addition to the Standard LCA. The main requirement of a Detailed LCA is to undertake a monthly water balance for sizing the DWM system. More comprehensive soil testing is also required to assist with appropriate system selection and ensuring any necessary mitigation measures are implemented into the site management plan.

System Selection and Sizing Tables are not available for High Sensitivity Rating lots.

#### 4.2.4 Requirements for Very High Sensitivity Lots

**For Very High Sensitivity Rating lots**, a Comprehensive LCA is required (Appendix C, Table C3) which understandably requires a higher level of assessment and reporting due to the inherent constraints and risks associated with sustainable DWM on the lot. A Comprehensive LCA requires in-situ permeability testing, soil chemical analysis, conservative monthly or daily water balance, an annual nutrient balance and a detailed site specific hydraulic design in addition to the standard LCA requirements. Council is implementing an in-situ permeability testing protocol that must be followed.

#### 4.2.5 Generic LCA Requirements - Overlays

As detailed in Stage 1 of each LCA procedure (Appendix C), confirmation of any relevant sensitivity overlays (e.g. landslip) with Council is required. If any sensitivity is identified, this needs to be specifically addressed within the LCA. Discussion with Council is required to determine the necessary requirements to be met. If the site is located within an identified landslip region, then a geotechnical report (DWM relevant) will likely need to be completed; refer to Step 4 [pp.35] of the 12-step LCA procedure in the EPA Code of Practice 891.4 (2016) for detail.

If the site is located within a known shallow groundwater region, the depth to (permanent and shallow) groundwater will need to be determined and discussed within the LCA report.

**Additional LCA requirements:**

- All Low Sensitivity Rating lots within a DWSC are required as a minimum to do a Standard LCA as per the current EPA Code of Practice requirements;
- If the lot is applying for an alteration and located within a DWSC, OR the lot is located within a DWSC and does not generate an Environmental Significance Overlay (ESO) 3 trigger, than a minimum of 20/30 secondary treatment standard is required regardless of the Sensitivity Rating of the lot; and
- All lots located within Climate Zone 4, associated with the higher rainfall in the Otway Ridge (i.e. Lavers Hill, Fergusson and Beech Forest), are required to undertake site-specific design and cannot use the System Sizing Tables.

It should be noted that a LCA may indicate that it is not possible to design an appropriate DWM system for a given site and sometimes costs for construction may be prohibitive. However, the onus of justification rests with the LCA assessor who may demonstrate to Council/WC satisfaction that the risk from a proposed DWM system combination has been adequately addressed by design or management measures.

**4.2.6 Subdivision LCA Requirements**

It is very important that an LCA is performed early in the planning phase of land development before rezoning or subdivision as it achieves a more sustainable result, because areas with higher degrees of limitation can be appropriately zoned and subdivision layouts can make best use of the constraints and opportunities of the land. It is also a requirement under the Planning Scheme to be able to demonstrate that the land is suitable for the development of a dwelling prior to subdivision approval. Chapter 5 of the MAV Model Land Capability Assessment Framework (2014) broadly discusses LCAs for subdivisions.

Regardless of the scale of an LCA, the objective is the same, that is, the determination of a sustainable DWM strategy for **each** proposed lot to reduce potential impacts to the local receiving environments. Different management strategies may be required within the same subdivision due to varying constraints identified through the LCA across the site.

Only concept DWM system designs are necessary at this stage to determine the minimum size of the land application area. Options may be left as broad technology types suitable for the lots, with detailed system design required at the individual lot development stage.

The LCA requirements detailed within Section 4.2 are applicable to all scales of development planning and assessment. The Sensitivity Rating of the existing lot will direct the level of detail required for an LCA for a subdivision or rezoning of a lot.

**4.3 Sensitivity Analysis Summary**

The recognised limitations emphasise that the Sensitivity Analysis should only be used as a guide to distinguish regions within the Shire with relatively higher levels of sensitivity to DWM related public and/or environmental health outcomes. The results can be used to target more detailed investigations into suitability for on-site DWM. The Sensitivity Analysis maps help to target the main bio-physical DWM constraints associated with a specific lot which, with appropriate individual assessment and design, can potentially be mitigated or overcome.

Useable lot area, irrespective of total lot size, plays a key role in determining a lot's capacity for sustainable long-term on-site DWM and influences the selection of appropriate systems. As a general rule, the smaller the lot, the less land that will be available for effluent management after allowing for other development of the land. It is difficult to define the minimum lot size that would be required throughout the Shire to ensure long-term on-site DWM without further detailed study. This will vary depending on the physical constraints of the lot and the nature of the development as well as the type of treatment and land application system used.

The Minister for Water's Guideline 1 requires that the density of unsewered dwellings should be no greater than one dwelling per 40 hectares and each lot created in a subdivision should be at

least 40 hectares in area within DWSCs. In order to allow for consideration of a relaxation of this Guideline, a LCA needs to demonstrate that DWM is sustainable with no off-lot discharges and that the minimum zoning lot size requirements (for subdivisions only) in the Planning Scheme are met. Further assessment on sustainable lot densities within specific sub-catchments is required.

It is also evident that variability in constraint exists between the different unsewered localities within the Shire. Further detailed studies into the performance of existing on-site DWM systems within each of the targeted unsewered towns/settlements is recommended to verify the findings of this broad-scale assessment, to provide a more detailed study on maximum lot development density and hence minimum lot size in proposed development areas. This will aid Council in ensuring future development will not adversely impact environmental and public health.

#### 4.4 Prioritisation of Investigation Areas

A key role of the DWMP and Action Plan is to guide the systematic investigation and management of unsewered development within the Shire. Investigation may include:

- Improving and expanding the existing Council DWM database through inspection of undocumented properties;
- Focussing compliance and monitoring activities in areas where risk to public and environmental health is greatest, i.e. highly sensitive lots within DWSCs;
- Developing a greater understanding of the risks of increasing unsewered development density within an Area-of-Concern, which may be described at various scales (i.e. town/settlement, off-take, catchment area etc.); and
- Guiding strategic planning initiatives to enhance environmental objectives (i.e. water quality targets) or to examine alternative wastewater servicing solutions for unsewered areas.

It is not feasible to deal with the requirements of the entire Shire simultaneously, so a process for ranking the priority of 'core' and 'non-core' Areas-of-Concern (AOCs) for investigation effort is required.

'Core' areas include the targeted towns/settlements (as agreed by the Stakeholder Working Group) and delineated sub-catchments within the DWSCs (following the methodology detailed in Section 7 in the Technical Document). 'Non-Core' areas comprise remaining areas within the Shire boundary (residual regions) which were assigned based on their geographic location (i.e. north or south). Prioritisation involved analysis at varying scales to address the variable goals of COS and the WCs.

Priority is based on the density of DWM sensitivity (Sensitivity Density) within each AOC. Sensitivity Density is reported as the aggregated DWM sensitivity (value) per unit area (km<sup>2</sup>). The methodology for calculating Sensitivity Density within each AOC is as follows:

- a) Delineate the AOC (i.e. town/settlement, sub-catchment or residual region);
- b) Confirm the number of unsewered lots within the AOC;
- c) Calculate the cumulative 'Sensitivity Value' for the investigation lots within the AOC (sum of all values);
- d) Calculate the cumulative area of the investigation lots within the AOC (sum of individual lot areas);
- e) Calculate the DWM Sensitivity Density for each AOC (cumulative DWM 'Sensitivity' value per unit area - km<sup>2</sup>); and
- f) Assign the priority ranking of each AOC based on the assigned sensitivity density value.

Lot priority is based on the 'DWM Sensitivity Density' of all unsewered lots within the delineated town/settlement boundaries. Sub-catchment priority reflects the 'DWM Sensitivity Density' for all unsewered lots within the designated sub-catchment, less the lots already included in the town/settlement analysis. This approach follows the intention of the *Guidelines for Planning*

*Permits in Open Potable Water Supply Catchment Areas* (DSE, 2012) where any development proposal must demonstrate that “the proposal does not present an unacceptable risk to the quality and quantity of water generated by the catchment [all land uses] having regard to the land capability assessments, land condition and management conditions of the site and catchment”. Lots that were located within more than one sub-catchment were included in both sub-catchments to ensure conservatism as it is unknown at a regional scale where the development, or potential, is located on the lot.

To complete the picture for the Shire, those areas within the LGA boundary that have not been accounted for in the town/settlement or sub-catchment priority analyses are included as residual regions. These areas are outside of the DWSC boundaries to the north and south of the Shire.

The prioritisation will assist in decision making and planning for future development within the AOCs. Additional detailed analysis and compliance regimes can then be developed with the aim of protecting the environment and public health, whilst allowing for development consistent with Council strategies and planning controls.

Table 7 outlines the results and rankings of the Prioritisation Analysis for each AOC in descending order based on cumulative sensitivity to DWM.

The priority ranking (by Sensitivity Density) will *inform* operational priority which also accommodates other factors in prioritising work, such as objectives in the Council Plan.

## **4.5 Management of Unsewered Development in COS**

Stages 4 and 5 of the Risk Assessment Framework are ‘procedural’ steps for determining the management requirements for existing unsewered development or the need for further investigation and analysis for new development.

### **4.5.1 Management of Existing Systems (Stage 4)**

Existing DWM systems in COS will be managed through the inspection program as described in Section 7 of this DWMP. Stage 4 (Figure 2b) outlines the procedural framework under which COS will prioritise, inspect and, if necessary, require/enforce management of DWM systems in the Shire.

### **4.5.2 Assessment of New Development (Stage 5)**

Proposals for development exempt from planning permit requirements (e.g. dwelling in Township Zone that is not covered by any overlays) will proceed directly to the preparation of a LCA as per the requirements set out in Section 4.2 of this document.

Development and planning proposals for lots located within the DWSC must comply with the minimum lot size specified for the current zoning as per the Planning Scheme (subdivision only). If a lot does not achieve the minimum area, then it is deemed as non-compliant with the Minister for Water’s Guidelines. Assuming the proposal is compliant with minimum lot size criteria, COS or the WCs may consider proceeding to the (Stage 6) Cumulative Risk procedure to develop a baseline condition by which the proposal may be assessed.

Finally, irrespective of where or how development will proceed within COS, Council may consider examining the ‘Cumulative Risk’ of all unsewered development areas using the proposed methodology as part of a longer term goal for managing domestic wastewater systems in the Shire.

Table 7: Prioritisation Summary

Priority Ranking	Area of Concern (AOC)	Location/ Description	Unsewered Lots within AOC	Cumulative Sensitivity Rating	AOC area (km <sup>2</sup> )	Sensitivity Density (per km <sup>2</sup> )
<b>Towns</b>						
1	Kennett River	Outside DWSC	180	865	0.26	3,327
2	Wye River and Separation Creek	Outside DWSC	498	2,386	0.72	3,314
3	Beech Forest	Within DWSC; Sub-catchments E, V and outside	150	917	0.49	1,871
4	Beeac	Outside DWSC	269	1,008	0.63	1,600
5	Lavers Hill	Within DWSC; Sub-catchments T and outside	84	444	0.38	1,168
6	Cororooke	Outside DWSC	112	300	0.35	857
7	Forrest	Outside DWSC; Sub-catchment N (slightly)	167	522	0.72	725
8	Barwon Downs	Within DWSC; Sub-catchments K, L and outside	89	253	0.41	617
9	Gellibrand	Within DWSC; Sub-catchments E, V and U	71	250	0.45	556
10	Alvie	Outside DWSC	33	87	0.19	457
11	Coragulac	Outside DWSC	69	165	0.59	280
12	Carlisle River	Within DWSC; Sub-catchments W and G	26	70	0.27	258
13	Kawarren	Within DWSC; Sub-catchment U	72	225	2.01	112
14	Barongarook Settlement	Within DWSC; Sub-catchments Q and P	101	251	2.99	84
15	Barham River Catchment Settlement	Within DWSC; Sub-Catchments D and S	81	316	18.08	17
<b>SUB-CATCHMENTS</b>						
1	B - West Gellibrand River	Offtake	2	7.2	0.03	240
2	O - Gellibrand River	Discharge	115	362.2	43.67	98.7
3	W - to Carlisle River	Discharge	129	488.1	46.88	70.9
4	H - East Barwon Diversion Gates	Offtake	35	145	3.83	37.9
5	M - to King Creek	Discharge	19	66.8	2.84	23.5
6	F - Wyelangta Depot and North Arkins Creek	Offtake	16	62.6	2.76	22.7
7	N - to Barwon River West Branch	Discharge	58	256.4	12.47	20.6
8	L - to Callahan Creek North Branch	Discharge	31	97.2	5.06	19.2
9	K - to Dewings Creek (Wurdi Boluc Inlet Channel)	Discharge	44	134.7	9.61	14
10	E - Gellibrand Pump Station	Offtake	119	463.8	33.56	13.8
11	V - to Gellibrand River and Charleys Creek	Discharge	242	887.8	65.18	13.6
12	T - to Chappell Creek and Gellibrand River	Discharge	204	845.4	67.83	12.5
13	X - to Gellibrand River (near Sheeppark Creek)	Discharge	67	248.4	23.42	10.6
14	R - to Deans Creek	Discharge	43	107	10.7	10
15	I - Callahans Creek	Offtake	1	4.2	0.43	9.8
16	P - Boundary Creek	Discharge	171	386.7	40.18	9.6
17	G - North Otway River Raw WPS	Offtake	29	93.5	9.89	9.5
18	Q - to Barongarook Creek	Discharge	109	283.7	31.81	8.9
19	J - to Matthews Creek (to the north)	Discharge	57	151.6	24.27	6.2
20	D - Barham River Pump Station 2	Offtake	7	23.7	3.85	6.2
21	S - to Barham River West Branch	Discharge	7	24.4	4.33	5.6
22	U - to Love Creek	Discharge	228	690.6	60.31	1.5
23	A - Olangolah	Offtake	0	0	0	0
24	C - Barham River Pump Station 1	Offtake	0	0	0	0
<b>Residual Regions</b>						
1	Southern	Residual area outside DWSC	1,018	3,782	255.6	14.8
2	Northern	Residual area outside DWSC	4,049	8,780	1,597.50	5.5

## 4.6 Cumulative Impact Assessment of DWM

Cumulative Impact Assessment (CIA) is an indicative risk assessment tool used to provide guidance on potential risks associated with existing or proposed development in unsewered areas. It provides a means of quantifying risks and comparing them with identified benchmarks (i.e. baseline or pre-developed conditions) or performance targets (i.e. water quality indicators). The CIA looks at existing DWM systems within an area and determines the environmental and health impacts that could occur from changes in DWM management (i.e. compliance monitoring), increasing density of DWM systems (i.e. development) or other improvements (i.e. DWM system upgrades).

Example1: CIA would allow Council to test the benefits of implementing a targeted (DWM) improvement program in an AOC (e.g. town/settlement).

Following site inspection, Council would analyse the combined outcome of DWM sensitivity and (DWM) system combination for each lot in the AOC using the procedure described in Section 4.6 (below). The derived value combinations for each lot would then be inserted into a Cumulative Risk Analysis matrix (see Figure 5) to determine the underlying DWM 'Risk Profile' for the AOC.

Quantification of this 'baseline' dataset would then allow Council to examine the sensitivity of the 'cumulative risk' of the AOC to alternate improvement scenarios (i.e. householder education, increased monitoring effort, voluntary system upgrades etc.) and test the benefits of each approach using only desktop investigation tools.

The Minister for Water's Guidelines state that a DWMP must provide a strategy to prevent both individual and cumulative impacts on groundwater and surface water beneficial uses and to also prevent discharge of wastewater off-lot.

Further, the EPA Code of Practice (Section 1.6) states:

*"While this Code primarily refers to single allotments, the **cumulative impact of all wastewaters within a subdivision, a commercial precinct or a township should be taken into account when assessing the capability of a lot to absorb treated effluent without negatively impacting its surroundings.** This is particularly important in areas scheduled as open potable water supply catchments (DSE 2012).*

*To minimise the cumulative impact of wastewater, effluent must be contained onsite within the boundaries of the allotment. This aims to prevent the transport of nutrients, pathogens and other pollutants to surface waters and to prevent any negative impacts on 'groundwater beneficial uses' within the catchment (Clause 32, SEPP WoV 2003).*

*For existing **premises with an offsite discharge or a failing system on a small lot the wastewater management system should be upgraded** to contain as much of the effluent as possible on the allotment".*

There is no pro-forma methodology for completing CIA for DWM. It is possible to use extensive modelling of DWM system performance and catchment run-off and pollutant characteristics to estimate the potential human health and environmental impacts of multiple DWM systems. However, the level of detail and complexity can be varied to reflect the potential risk (a function of the likelihood and/or consequence of failure) a specific proposal poses to human and ecosystem health.

This DWMP proposes a semi-quantitative approach using the outcomes of the Sensitivity Analysis, (DWM) system detail and compliance/performance information to develop an adaptable DWM 'Cumulative Risk' analysis procedure.

The following sections detail a methodology to develop procedural and management systems within and throughout the DWMP implementation process that will allow for integration of strategic information (i.e. planning schemes or proposals), generated data (i.e. DWM Sensitivity Analysis) and collected data (e.g. water quality, system inspection information) into a usable risk assessment tool.



It is acknowledged that this type of procedure is “aspirational” in nature and should be considered an **OPTIONAL** component of the DWMP. However, this limitation should not detract from the consideration and value of such an undertaking. Risk Assessment is a two-dimensional analysis that reflects not only the consequence of an event or action (DWM Sensitivity Analysis), but also the likelihood of that event/action occurring. The proposed ‘Cumulative Risk’ procedure provides a flexible (semi-qualitative) approach to measuring the likelihood of an adverse (DWM-related) event in an AOC. This attribute is referred to as the ‘Impact Probability’ rating hereafter in this document.

#### 4.6.1 Cumulative Risk Analysis (Stage 6)

The potential for DWM systems to result in consequential degradation of both surface water and groundwater resources depends on the nature of the discharge (i.e. surface or subsurface) and the capacity of the lot to assimilate the effluent and attenuate associated pollutants such as nitrogen, phosphorous and pathogens. System age, selection, sizing and design, as well as correct operation and maintenance, also contribute to the potential under-performance<sup>4</sup> of a DWM system.

Programs need to be put in place to minimise DWM system under-performance and to rapidly identify and address events when they occur. The following methodology assesses the cumulative impact of DWM systems on environmental and public health by comparing the probability of DWM system under-performance with the ability to contain DWM on-site (Sensitivity Rating).

As part of Council’s compliance monitoring, detailed in Section 7, a database of DWM system information will be constantly updated and managed to assess the current situation and prioritise improvements or upgrades. From knowing details about a particular DWM system, the probability of under-performance can be estimated. Key DWM system attributes used to estimate the probability of system under-performance are:

- The treatment system (e.g. septic tank) and land application system (e.g. leach drain) combination in operation;
- The expected wastewater volume (loading) treated by the DWM system; and
- The system’s age and assumptions about the effluent quality proposed/likely to be produced.

The probability of under-performance of a DWM system is based on its degree of potential to cause environmental or public health impacts. Figure 4 (following) presents an ‘Impact Probability’ matrix based on the attributes previously described. The rating is presented on a scale of one to five representing recently constructed, heavily designed or highly managed systems (e.g. publicly managed community systems) at the lower end of the scale (1) through to ageing, outdated and un-managed systems (e.g. split black/grey water systems) at the other (5).

Example 2: A domestic all-waste system, such as an AWTS (with disinfection), discharging to an irrigation land application area. If the system was installed within the last 5 years it would be expected to hold a current EPA Certificate of Approval and be capable of reliably achieving secondary effluent quality standards. The land application area would be expected to have been designed, sized and located according to current best-practice procedure (i.e. EPA Code of Practice), with irrigation by way of subsurface or covered drip application. This system would be expected to be managed by contractual arrangement with a qualified system maintainer, with regular reporting to Council. The likely ‘Impact Probability’ rating for this system would be:

<sup>4</sup> Identified deficiency (management, structural or operational) leading to actual or potential off-site discharge of untreated or poorly treated (DWM) effluent in such a manner or quantity that it may cause consequential impact to off-site environmental resources (water quality) or public health outcomes.

*(2) Low-Moderate probability that hydraulic (surface/subsurface), organic and nutrient safeguards (design, performance, mitigation) may not be sufficient to prevent consequential impact to off-site environmental resources (water quality) or public health outcomes.*

If the same system was >10 years old, the AWTS may no longer hold an EPA Certificate of Approval (or may no longer be manufacturer supported). The technology/design of the system may not be able to reliably achieve secondary effluent quality standards and may not include disinfection. The land application area would likely have been designed, sized and located according to outdated procedures, with irrigation by way of surface (i.e. sprinkler type) application. There is a reduced likelihood that this system would be managed by contractual arrangement with a qualified system maintainer. The likely 'Impact Probability' rating for this system would be:

*(5) High probability that hydraulic (surface/subsurface), organic and nutrient safeguards (design, performance, mitigation) may not be sufficient to prevent consequential impact to off-site environmental resources (water quality) or public health outcomes.*

The extent and resultant impact of DWM system under-performance varies greatly, and the consequences for water quality will depend primarily on the degree and spatial density of events in the AOC. Under some conditions, even when a DWM system under-performs, effluent will still be retained on-lot. However, in other circumstances, DWM system under-performance may be minor but may quickly enter a sensitive environment (e.g. creek) and cause detrimental effects.

Therefore, it is important to determine the particular sensitivity of each AOC. In some cases (i.e. highly developed or degraded areas) the 'tolerable' level of DWM system under-performance may be greater than expected in an AOC of greater resource value (i.e. DWSC). The tolerable under-performance level will vary between AOC's due to the wide range in environment dynamics, system combinations and sensitivities.

The key objective being determined by the SEPP requirements of "On-site domestic wastewater needs to be managed to prevent the transport of nutrients, pathogens and other pollutants to surface waters and to prevent any impacts on [water/groundwater] beneficial uses". Beneficial use being defined as "a use of the environment which is conducive to public benefit, welfare, safety, health or aesthetic enjoyment and which requires protection from the effects of waste discharges".

The beneficial uses relating to this DWMP, and also Colac Otway Shire generally (including DWSCs), include:

- water suitable for human consumption;
- water based recreation;
- water suitable for agriculture;
- aquatic ecosystems; and
- water suitable for the consumption of aquatic organisms (e.g. fish).

The *Policy Impact Assessment* (PIA) for the SEPP (WoV), prepared by the EPA (2003), describes how setting targets to measure the environmental quality of waterways should aim to drive continuous improvement (Section 6.4 Policy Purpose), stating that:

"This guidance helps [these] organisations understand what they need to do to improve environmental quality and protect beneficial uses. The goals provide some specific areas of focus for the next 10 years, to ensure that actions important to protect beneficial uses are implemented. This does not mean however that all environmental quality objectives need to be attained or actions fully implemented within that timeframe, but that progressive improvement is made towards their attainment. Therefore, actions in the attainment program need to be implemented in a priority-driven and practicable manner".

It is particularly important within DWSCs to ensure that the quality of the resources is maintained; therefore, the overall cumulative impact of DWM on a sub-catchment should be assessed to

ascertain particular risks and implement correct operational and management procedures to reduce any potential risks.

#### 4.6.1.1 Pilot Study (Separation Creek)

To demonstrate the benefit and applicability of the CIA approach to DWM system management in COS, a small 'pilot' study was conducted for the Separation Creek town (AOC). Council holds a substantial database of DWM system records for the coastal towns of Wye River and Separation Creek and a number of other environmental and water quality investigations have been prepared for the area in recent years (e.g. SKM 2014). This analysis was conducted prior to the 2015 bushfires.

The Separation Creek (DWM) data set was analysed and interpreted to determine Impact Probability ratings for each of the 123 unsewered lots identified within the town boundary. Using the methodology described previously, these values were then correlated with the corresponding Sensitivity Ratings for each lot using a 'Cumulative Risk Analysis' matrix. A copy of the matrix prepared for the pilot study is provided as Figure 5.

As shown, the underlying **Risk Profile** for Separation Creek is 'High-Very High' based on existing information. Where available information on system type/age/performance has been limited, the analysis has taken a conservative 'worst-case' approach. The data set would be improved based on site-specific investigation and compliance monitoring as part of the DWMP implementation. Where '0' values are recorded, the lot has been identified as 'vacant'.

The pilot study has shown the use of the CIA procedure is a useful component of a holistic assessment of DWM risk within the Shire. Using the existing situation (baseline condition) as a starting point, Council is able to compare and contrast a range of options to address DWM impacts from the town. Changes from baseline condition can be confirmed by follow up investigations of environmental/water quality or other indicator targets (as defined).

Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

System Combination			System Age			
			< 5years	5-10 years	> 10 years	Unknown
Domestic System - single-residential dwelling or equivalent (<2,000L/day)	Split	Split-waste system. Blackwater septic tank followed by subsurface disposal (trench or pipe). Greywater discharge typically to stormwater system (may include sand-filter treatment prior) or uncontrolled discharge.	4	5	5	5
	Primary	All-waste system (black/greywater). Treatment in septic tank, composting/vermiculture system (or similar) to primary effluent standard, followed by discharge to subsurface trench/bed or LPEd (below-ground application).	3	4	4.5	5
	Secondary	All-waste system (black/greywater). Treatment in AWTS, membrane and/or biological or media filter system to secondary effluent standard (including disinfection), followed by discharge to subsurface or surface land application.	2	3	4	4
	Tertiary	All-waste system (black/greywater). Treatment in secondary treatment system (as above) but demonstrably achieving advanced secondary effluent standard (including nutrient removal) suitable for high-quality uses (surface / subsurface landscape irrigation).	2	3	3.5	4
Commercial System - large scale (>2,000 L/day) systems managing combined wastewater from multiple dwellings or non-residential landuses	Primary	All-waste system (black/greywater). Treatment in single or multiple septic tank(s), composting/vermiculture system (or similar) to primary effluent standard, followed by discharge to subsurface trench/bed or LPEd (below-ground application).	3	4	5	5
	Secondary	All-waste system (black/greywater). Treatment in commercial AWTS, membrane and/or biological or media filter system to secondary effluent standard (including disinfection) followed by discharge to subsurface or surface land application.	2	3	4	5
	Tertiary	All-waste system (black/greywater). Treatment in secondary treatment system (as above) but demonstrably achieving advanced secondary effluent standard (including disinfection and/or nutrient removal) suitable for high-quality uses (surface / subsurface landscape irrigation).	2	3	3.5	4
Community System - reticulated sewer, STEP/STEG, low-pressure/vacuum sewer or similar	Variable	Decentralised collection/treatment/land application system(s) servicing multiple dwellings, properties and/or landuses. May include local collection/treatment (on-lot infrastructure) and remote land application options. Centralised management by Water Authority or contracted entity.	1	1	2	3

- 5 High probability that hydraulic (surface/subsurface), organic and nutrient safeguards (design, performance, mitigation) may not be sufficient to prevent consequential impact to off-site environmental resources (water quality) or public health outcomes.
- 4 Moderate-High probability that hydraulic (surface/subsurface), organic and nutrient safeguards (design, performance, mitigation) may not be sufficient to prevent consequential impact to off-site environmental resources (water quality) or public health outcomes.
- 3 Moderate probability that hydraulic (surface/subsurface), organic and nutrient safeguards (design, performance, mitigation) may not be sufficient to prevent consequential impact to off-site environmental resources (water quality) or public health outcomes.
- 2 Low-Moderate probability that hydraulic (surface/subsurface), organic and nutrient safeguards (design, performance, mitigation) may not be sufficient to prevent consequential impact to off-site environmental resources (water quality) or public health outcomes.
- 1 Low probability that hydraulic (surface/subsurface), organic and nutrient safeguards (design, performance, mitigation) may not be sufficient to prevent consequential impact to off-site environmental resources (water quality) or public health outcomes.

User Defined User' may interpret matrix based on individual site or system characteristics and present (decimal) value within assigned range (qualitative assessment).

Figure 4: DWM Impact Probability Matrix

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

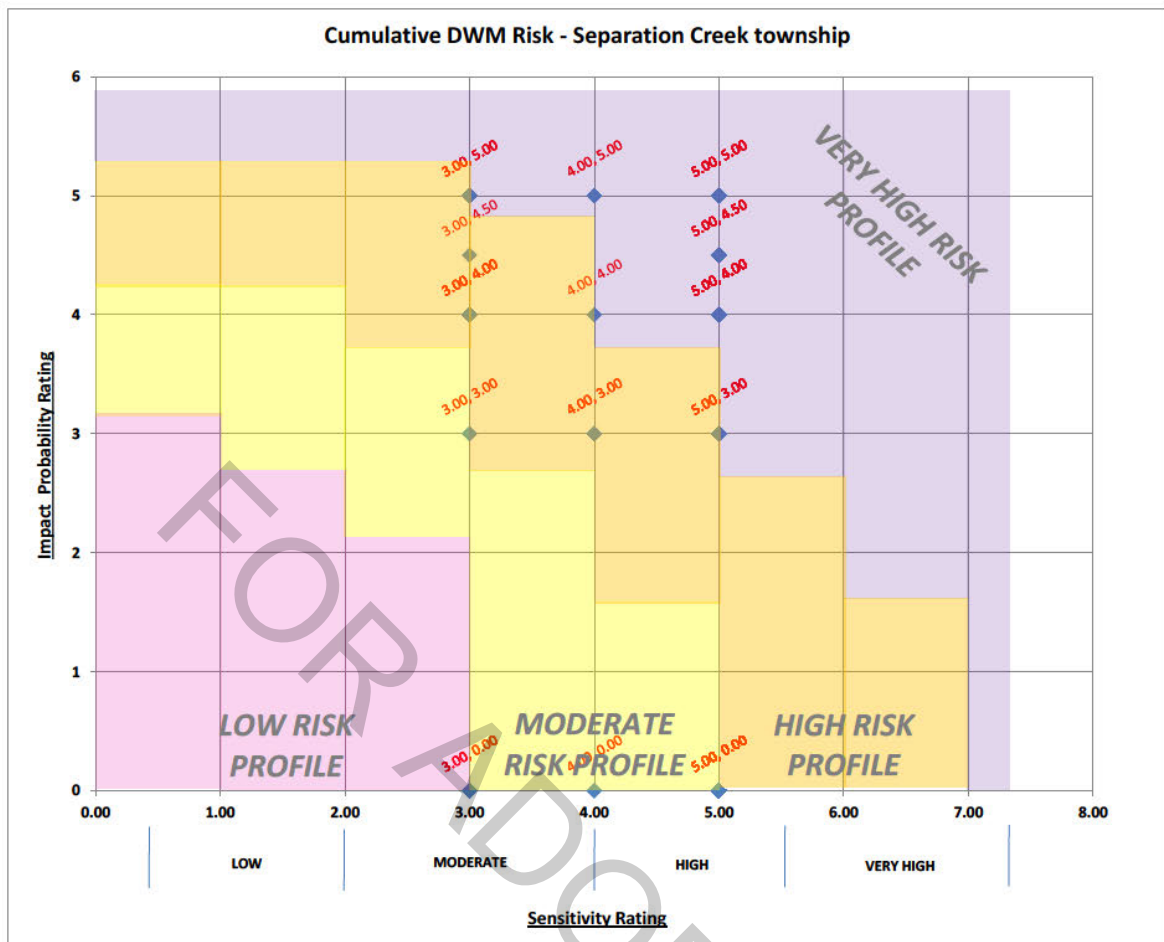


Figure 5: Cumulative Risk Analysis (Matrix)

#### 4.7 Limitations of the Risk Assessment Framework

There are several limitations inherent in the methodology adopted to assess the variation in on-site domestic wastewater related sensitivity throughout the Shire. Briefly, these are due to:

- The use of broad-scale mapping and desktop analysis, with only limited field-truthing of physical attributes;
- A lack of digital data in some areas;
- The present level of scientific understanding and uncertainties relating to the physical and chemical processes and their implications for sustainable on-site DWM. Current best practice derived from wide experience in Australia, New Zealand and the United States was used in this assessment;
- The limited availability, quality and accuracy of attribute data; and
- Limitations in the method of assessing the inter-relationship and cumulative effect of individual attributes and constraints.

The recognised limitations emphasise that the Sensitivity Analysis mapping should only be used as a preliminary attempt to distinguish regions within the Shire with relatively higher levels of risk to public and/or environmental health and with the objective of determining preliminary priority for future wastewater servicing. The Sensitivity Analysis can be used to target more detailed investigations into suitability for on-site DWM as detailed in Section 4.5.2.

## 5 Development Planning and Assessment

Common issues associated with development planning and assessments include:

- Development pressure on small lots (typically <2,000m<sup>2</sup>) that were subdivided before the formal regulation of DWMs was introduced;
- Development pressure for new unsewered subdivisions on marginal land with limitations to DWM;
- Adoption of consistent and sustainable minimum lot size for new unsewered subdivisions;
- Establishing a minimum lot size that allows for the long-term repair and replacement of DWM system components;
- The enforcement of connection to existing sewerage systems for new subdivisions on the fringes of towns such as Colac and Apollo Bay;
- Meeting the Water Corporation requirements for development within DWSCs;
- Maintaining a consistent standard of installation and construction of DWM system components; and
- Ensuring on-site DWM system designs incorporate appropriate technologies for the site(s).

### 5.1 Assessment of DWM Proposals

Council's procedures for assessing DWM proposals are detailed in Sections 4, 6 and 7 of this Operational Plan. All DWM proposals must be submitted to Council with a 'Permit to Install' application form for the proposed treatment and land application systems. DWM proposals in Declared Water Supply Catchments (DWSCs) will be referred to the relevant Water Corporation (and other agencies, as required). The Action Plan (Action No. 1) includes a review and finalisation of Council procedures for the assessment of DWM proposals.

A LCA will not be necessary for Low Sensitivity lots located outside of DWSCs (as identified by the Sensitivity Analysis mapping), unless Council considers it is necessary due to site-specific factors. The minimum Sizing Tables (in the Locality Reports in Appendix B of the Technical Document) will be appropriate for Low and Moderate Risk lots outside of the DWSCs and not within Climate Zone 4 (unless otherwise determined by Council). LCAs and detailed designs will be required for all lots located within DWSCs and all High and Very High Sensitivity Rating lots (and any other lot as determined by Council).

Records of development and rezoning applications in unsewered localities provides useful data about development pressures across the Shire and can be used to inform strategic land use and development planning decisions in the unsewered towns/settlements and their surrounds. As per Action No. 7a of the Action Plan (Section 13), the Locality Reports in Appendix B of the Technical Document were reviewed in addition to system inspection data to inform planning decisions in unsewered towns. It is important to ensure that the broader planning processes and decisions take into consideration the DWMP and ongoing inspections and therefore all the Planning and EHO should be briefed on the requirements (Action No. 7b).

### 5.2 Development Potential in Unsewered Localities

The Colac Otway Shire Rural Living Strategy (2011) investigated existing localities for their future development potential. It identified 'moderate' development potential in Forrest, Beeac, Alvie, Cororooke (apart from Langdons Lane), and Coragulac (all of which are located outside of DWSCs). Detailed assessments and maps of each of these towns/settlements (which include the surrounding locality area) are provided in the Locality Reports in Appendix B of the Technical Document. The results of the Sensitivity Analysis mapping indicate that these localities are generally of Low to Moderate Sensitivity for DWM and therefore could support further expansion

with appropriate planning. Obviously other factors such as bushfire implications would also have to be considered.

The Rural Living Strategy (2011) identified Gellibrand, Lavers Hill and Beech Forest as having 'deferred' growth potential, dependent on water catchment constraints and bushfire hazard being satisfactorily addressed. Detailed assessments and maps of each of these localities (including the towns/settlements) are provided in the Locality Reports in Appendix B of the Technical Document. The results of the Sensitivity Analysis mapping indicate that of these three localities, Gellibrand has the most development potential, with a higher proportion of Low and Moderate Sensitivity lots across the broader locality area compared to Lavers Hill and Beech Forest. This is primarily due to higher rainfall and typically steeper slopes in Lavers Hill and Beech Forest compared to Gellibrand. However, where the long-term sustainability of proposed DWM systems can be supported by appropriately detailed LCA and DWM system design, expansion of these towns is not precluded by the Sensitivity Analysis mapping.

### **5.3 Minimum Lot Size for New Developments**

The Sensitivity Analysis mapping will assist Council in planning for future development and determining minimum lot sizes for future subdivisions. The assessment of a site for DWM potential is important as it can assist in understanding the site's potential for development. Historically, wastewater management was overlooked in early planning stages and it has resulted in a number of subdivided parcels within towns and low density residential areas (i.e. settlements) being significantly undersized. Due to small lot size, these parcels have been given a High Sensitivity Rating in the Sensitivity Analysis and generally wastewater management on these parcels is constrained and potentially unsustainable. This does not automatically preclude them from development; however, appropriately detailed LCA and design will be required to the satisfaction of Council and other stakeholders, including the relevant Water Corporation (in accordance with the Sensitivity Rating). Where DWM is not supported on small lots, consolidation with adjacent undeveloped lots (where feasible) is the most likely pathway to allowing development proposals to be considered on the land subject to appropriate zoning of the lots in question, and approval by Council and other relevant stakeholders. Such approval will also take into account other planning controls relating to the land.

Where rezoning of land is being considered or Structure Plans are being developed, Council can use the Sensitivity Analysis to determine suitable development potential and density. The results of the Sensitivity Analysis mapping and DWM system inspections carried out in September 2014, support a general minimum lot size of 0.4ha (4,000m<sup>2</sup>), assuming that there is adequate 'useable' land for DWM, including a sustainable effluent dispersal or reuse system contained entirely within the lot boundary. This minimum lot size is a broad guideline only; detailed LCAs must be carried out for all subdivision and single-lot developments within all DWSCs. The EPA Code of Practice 891.4 (2016) recommends considering the feasibility of providing a reticulated sewerage system for the development of individual lots and for subdivision proposals that would result in allotments <1ha, which is a recommended risk threshold rather than minimum lot size.

Constrained properties, such as those with steep slopes, very shallow soils or in close proximity to surface waters or groundwater bores, will need to demonstrate that they have adequate available land for the sustainable application of treated effluent. 0.4ha may be too small in such instances; however, innovative building design and lot layout can mitigate constraints on previously undeveloped or redevelopment sites.

### **5.4 Stormwater Management**

The field investigations in September 2014 identified stagnant stormwater in road drains in towns/settlements following wet weather, which was exacerbated by the inflow of greywater directly discharged from properties. Improvements to street drainage can be investigated on a needs basis for towns/settlements following the incremental upgrading and/or replacement of DWMs in towns/settlements. However, generally speaking, there is no urgency to upgrade street drains or improve street drainage while greywater connections to street drains persist.

Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

---

Where greywater is found to be discharging to stormwater drains during onsite system inspections, upgrade works will be required to the discretion of Council to redirect greywater to the onsite wastewater system and land application area under the *Environment Protection Act 2017* (as amended). The progressive upgrade of stormwater drains will improve stormwater drainage in the Shire and would require discussions between the relevant Council departments and fall under the Colac Stormwater Development Strategy (2019).

FOR ADOPTION



## 6 DWM System Design, Approval, Installation and Operation

This section broadly describes how planning and operation of DWM systems should be carried out by owners and occupiers of the land in unsewered localities of the Shire, with reference to the Sensitivity Analysis and Risk Assessment Framework described in detail in the Technical Document. The level of detail required to support a proposal for DWM on an unsewered lot is outlined in the relevant LCA procedure (Section 4.2), which reflects the lots Sensitivity Rating.

### 6.1 Council's Responsibilities

The amended *Environment Protection Act 2017* (supported by the *Regulations 2021*) is used to regulate DWM systems within Victoria. Council is responsible for issuing permits for new and altered DWM systems under the amended *Environment Protection Act 2017*. Council is also responsible for the management of all DWM systems within the Shire; this includes the inspection of existing systems and ensuring compliance with Council, EPA and legislative requirements (including the *Public Health and Wellbeing Act 2008*). Council will be utilising the new EPA '*Regulating onsite wastewater management systems: local government toolkit*' (publication 1974:2021) to assist them in regulating DWM systems within COS and adhering to the new Act. The flowchart for investigating DWM under the *Environment Protection Act 2017* and Regulations as detailed in Appendix 3 of the toolkit is replicated here as it gives a good overview of Council's directions in DWM.

The new legislation introduces the general environmental duty (GED), under which, anyone conducting an activity that poses a risk to human health and the environment is required to minimise those risks, so far as reasonably practicable. A delegation of functions and powers from EPA to Council under the new Act will allow for Council to support compliance and take required action under the GED.

The Regulations 2021, will provide criteria for Councils to consider when assessing permit applications, including suitability of the site, the DWM system, the proposed use, and the findings of any LCA. This provides Councils the flexibility and discretion to assess applications appropriately and provides transparency and consistency in decision making. Circumstances when a permit must be refused are also provided. Permits will be issued for a maximum five (5) years.

Council will update and prepare procedures (refer to the Action Plan in Section 13: Action No. 1) in line with the relevant requirements. The legal requirements of Council include (but are not limited to):

- Application for a 'Permit to Install/Alter' must be completed by the owner/builder/installer and submitted to Council for assessment;
- The system must comply with current Standards and the current EPA Code of Practice;
- For DWM systems in DWSCs, Council cannot issue a 'Permit to Install' until it has received comment and/or conditions from the applicable Water Corporation;
- Council must issue a 'Permit to Install/Alter' before a DWM system can be installed;
- A Council officer assesses the application and plans and conducts site inspections. Further information may be requested from the applicant;
- Council issues a 'Permit to Install' with approved plans and conditions or refuses application;
- The system must comply with permit conditions and its relevant EPA Certificate of Conformance;
- The system is inspected by a Council officer during installation;
- Council must issue a 'Permit of Use' before the DWM system can be used;

Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

---

- Council can issue fines to a system owner if an installation permit is not complied with; and
- Council can issue infringement notices (fine) under Regulation 171, and can issue improvement notices (Section 271 of the *Act*) and prohibition notices (Section 272 of the *Act*), if they have reasonable belief that any of the grounds listed in those sections of the *Act* are satisfied, to ensure the system ceases to operate and/or is upgraded to appropriately reduce the risk of human or environmental health impacts under the GED.

Inspection staff may inspect the site of a proposed DWM system at multiple stages during the assessment and installation process, as determined on a case-by-case basis. Key site inspection milestones can include (but are not limited to):

1. Pre-installation site inspection to ensure the site is suitable for the proposed DWM system (i.e. ground-truthing of the Land Capability Assessment);
2. Inspection during the installation stage, before excavations are back-filled (i.e. trenches are open and the wastewater treatment system has been installed but not backfilled, and not yet turned on), to ensure the system has been installed correctly; and
3. A post-installation inspection to ensure that the installation is complete and that the system is operating correctly.

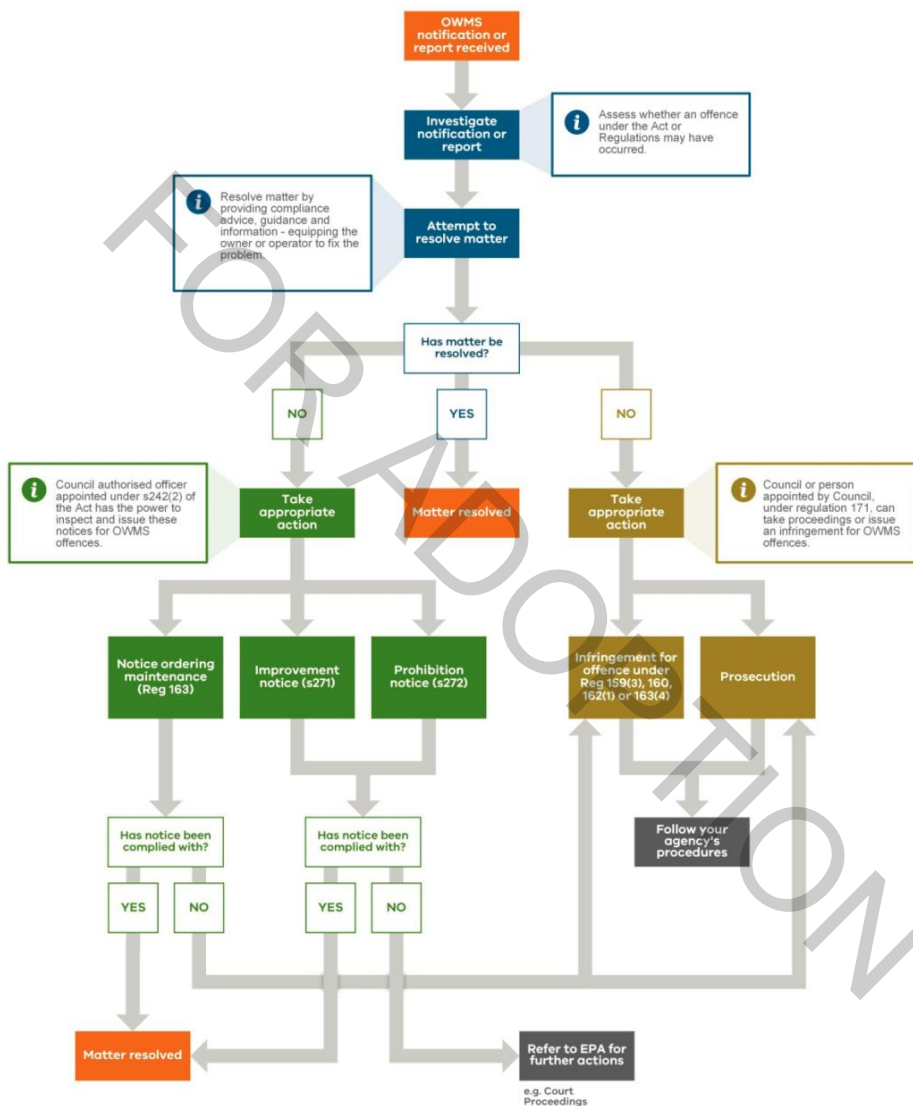
The number of inspections carried out must be weighed against the available resources (staff time) to carry out the inspections. Low risk sites may require just one inspection, whereas high risk sites may require three or more inspections, depending on the circumstances of each proposal.

Upgrade options for poorly performing systems are discussed in further detail in Section 8.

Regulating onsite wastewater management systems: local government toolkit

Appendix 3: Investigation flowchart

Investigating OWMS under the Environment Protection Act 2017 and Regulations



## 6.2 Owners' and Occupiers of the Land Responsibilities

The operation and maintenance of DWM systems (both new and legacy) will be managed under the GED. The GED requires any person that operates a DWM system (owner and occupier of the land) to take all reasonably practicable steps to eliminate or reduce risks of harm to the environment and human health so far as reasonably practicable. Part 5.7 of the *Regulations 2021*, states that for persons in management or control of land which a DWM system is located, including legacy systems that do not have a permit that were installed pre-1970 superseded Act; have an obligation to take reasonable steps to maintain the DWM system in good working order, a duty to keep maintenance records, respond to any problems that arise, and notify Council of a failure and rectification steps.

The owners and occupiers of the land (i.e. tenants) of unsewered dwellings and commercial operations have primary responsibility for the operation and maintenance of the DWM system. In accordance with the EPA Code of Practice, owners and occupiers must ensure that the DWM system is operated, maintained and monitored in accordance with Council requirements. This requires a proactive approach from owners and residents, with Table 2 of the new EPA '*Regulating onsite wastewater management systems: local government toolkit*' (publication 1974:2021) outlining the requirements for the operation and maintenance of a DWM system for both the owner and occupier of the land. As a minimum:

- familiarise themselves with the type of system (treatment and land application components);
- identify the location of all system components on the site;
- regularly inspect their system for any signs of problems;
- regularly maintain their system to prevent problems from occurring (or worsening) (i.e. desludging, pipe integrity, comply with manufacturer specifications and recommendations, repair and replace components and fittings);
- follow any instructions issued by Council pertaining to their system;
- ensure that the contents of the DWM system does not overflow;
- notify the Council as soon as practicable after the person becomes aware, or reasonably should have been aware, that the system poses a risk to human health or the environment, or is in otherwise not in good working order (i.e. disposal area becomes sodden, wastewater runoff from disposal area, order, drain or toilet running slowly, grease trap full or blocked);
- keep and hold all records of maintenance activities carried out on the system, including any pump out and service records, for five years after each activity. These must be made available for inspection if Council requests it under sub-regulation (1); and
- to upgrade or replace their system where insurmountable problems are occurring.

Owners of land on which a DWM system is located must provide written information to a person in management or control of the DWM system (i.e. tenant/ occupier) regarding the correct operation and maintenance of that system.

Details on appropriate DWM system maintenance are provided in Section 6.6 and Section 8 of this Operational Plan. Details on options for upgrading and replacing DWM systems are provided in Section 8 of this Operational Plan. Objectives to achieve better DWM system management in the Action Plan (Section 13) include:

- ✓ Action 1 – development of Council policies and procedures;
- ✓ Action 4b – ongoing management of the planning map interface on Councils website for the Sensitivity Mapping, allowing owners to determine individual lot Sensitivity ratings;

- ✓ Action 6 – compliance audits, monitoring and necessary upgrades or modifications based on existing DWM system permit conditions to ensure compliance; and
- ✓ Actions 8 and 9 – development of a community and owner education program.

### 6.3 LCA Assessor/System Designer's Responsibilities

The EPA Code of Practice outlines minimum requirements for land capability assessors (Section 1.8.3) with regards to qualifications, experience, association, insurances and independence.

The professional engaged to undertake the LCA and the DWM system design has a responsibility to prepare a site-specific DWM design and supporting documentation that demonstrates that the requirements of the SEPP and the *EP Act 2017* will be achievable. The LCA must include sufficient information regarding treatment performance (effluent standard) and land application area (sizing and layout) to allow for an appropriate DWM system design to be provided with an application.

The assessor/designer is required to undertake the level of investigation and reporting appropriate to the Sensitivity Rating applied to the lot, as prescribed in Appendix C: Land Capability Assessment Checklists. The following sections provide general advice on design, installation and maintenance of DWM systems, that applies to all unsewered properties in the Shire.

### 6.4 DWM System Design

#### 6.4.1 Treatment Systems

Where a new system or major upgrade works are proposed in COS, the system must comply with the current Standards and Code of Practice. Where an existing system is operating effectively but does not comply with the current EPA Code of Practice or Standards, the system will be monitored; however, unless a failure occurs or a contravene of the GED, the owner will not be required to upgrade or replace the system.

For the installation of new proprietary systems, the selected system must have a current certificate of conformity from a conformity assessment body, conforming to the relevant Australian Standard. The appropriate standards for the different types of treatment systems is as follows:

- Septic tanks (and vermiculture systems) – AS/NZS 1546.1:2008, on-site domestic wastewater treatment units, Part 1: Septic tanks.
- Waterless composting toilets – AS/NZS 1546.2:2008, on-site domestic wastewater treatment units, Part 2: Waterless composting toilets.
- Secondary treatment systems – AS/NZS 1546.3:2017, on-site domestic wastewater treatment units, Part 3: Secondary treatment systems.
- Sand filters – AS/NZS 1546.3:2017, on-site domestic wastewater treatment units, Part 3: Secondary treatment systems and s459 exemption applications for transitional arrangements.
- Domestic greywater system – AS/NZS 1546.3:2016, on-site domestic wastewater treatment units, Part 4: Domestic greywater treatment systems.

EPA holds a register of the DWM systems with valid Certificates of Conformance within Victoria ([www.epa.vic.gov.au/your-environment/water/onsite-wastewater](http://www.epa.vic.gov.au/your-environment/water/onsite-wastewater)). Transitional arrangements will also apply to previously issued certificates that have not expired by 1 July 2021. For innovative DWM systems, an exemption from these requirements may be granted to a permit applicant by EPA under section 459 of the Act, inclusive of sand filters as per transitional arrangements between Council and the EPA.

As part of a permit application to Council, the applicant will need to include a copy of the certificate of conformity.

Appendix C of the EPA Code of Practice 891.4 (2016) provides useful guidance on factors to consider when selecting an EPA-approved DWM system. Site constraints (including for effluent dispersal or reuse) are a major factor when deciding on a treatment system.

#### **6.4.2 Land Application Systems**

The key issues that influence the selection and design of land application systems (domestic or commercial) are:

- The level of treatment of the effluent (primary, secondary or advanced secondary);
- Soil characteristics (particularly texture, structure, depth, dispersibility and phosphorus adsorption capacity);
- Site characteristics (particularly slope, aspect and shading); and
- Proximity to sensitive receiving environments (such as surface waters and groundwater).

The degree of constraint for sustainable land application of effluent can be a major factor in selecting a treatment system. The design of the land application system must be carried out consistently with the two guidelines cited in 6.4.1 above, as well as the *Australian Standard 1547:2012*. Table 2 of the EPA Code of Practice (891.4) details the permissible DWM treatment and land application system options.

It is preferable to design the land application area based on both a water and nutrient balance (as described in the MAV Model LCA, 2014); however, the level of detail required depends on the risk category of the lot and any other factors as determined by Council and/or the LCA assessor. For Low and Moderate Risk properties, the standard Sizing Tables (Appendix B of the Technical Document) may be used to determine the minimum area for the chosen land application system, based on climate and soils.

There are various options to mitigate constrained sites. For example, it may be appropriate to import lighter-textured topsoil (to appropriate depths) to the land application area in order to increase the DLR/DIR and thereby reduce the minimum required area of the system.

The Sizing Tables for each system type were created using monthly average water balances, using methods described in MAV Model LCA, 2014. Further details are provided in Appendix B of the Technical Document.

### **6.5 Installation**

Often system failures will occur as a result of poor installation practices. The installation of DWM systems must be undertaken by a licensed plumber or system installer who is familiar with the requirements of Council, the Guidelines and Standards, and has experience in installing DWM systems. Issues such as poor drainage around tanks and uneven distribution of effluent throughout trenches or irrigation systems can all result in effluent ponding, runoff or impacts on human and environmental health which can easily be avoided.

### **6.6 Maintenance**

For a system to operate and perform as it was designed, the system must be installed in accordance with the manufacturer's requirements and regular maintenance must be undertaken in accordance with the maintenance procedures outlined in Section 8.2 of this Operational Plan. By undertaking these regular maintenance tasks a system can operate effectively without major problems; however, a lack of care for any one, or all, of these items can result in system failures.

Secondary treatment systems such as Aerated Wastewater Treatment Systems (AWTS) rely on primary treatment as well as the addition of oxygen for the aerobic breakdown of organic matter by aerobic microbes in a secondary stage which is generally followed by disinfection, usually by chlorine. If there has been poor primary treatment of effluent, it can be detrimental to the secondary treatment process and most commonly disinfection will not be effective. These systems require regular maintenance and monitoring by a qualified service agent in accordance with specific EPA Certificates of Approval.

## 7 Compliance Monitoring

### 7.1 Record Keeping

Electronic database records of applications and permits for DWM systems in the Shire date back to 2002 and hardcopies to the 1970s. The current record system for DWM system applications and permits is as follows:

- Application and permits are electronically registered in the Health Manager database. Details of the type of system, the permit conditions, the issue dates and the inspection results are kept on the database. This register dates back to 2002. The electronic database is linked to Council's main lot database which allows for the effective integration and recovery of information.
- Hard copy records of plans, permits and inspections notes are kept on the relevant lot files. It is thought that information should be available for most of the DWM systems that have been installed since 1970 (and all since 2002).
- Hard copies of active files are kept by the Health Protection Unit.

### 7.2 Electronic Records of Inspections

The use of a paper based records system for field work can be time consuming and requires extra staff to enter the details into the database upon return to the office. It is recommended that the proposed monitoring program and the existing records database are supported by a portable, hand-held device (e.g. tablet or small laptop) loaded with software that includes the system inspection pro-forma (i.e. the inquiry fields to be completed by the Council Officer). The device would also record the GPS coordinates of the system components (tank and application area/s).

In addition, it is recommended that COS investigates the feasibility of an online system linked to the central database whereby service agents and plumbers can log in to record an AWTS service or system maintenance report. This would enable Council staff to cut down on some of the administration duties and increase productivity elsewhere.

However, if resources are limited, the above options should be delayed in order to ensure that adequate staff time is allocated to complete the system inspections, record data and implement the follow-up actions as required by the compliance monitoring.

In the absence of electronic inspection software, hard-copy inspection checklists have been developed based on existing templates in use by COS and current best practice.

### 7.3 Fees or Charges for DWM System Owners

Many rural and regional Council's with a high proportion of DWM systems have introduced an annual fee or charge for owners of unsewered properties, to help resource inspection programs as well as education programs. Adequate resourcing is a prerequisite to implementing the DWMP and monitoring its effectiveness.

### 7.4 Inspections

#### 7.4.1 Overview

The effective management of DWM systems requires a robust and well-resourced inspection and compliance program for existing and future systems. The below factors trigger inspections of any DWM system, including:

- A complaint made by a member of the public in relation to a system;
- The owners of a system lodge a planning permit to alter the associated dwelling or commercial premises;
- Council reasonably suspects there is a nuisance caused by a system; or

- Where it is a condition of approval that the system be maintained to a certain standard (systems approved since 1996).

It is important that all DWM systems are inspected as part of the compliance monitoring program; however, the short-term focus (refer to Action No. 6 of the Action Plan in Section 13) is on those properties where the environmental and human health impact is likely to be the greatest, and the required permit inspections associated with planning approvals. It must be recognised that many DWM systems are 10-30 years old on lots that are largely unsuitable for DWM. These systems are a historical legacy of Council and whilst it is now clear that such systems are not appropriate or may be creating unacceptable risks, there does need to be an acknowledgement that many of these problems will take time to rectify.

#### 7.4.2 Legislation

There are two pieces of legislation applicable to management of domestic onsite wastewater management, the *Public Health and Wellbeing Act 2008* and amended *Environment Protection Act 2017*, which deals with new septic systems, historic systems with permits and the setting of current standards for onsite waste management, and the legacy older systems that were not required to obtain a permit and pose, or may pose, a risk to human health or the environment, or are not, or may not be, in good working order.

Each piece of legislation has different, but compatible objectives, and requirements for the exercising of powers by authorised officers and mechanisms that may apply to improvement of septic systems.

#### 7.4.3 Inspection Program

Council has carried out inspections of all (except for the historical records entered into the database, e.g. pump-out receipt records) existing DWM systems with permits within the Shire to date; at least once for each system. However, records are not available for every inspection carried out (particularly older systems). All system inspection records are to be incorporated into the Health Manager database.

The inspection program involves:

1. Permit approval inspections;
2. Unpermitted system detection and capture;
3. Ad-hoc inspection by request or nuisance complaint; and
4. Compliance inspection, including mandatory audits of systems located within DWSCs.

##### **Permit approval process:**

Following the review of the proposed system, if it is deemed suitable for the site, Council will issue a 'Permit to Install' and stipulate any conditions. Council inspects a DWM system prior to approving it for use and issues a 'Permit to Use'.

##### **Unpermitted system detection and capture:**

Identification of improved properties without a record of permit will be undertaken using indicative data. An approach based on a case-by-case basis will be used to ensure these unpermitted systems comply with current legislation.

##### **Ah-hoc inspection by request or complaint:**

Inspections can be made in response to nuisance complaints from system owners or the general public or in response to other actions as Council deems appropriate, on a case-by-case basis.

##### **Audit Program and Compliance Inspection:**

Council's audit and compliance program will continue. The DWM Sensitivity Ratings, as determined in Section 4, are used to inform compliance and auditing scheduling. Council will use this priority to inform the order of the audits and inspections in addition to relevant information gained as part of its audit program. The Very High and High Sensitivity Rating lots with a



where there has been identified non-compliance, should be assessed first as a priority before other lots. Table 8 in Section 4.4 details the prioritisation for the targeted localities with regards to their DWM sensitivity.

Various factors need to be taken into consideration with regards to audit and compliance inspections of individual DWM systems to prioritise staff resourcing, projects and townships; including:

- Lots that have a higher Sensitivity Analysis Risk Rating;
- Lots located within the DWSCs;
- Lots or properties that have been identified as non-compliant.
- Lots with septic tanks and trenches (primary treatment) should be inspected as a priority within each lot Sensitivity Analysis Risk Rating;
- Properties older than 30 years (pre 1985) should be inspected prior to newer systems within each lot Sensitivity Analysis Risk Rating;
- All properties with a Section 173 Agreement under the *Planning and Environment Act 1987* relating to DWM will be inspected as a priority;
- Additional inspections can be made in response to nuisance complaints from system owners or the general public or in response to other actions as Council deems appropriate.

A DWM audit and compliance inspection program has been developed for all lots located within the DWSCs as detailed in Action 6d of the Action Plan (Section 13). COS have developed a 'standard operating procedure' as part of Action Plan Item 1 that will outline the approach and procedures for the DWM system audits. COS are to allocate 40 officer days per year to undertake the DWM system audits for lots located within the DWSCs.

#### **7.4.4 Inspection Protocol**

Appendix D provides an example system inspection pro-forma covering virtually all possible attributes that may be used to record details and observations in the field, for entering into Council's Health Manager database.

In summary, the inspection should record key DWM system information, including (but not limited to):

- exact location and GPS coordinates of system components
- type of treatment and land application systems
- performance and compliance of systems (e.g. if there are any maintenance issues which need to be addressed, and their urgency)

The results of inspections are highly valuable for improving and refining the risk assessment tools and for providing a rationale for the rectification or replacement of poorly functioning DWM systems.

Section 8 outlines the various methods for rectification or upgrade works which may be required following an inspection of a system.

## 8 Onsite System Maintenance and Upgrade Options

This section aims to provide information and direction on the range of options available for improving and rectifying failing or poorly operating DWM systems. It is provided for informative purposes only and does not represent a rigid or exhaustive list of troubleshooting options.

### 8.1 Non-compliant Systems

The potential management strategies for failing systems include the repair, improvement or replacement of systems (or components). The high priority localities (detailed in Table 8, Section 4.4) will form the focus of improvement works in terms of the implementation of this DWMP. Every effort will be made to ensure owners and occupiers of the land are aware of their responsibilities and are willing to commit resources to such projects.

However, it is recognised that many existing DWM systems are several decades old and/or are located on lots that may be unsuitable for DWM. Existing systems may be undersized or have direct greywater discharge off-lot, in most cases approved by Council at the time they were installed. While it is now clear that such practices are no longer appropriate and may be creating unacceptable risks, it is acknowledged that many of these problems will take time to rectify.

#### 8.1.1 Addressing Compliance

Stage 4 of the Risk Assessment Framework (see Figure 2b) outlines the procedure for managing existing DWM systems in the Shire through regular inspection, monitoring and improvement (upgrade or rectification). Actions 9a-d of the Action Plan (Section 13) outline Council's objectives, intentions and resource commitments in this regard.

It is not intended that the inspection and compliance monitoring take a 'hard-line' approach and require all under-performing systems to be upgraded immediately. However, a commitment is required from owners, Council, and State and regional management entities to improve DWM practices in a progressive and incremental manner, with a focus on high-priority localities and/or systems. Sections 8.3 to 8.5 (following) outline the range of options available to COS to improve DWM performance in the Shire.

Implementation of the DWMP will be reviewed internally by Council every 3 years.

### 8.2 Maintenance of Existing Systems

The following maintenance actions should be undertaken by the owner or occupier of the land, or a qualified service agent in order to minimise the risk of system failure (compliant and under-performing systems alike):

- Regular desludging of septic or primary tank as required by EPA Certificates of Conformance for each type of system. The 2007 Plan noted that failure to regularly desludge septic tanks caused the majority of preventable problems with onsite systems, as evidenced by plumbers servicing unsewered areas. A pump-out should significantly improve performance; however, this will not rectify existing damage to the dispersal areas resulting from excess suspended solids;
- Checking of all system chambers and other checks as required by system manufacturers for secondary systems;
- Addition of chlorine for disinfection where an AWTS with chlorination is used;
- Ensuring householders do not discharge chemicals used within the house to the system i.e. bleaches, antibacterial cleaning products, paints, dyes etc.;
- Ensuring that the system is not turned off at any time;
- Responding to system alarms as this usually indicates a system failure or problem;
- If the secondary treatment system (of any type) is more than five years old, then effluent samples should be collected for analysis of BOD<sub>5</sub>, TSS and faecal coliforms/*E. coli* to

assess whether the system is still functioning to its specification and achieving the target effluent quality as prescribed by EPA Victoria; and

- Ensuring sprinklers or irrigation area is maintained, i.e. lawn mowing, checking that sprinklers/distribution lines are not damaged and that flushing of lines is undertaken periodically.

By undertaking these regular maintenance tasks, a compliant system can be expected to operate effectively without major problems. Maintenance measures can also benefit under-performing systems by mitigating the risks posed by the system failure (e.g. if an irrigation area is surcharging effluent, it is preferable that the effluent is disinfected).

System modification and upgrade options for failing or undersized systems are discussed below.

### **8.3 Modifications for Existing Systems**

In some cases, it is not necessary to replace all of the system components. Risks from defective DWM systems can be appropriately managed by modifying a system. The required modifications should be determined on a case-by-case basis, and discussed with Council prior to implementation. If existing septic tanks are to be modified or repaired, they must be structurally sound and adequately sized for the number of bedrooms in the dwelling. Otherwise, they should be replaced with an adequately sized septic tank.

Typical modifications are discussed below.

#### **8.3.1 Install Service Riser for Septic Tank Access**

Inaccessible tanks (those that have been buried or built over) are highly unlikely to be inspected or pumped out as regularly as is required for optimum system performance (3-5 years for pump outs as recommended by *AS/NZS 1547:2012*). Tanks are often installed completely below ground to achieve minimum fall for gravity drainage from the dwelling; however, buried septic tanks often result in owners not knowing where the septic tank is (especially after properties change ownership). Non-accessible tanks were common in the audits of existing systems in the Shire undertaken by the consultants and were deemed to be in an unsatisfactory condition as a result, due to the very high likelihood that the tank had not been adequately serviced or desludged.

Service risers are typically made from concrete or high density plastic and must be installed by a suitably experienced professional (such as a plumber). Care should be taken to ensure that tank and riser lids, and any other potential inlet points, are protected from groundwater and surface water ingress.

#### **8.3.2 Minor Repairs**

The structural integrity and design of the septic tank also determine its suitability for continued use. Generally, the older a septic tank, the more likely it is to have cracks, missing components (e.g. outlet 'T junctions'), poorly sealed access openings, corrosion, or other physical problems. It is possible to mitigate or repair these issues, and the estimates have assumed a nominal cost of \$500 per identified tank to carry out minor repairs. Repairing cracks will need to be done when the tank is empty (after it has been pumped out), with care taken to ensure that all cracks are identified and repaired.

AWTS and sand filter components can often require repair or replacement following flooding, electrical faults or pump failure. Pumps can be removed and replaced when necessary and internal pipes can be replaced where necessary if they have been dislodged or damaged. A suitably qualified service agent or the system manufacturer should undertake these repairs.

#### **8.3.3 Install Outlet Filters in Septic Tanks**

The simplest way to improve the performance of a standard septic tank is to retrofit the outlet pipe with an outlet filter. Filters of various designs are commercially available and can provide significant solids retention. Filters have a large surface area to limit clogging and reduce maintenance requirements. Filters can reduce the impacts of solids carry over to the land application area or secondary treatment system. Filters should be removed and cleaned (hosed

onto grass or gardens with limited human and animal contact) and replaced in the septic tank at least twice per year.

## 8.4 Upgrade/Replacement of Existing Systems

Where a new system, or major upgrade works, are required (i.e. substantial repair, expansion or replacement of either the treatment system and/or land application system), the system must comply with the current Standards and EPA Code of Practice.

Where an existing system is shown to be operating effectively but does not comply with the current EPA Code of Practice or Standards, then the system should be monitored. However, unless a failure occurs (contravening the GED), effluent is discharging off-site (particularly within a DWSC), or a house extension/modification is proposed, the owner should not be required to upgrade or replace the system as long as it is performing as per the original permit conditions (this situation is common for older homes where trenches may be undersized for the number of bedrooms, but only one or two people are living in the dwelling).

Replacement of systems and system components should be carried out according to the site-specific conditions and requirements of the lot, and by an appropriately qualified and experienced person. Common upgrade and replacement options for DWM systems are discussed below.

### 8.4.1 Enforcement of Upgrade Works

Under the amended *Environment Protection Act 2017*, local government is the primary agency responsible for the management of DWM systems. Under this Act, a property owner or occupier of the land cannot construct, alter or install a DWM system without a local government permit. Local Government use permits to regulate the installation, maintenance and monitoring of DWM systems within their LGA. Council is also responsible for identifying failing DWM systems that are causing environmental, public health and amenity risks.

The new EP legislation introduces the general environmental duty (GED), which is a criminally enforceable preventative duty. A delegation of functions and powers from EPA to Council under the new Act will allow for Council to take action under the GED. Under the *Environment Protection Act 2017*, Councils have the power to enforce compliance with Council permits, Certificate of Conformance conditions and issue penalty infringement notices to premises where owners do not have their system regularly maintained by a professional service technician.

Part 5.7 of the *Regulations 2021*, states that for persons in management or control of land which a DWM system is located, including legacy systems that do not have a permit and were installed pre-1970 superseded Act; have an obligation to take reasonable steps to maintain the DWM system in good working order, a duty to keep maintenance records, respond to any problems that arise, and notify Council of a failure and rectification steps. Council can issue infringement notices (fine) under Regulation 171, and can issue improvement notices (Section 271 of the Act) and prohibition notices (Section 272 of the Act), if they have reasonable belief that any of the grounds listed in those sections of the Act are satisfied. COS will endeavour to liaise with an occupier to ensure upgrade works are undertaken; however, in some circumstances enforcement will be required to ensure compliance with the amended *Environment Protection Act 2017*. Where a Council authorised officer has detected alleged non-compliance with an improvement notice or prohibition notice that they have issued, they may refer the alleged offence(s) to EPA for consideration of further enforcement action.

### 8.4.2 Replacement of Septic Tanks

It is envisaged that where simple repairs and pump-outs fail to meet compliance standards, existing septic tanks will require complete replacement, due to being undersized, structurally unsound and/or discharging effluent inappropriately.

Where appropriate, septic tanks can be replaced with another septic tank, in accordance with a LCA report and design for the lot's specific circumstances. However, for permanently-occupied premises, it is likely that an upgrade to a secondary treatment system will be the preferred

outcome (in accordance with a site-specific LCA and design report by an appropriately qualified professional).

All proprietary treatment systems must have current accreditation from the EPA, which is called a Certificate of Conformance.

Secondary treatment systems allow greater flexibility for land application options for the treated effluent. The existing trenches can be used to receive the secondary effluent from a new treatment system, with or without trench rejuvenation (discussed below) as required. Alternatively, the existing trenches can be decommissioned (and rehabilitated with clean soil where required) and replaced with a different land application system (including irrigation systems).

Where existing septic tanks are performing adequately (or have this capability), they can be retained and used as part of the secondary treatment system. The suitability of the existing tank for this purpose needs to be thoroughly assessed by a suitably qualified wastewater professional. In most cases, it will be more straightforward to decommission the septic tank and replace it with a new treatment system. Disposal options for decommissioned septic tanks include collapse and in-fill, removal to off-site landfill, or appropriate sterilisation for non-potable water storage; in accordance with the current EPA Code of Practice.

### **8.4.3 Upgrades, Extensions and Replacements for Trenches**

Trenches and beds have relatively small footprint areas and rely substantially on effluent absorption, thus imposing high loading rates on the soil. This increases the risk of systems being overloaded and failing hydraulically in the long term, with potential adverse health and environmental impacts. Furthermore, prolonged effluent application through absorption systems increases the risk of soil degradation by increasing salinity and sodicity, as well as the development of a 'clogging layer.' Over time, the organic load in effluent forms a clogging layer in the soil around the trench, which reduces the porosity of the soil and limits soil absorption of effluent. Higher suspended solids concentration in the primary-treated effluent increases the rate of development of the clogging layer. The suspended solids concentration of septic tank effluent generally increases as the pump out rate decreases (particularly if there is no outlet filter installed).

A range of options for upgrading or replacing trenches and beds is provided below. Site constraints, particularly available suitable space, will determine what options are feasible, and will be determined on a case by case basis as part of the recommended servicing strategy. Properties with inadequate suitable space to replicate or extend their trenches will be most suited to trench rejuvenation, and potentially replacement of the septic tank with a secondary treatment system.

#### **Trench Rejuvenation**

Provided the trenches are structurally sound and the clogging layer is not excessively developed, it is possible to 'rejuvenate' existing trenches by oxidising the clogging layer, either using an oxidising chemical, physical aeration (compressed air blowers) or both. This technique in combination with septic tank pump-out (if required) and installation of an outlet filter has good potential to improve overall system performance, and is relatively low-cost. This solution will only be appropriate as a long-term solution on lots with adequate available space for effluent dispersal and if the existing trench system is appropriately sized for the number of occupants or number of bedrooms. However, it could be a valuable interim solution for lots without adequate available space, prior to implementation of a compliant solution.

#### **Replace, Replicate or Expand Trenches**

Where rejuvenation is not an option (e.g. if trenches are physically damaged or collapsed), there is scope for trenches to be excavated and replaced in-situ, using imported materials including topsoil (preferably loam or sandy loam) and improving the existing subsoils (see below). This is the most feasible option for small lots, or where other areas have been used for other improvements.

If there is adequate available space elsewhere on the lot that has not been used for trenches previously, it is likely to be more straightforward and cost-effective to replicate the trenches in this area. This is more likely to be achievable on larger lots.

If the existing trenches are undersized, and there is adequate suitable space adjacent to the terminal ends of the trenches, then the trenches can be extended to the minimum required size (as described in the Sizing Tables). The existing section of trench can also be rejuvenated to improve performance, or replaced if required.

### **Soil Amelioration**

In practice, the most limiting layer to water movement is usually the heavier textured, clayey subsoil in the profile. Quite often, the soil chemistry of this layer is dominated by adsorbed sodium ions and/or magnesium ions, causing the clay particles to be easily dispersed and mobilised when in contact with water. When used for effluent dispersal these clay particles move down with the percolating water and clog up the fine pores, thus reducing the soil's permeability.

Subsoil clay that is dispersive must be treated with gypsum (calcium sulphate) to counteract the excessive sodium and magnesium and bring about a strong flocculated condition of the clay particles.

Shallow topsoil or topsoil that is too sandy may also limit the growth of the vegetation in the land application area. For optimal growth of typical vegetation used with DWM systems, the topsoil should be at least 250mm deep and have at least 5% organic matter.

### **Alternative Trench Designs**

Over the years there have been various modifications to conventional absorption trenches and beds, some of which have been developed into proprietary 'off-the-shelf' products including various brands of self-supporting arch drains and the *Advanced Enviro-Septic™* modular trench.

Other modified designs are based on existing technologies which, although not all are formally approved, have been shown to enhance performance. One recent example of this is the 'Wick' trench, developed for use in clay soils as an alternative to standard absorption trenches (referred to in the current EPA Code of Practice as a 'Wick trench or bed'). This system can be described as a conventional absorption trench adjacent to a shallower evapotranspiration/absorption bed, with a continuous layer of geotextile fabric laid under the trench and up into the evapotranspiration bed. The geotextile acts as a wick, using capillary movement, to distribute some of the effluent over the transpiration bed adjacent to the trench. This provides a larger surface area than would be available using the trench alone, with a greater potential for evapotranspiration and greater infiltration capacity. Typically, the evapotranspiration/absorption bed is approximately twice the width of the trench. This option requires a larger area than conventional trenches, but smaller than that required for irrigation.

## **8.5 Decentralised or Clustered Wastewater Management**

Where local conditions (including dwelling density and layout) allow, it may be feasible for small groups of properties to enter into a decentralised servicing arrangement whereby raw wastewater or primary-treated effluent is collected from each lot in a common pipe, for off-site treatment and discharge, or treatment and discharge on one or more of the serviced lots. Systems include pressure sewer, vacuum sewer and Common Effluent Discharge (CED) systems.

This option is unlikely to be further explored by landowners due to the complexity involved. This option would best be classified as a commercial wastewater system and would require investigations and approvals by a range of stakeholders (including, but not limited to, Council and the relevant Water Corporations). Off-site treatment and/or disposal is likely to trigger the regulatory involvement of the EPA. EPA Works Approval and licencing is discussed below. Options for connection to reticulated sewerage or a decentralised cluster system are typically more expensive when compared to onsite alternatives.

## 9 Commercial Wastewater Management Systems

### 9.1 Overview

Wastewater Treatment Systems with a design capacity between 5,000 - 100,000L/day require Works Approval from the EPA. From 1 July 2021, the EPA works approval will be replaced by a development licence and operating licence (unless an exemption applies). Systems in this range which discharge solely to land in accordance with specification acceptable to EPA are exempt from ongoing licensing. Acceptable practices are defined in guidance material, the EPA Vic Guidelines for Wastewater Re-Use, Publication 464.

The *Environment Protection (Regulations 2021)* define which activities require EPA Works Approval and licensing under the *Environment Protection Act 2017*. A Works Approval is statutory document which allows scheduled works to be constructed, subject to whatever conditions the EPA deems appropriate as part of the assessment process. As part of the approval process, the EPA assesses any potential environmental impacts from the proposal, ways to mitigate any impacts, compliance with policy requirements (including protection of beneficial uses), and comments from referral agencies and the general public.

Systems with a design capacity greater than 100,000 L/day are subject to works approval as above and also to ongoing licensing from the EPA. The EPA licences set acceptable waste discharge and management criteria. They are publicly available documents that can be viewed at <http://www.epa.vic.gov.au/our-work/licences-and-approvals/search-licence>. In some cases, the EPA may approve an exemption from the need to obtain Works Approval for current licence holders who are upgrading an existing system. The EPA periodically inspects all licenced sites, with the frequency informed by a range of factors related to the degree of environmental risk posed by the site. Targeted inspections can also be made based on intelligence and pollution report information. Licenced sites are required to submit an Annual Performance Statement detailing their performance against the licence conditions. These are also public documents that can be searched on the above link. The EPA conducts a combination of targeted and random assessments of Annual Performance Statements. As of May 2015, the EPA notified Council that there are 3 licenced wastewater discharge sites in COS.

There are other types of industrial activity (not wastewater treatment) that are not directly regulated under the *Environment Protection Regulations 2021* that still have potential to impact on water quality. Examples include dairy farm effluent management and stormwater from commercial and light industrial operations, particularly in unsewered areas. The EPA has a role in pollution prevention and response in these activities. The EPA's approach to these issues is outlined in the Compliance and Enforcement Policy, Publication 1388. The Compliance and Enforcement Policy articulates the EPA's approach, method and priorities for ensuring compliance with Council's Acts and carrying out Council's compliance and enforcement powers.

Council is responsible for the management of all wastewater systems <5,000L/day, which includes some commercial systems. It is important to note that commercial enterprises, such as small factories and cafes operating in unsewered areas, often generate less than 2,000L of wastewater per day and therefore are regarded from an operational perspective as domestic systems. The characteristics of the wastewater will differ from a typical residential dwelling, but the wastewater is expected to contain the same broad ranges of contaminants (unless the commercial enterprise is producing high strength or unusual wastes, such as small-scale food, alcohol or chemical processing, in which case it should be regarded as a commercial development). Commercial enterprises generating up to 5,000L/day in Colac Otway Shire include (but are not limited to) restaurants, pubs, tourist accommodation, adventure parks, dairies, breweries and food processing facilities.

There is limited available information on the performance of commercial systems in the Shire. COS have identified importance of gathering all of the commercial system data for the Shire which is noted as Action No. 5 in the Action Plan. Commercial systems within COS will be managed as per the same criteria as domestic systems, with some consideration for the specific waste stream.

Generally speaking, commercial treatment plants are often the same age as the development they service, and are upgraded or replaced only when a noticeable problem is observed, and/or the development is modified to alter (usually increase) design flows (e.g. expanding operations).

Without proactive enforcement from the regulator, system maintenance, monitoring and record-keeping can become lax over time, with system performance suffering as a result. Generally speaking, older commercial systems are often non-compliant with current expectations and standards (e.g. are licenced to discharge treated effluent to surface watercourses or within watercourse buffers). However, they continue operating until improvements are triggered, typically by the identification of problems, the redevelopment of the premises, or proactive intervention by regulators, local government or other agencies.

Whilst COS do not have ultimate regulatory responsibility for all commercial systems in the Shire, the DWMP identifies the importance of actively managing commercial system data for the Shire. Objectives to achieve better management of larger DWM systems in the Action Plan (Section 13) include:

- ✓ Action 5a – scheduled audits of all commercial systems (2,000 - ≤5,000L/day); and
- ✓ Action 5b – regularly updating details of EPA licenses for all commercial systems (>5,000L/day) in the Shire, including provision of O&M plans where applicable.

COS will work closely with EPA to ensure the database remains current.

## 9.2 Risks Associated with Commercial Systems

The most common causes of failure or underperformance of commercial wastewater treatment systems include the following:

- Surge loads, e.g. peak holiday seasons or production cycles in factories;
- Irregular and/or ineffective maintenance and upgrades;
- Inadequate desludging; and
- AWTs and other aerobic systems being switched off for long periods of time, leading to die-off of aerobic microorganisms and delayed start-up and poor performance when switched back on.

The most common causes of failure or underperformance of commercial effluent dispersal or reuse systems include the following:

- Inappropriate design, including undersized land application area for peak loads (without appropriate load buffering);
- Inadequate setback buffers from sensitive receptors, such as watercourses, which no longer meet the minimum buffers in the current EPA Victoria Code of Practice;
- Poor or inappropriate installation;
- Inadequate maintenance, including regular back-flushing of irrigation systems with clean water to prevent solids build-up and delays to repairs (e.g. broken sections of pipe); and
- ‘Creeping failure’ of trench and bed systems as soils and media become blocked with suspended solids from poorly designed and/or poorly maintained treatment systems.



## **9.3 Management Strategies for Commercial Systems**

### **9.3.1 Wastewater Treatment Systems**

All commercial wastewater treatment systems should have an up-to-date Operation and Maintenance (O&M) Plan or Manual which includes a diagram of the system and provides instructions for all maintenance schedules required for the system, and details of who is responsible for the management and maintenance of the system.

Regular maintenance by appropriately trained staff and/or contractors is essential. Depending on the scale and complexity of the treatment system, and the nature of the wastewater to be treated, daily low-level maintenance may be required. This can often be carried out by regular, appropriately trained, staff (e.g. checking effluent levels, visually checking and/or testing samples of effluent for treatment performance, etc.). More specialised maintenance must be carried out by appropriately qualified and experienced personnel.

Routine inspections of the wastewater treatment and land application systems at EPA-licensed commercial properties should be carried out by an appropriately qualified and experienced contractor. The contractor should be independent, i.e. not an employee or regular contractor of the owner of the premises. More recent EPA licences typically include a schedule of inspections.

Council is responsible for monitoring commercial systems <5,000L/day. These systems should be included in the Council inspection program and, where problems or complaints are received, Council should assess and manage the system in a similar fashion to a domestic system and also inform the EPA of the investigation. The EPA is responsible for carrying out additional investigations at its own discretion, including in response to complaints about a system from Council or members of the public.

Council is required to maintain a database of all commercial systems within COS; this data base will also include a list of EPA Works Approved sites as well as EPA licensed premises. This database will be maintained and updated annually and include any maintenance records of the premises (commercial 2,000-5,000L/day) under Council control. This is included in the Action Plan (Action No. 5b).

### **9.3.2 Effluent Management Systems**

The issues surrounding selection, design, installation and maintenance of commercial-scale effluent management systems are largely the same as for domestic systems. However, potential problems associated with scale and flow-balancing are introduced with large and/or irregular effluent flows. For seasonal developments, part of the effluent land application area may need to be switched off, or alternatively the off-season (reduced) effluent load can be distributed throughout the entire area over longer time periods using a flow sequencing control system.

All effluent management areas require regular maintenance and should be closely monitored to ensure effective operation and even distribution of effluent. An Operation and Maintenance Manual or Plan should be developed (if not in existence) and regularly referred to by staff and contractors. Land application areas that are turfed will require regular mowing (and lawn clippings removed from the area). Other vegetation types should be pruned and maintained as necessary to ensure nutrients are being removed by plant uptake.

Commercial systems less than 5,000L/day should be serviced and maintained in accordance with the system manufacturer's requirements. Secondary treatment systems will require servicing quarterly; however, some commercial systems will require daily monitoring by an onsite system operator. Results of system servicing should be submitted to Council on a quarterly basis or in accordance with the system conditions of approval to operate. Where system maintenance records are not supplied to Council as required, follow up action should be taken by Council to ensure the system is serviced appropriately. Commercial systems which are licensed by the EPA will require effluent quality monitoring (at the outlet point of the treatment system) to ensure the effluent quality meets the requirements for its end use. For example, surface irrigation requires disinfection (indicated by concentrations of pathogen indicator organisms, as well as residual chlorine levels, if chlorine is the method of disinfection used).

## 10 Educational Programs

COS currently uses DWM systems inspections as an opportunity to educate system owners 'one-on-one' in order to improve system maintenance and performance. In addition, the COS website has an extensive section dedicated to DWM in the Shire, which explains how owners and residents of unsewered properties can best manage their systems in order to protect human and environmental health. This online content is supported by printed publications which are available at Council offices and are given to owners and residents during system inspections where appropriate. There is scope for printed and online information to be updated to reflect the revised DWMP and Victorian government documents (including the current EPA Code of Practice) and to provide more useful guidance and information for home owners and residents. The education program is outlined in the Action Plan in Section 13 (Action Numbers 8 & 9).

## 11 Downstream Water Quality Monitoring

COS has historically undertaken regular sampling of waterways to monitor the level of *E. coli* contamination of recreational waterways. CCMA sponsored WaterWatch community groups undertake water quality testing (excluding bacterial) at a variety of locations (e.g. electrical conductivity (EC), sodium concentration, pH and nutrients). High pH, EC and sodium together can indicate the presence of greywater contamination as laundry products are typically alkaline and have a high salt content (as a filler in powder detergents). However, *E. coli* is not human-specific and high concentrations can be caused by other animals (including livestock) and birds (including wetland birds), and the forestry industry can impact on downstream water quality.

The EPA is responsible for environmental monitoring and the Catchment Management Authorities also undertake water quality monitor programs.

COS should review existing water quality data collected by other authorities in the Shire (including Water Corporations), where this data is relevant and available. A detailed water quality monitoring program is beyond the scope of this DWMP and could form part of a broader water quality monitoring program that considers a range of regional stakeholders and objectives.

It is recommended that human-specific contamination indicators should be targeted for downstream water quality testing, to rule out non-human sources of generic contaminants (pathogens, nutrients and chemical compounds). Commonly used indicators include:

- Optical brighteners used in laundry detergents (especially soaking detergents); and
- Faecal sterol compounds.

While it is desirable that a monitoring program is undertaken to at least establish a baseline for future analysis, improving septic system performance will positively impact water quality and reduce the impact of human specific contamination.

Targeted sampling is more costly and can be carried out periodically (e.g. every two years).

## 12 Risk Mitigation in DWM Design and Installation

The DWM risks identified across unsewered areas in the DWMP are based on the predominance of standard (primary) septic tanks with conventional absorption trenches throughout the Shire (as confirmed by Council records and supported by field investigations). The summary table below outlines some possible ways these risks can be mitigated.

**Table 8: Risk Mitigation for Various Constraints**

Risk Category	Issue	Possible solutions	Methods	Benefits
Soils	Poor soils make it difficult for the site to contain effluent.	Enhanced treatment of effluent.	Septic System and Sand Filter.	Passive system; only uses electricity for pumps. Sand life should exceed 10 years before replacement.
			AWTS 20/30.	Higher standard of treatment suitable for sub- surface effluent dispersal in poorer soils.
			AWTS 20/30/10.	Disinfection stage decreases public health risk. Higher standard of treatment suitable for sub-surface effluent dispersal in poorer soils.
		Remediate soils.	Addition of gypsum/lime as per LCA recommendation.	Can assist in improving effluent adsorption capabilities of dispersive soil.
		Import better quality soils.	Sandy loams, loams and clay loams with <10% gravel content.	Soils can be selected for suitable characteristics (e.g. permeability) and also increase profile depth.
Slope	Steep slopes can be destabilised by effluent, and it is difficult to contain effluent onsite.	Terracing.	Reduce slopes by creating flatter areas (ensure soil depth is adequate if using cut and fill).	Ease of access and maintenance (e.g. mowing) and other controls (e.g. erosion).
Lot size	The smaller the lot the less area is available for	Reduce house size (number of bedrooms).	To be done at the planning and design stage.	If a house is smaller with fewer occupants, it will generate less wastewater.

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

<b>Risk Category</b>	<b>Issue</b>	<b>Possible solutions</b>	<b>Methods</b>	<b>Benefits</b>
	effluent management.	Reduce footprint of house and other improvements.	To be done at the planning and design stage.	To ensure there is enough area to use for effluent dispersal, reduce the space occupied by the house, shed, driveway etc.
		Consider mound system as land application option.		Permits highest effluent loading rate per square metre.
<b>Water-courses/ Groundwater Bores</b>	The Code has setback distances from watercourses and groundwater bores.	Ensure entire system (including house) is located outside of setbacks and consider treatment options.	Increase wastewater treatment standard.	Setbacks can be reduced when higher treatment standards (e.g. advanced secondary with disinfection) are used.
<b>Flood Prone Land</b>	Wastewater should not be disposed of in flood prone land.	Ensure entire system (including house) is located away from flood prone land.		Waters are protected from contamination. System is protected from inundation of water which eliminates the potential need for costly system replacement.

### 13 Action Plan Timeline

This Action Plan Timeline outlines the management strategies and actions to address priorities. The Health Protection Unit will have the primary responsibility for the coordination and implementation of the recommendations. Council’s Planning, Environment, Infrastructure, Building and GIS staff will assist them. This Action Plan was updated in 2021 to reflect the changes in requirements associated with the amended *Environment Protection Act 2017*.

Item Number	Action	Description	Term	Due Date	Responsibility	Resource Funding
1	<b>Preparation of policies and procedures</b>	Prepare (or revise/finalise) and document the following to ensure they are in line with this DWMP: <ul style="list-style-type: none"> <li>• DWM system inspection procedure and program.</li> <li>• Non-compliance with inspection procedure.</li> <li>• Complaint inspection procedure.</li> <li>• Rectification/upgrade works procedure.</li> <li>• Issuing of fines/notice procedure.</li> <li>• ‘Permit to Install’ procedure.</li> <li>• Approval to Use procedure.</li> <li>• Compliance and Enforcement Policy.</li> </ul>	Short	March 2022	Health Protection Coordinator	Within current resourcing
2	<b>Fees and Charges</b>	In order to fund the Actions in this Plan, Council will need to consider sustainable options for ensuring appropriate resources.	Short	March 2022	Planning, Building and Health Manager	Within current resourcing
3a	<b>Continuation of improvement of data collection</b>	Update a GIS layer for DWM systems in the Shire. Ensure cadastre (lot data) is routinely updated.	Medium	July 2023	GIS Officer	Within current resourcing
3b		Development of geo-referencing of “as constructed plans” and incorporated as a GIS layer.	Ongoing)	Ongoing	Health Protection Coordinator; IT/GIS (assistance)	Budget bid / within current resources

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Item Number	Action	Description	Term	Due Date	Responsibility	Resource Funding
4a	<b>Sensitivity Analysis Mapping</b>	Regularly update Sensitivity Rating spreadsheet with any additional comments on constraints following a system inspection or LCA report.	Ongoing	Ongoing	GIS Officer & HPO	Within current resources
4b		Update the Council planning map interface on the Council's website with the updated Sensitivity mapping reviewed in 2021. Printed maps to be updated at least annually.	Short	November 2021	GIS Officer, HPO	Within current resources
5	<b>Commercial Systems</b>	Identify all commercial premises and commence priority auditing of commercial systems (2,000 - ≤5,000L/day).	Short-ongoing	November 2022	HPO	Within current resources
6a	<b>Septic Tank (DWM system) Permit Conditions and Compliance</b>	Undertake compliance audits of new installations.	Ongoing	Ongoing	Health Protection Coordinator; HPO	Within current resources
6b		Enforce upgrades of poorly performing systems, as required (case-by-case).	Ongoing	Ongoing	Health Protection Coordinator; HPO	Within current resources
6c		Enforce mandatory maintenance of systems (depending on system type).	Ongoing	Ongoing	HPO	
6d		Undertake compliance audits of lots located within DWSCs with prioritisation based on the DWM risk rating.	Ongoing	Ongoing	Health Protection Coordinator; HPO	Within current resources with dedicated 40 EHO audit days/year
7a	<b>Locality Investigations and Planning</b>	Review Locality Reports in DWMP and system inspection data to inform planning decisions regarding unsewered towns.	Short	Completed in 2021 review	Planning, Building and Health Manager; Health Protection	Within current resources

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Item Number	Action	Description	Term	Due Date	Responsibility	Resource Funding
					Coordinator; HPO	
7b		Brief all Planning staff on the DWM by providing a summary document or meeting briefing.	Short	August 2022	Health Protection Coordinator; HPO	Within current resources
8	<b>System Owners Education Program</b>	Discuss individual systems with owners during the application process and in response to enquiries from owners. Develop mechanisms to prompt pro-active education upon purchase of lot.	Short and Ongoing	March 2023-ongoing	HPO; Health Protection Coordinator	Within current resources
9a	<b>Broader Community Education Program</b>	<ul style="list-style-type: none"> <li>Provide details about permit process on Council's website.</li> <li>Promote policies and educational materials to the community and service providers.</li> <li>Educate future/potential owners of homes with DWM systems.</li> </ul>	Short	June 2022	Health Protection Unit and Community Relations Officer	Within current resources
9b		<ul style="list-style-type: none"> <li>Revise existing educational material for distribution to residents and on website.</li> <li>Develop new educational material for distribution to residents and on website.</li> </ul>	Short	November 2022	Health Protection Unit and Community Relations Officer	Within current resources
10	<b>DWM Professionals Briefing</b>	Conduct a briefing session, potential training, and/or annual meetings with local DWM & LCA consultants, plumbers and system maintenance contractors to inform and educate on the new requirements of the DWMP and to discuss any recurring questions/issues.	Ongoing	Ongoing	Health Protection Coordinator; Professional Consultant	2 x sessions Whitehead & Associates; within current resources
11	<b>Resource Allocation</b>	Investigate budget requirements for the implementation of the DWMP including system monitoring, compliance and enforcement of DWMP (& this Action Plan). <ul style="list-style-type: none"> <li>Implementation phase.</li> </ul>	Immediate	March 2022	Planning, Building and Health Manager and Health	Within current resources

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Item Number	Action	Description	Term	Due Date	Responsibility	Resource Funding
		<ul style="list-style-type: none"> <li>Ongoing administration of DWMP.</li> </ul>			Protection Coordinator	
<b>12a</b>	<b>Reviews</b>	Biannual progress review of 2021 DWMP and meeting with the Water Corporations to ensure the effective management of planning referral process under the DWMP.	Ongoing	Biannual	Health Protection Coordinator and Stakeholders	Within current resources
<b>12b</b>		Major (three-yearly) external audit and	Long	2024	Health Protection Coordinator; Stakeholders and External Auditor	Within current resources
<b>12c</b>		Review of 2021 DWMP after five (5) years.	Long	2026		Within current resources



## 14 Glossary of Terms

Term	Definition
Aerobic treatment	Biological treatment processes that occur in the presence of oxygen (i.e. aerobic bacteria digest wastewater contaminants). Aerobic bacteria are organisms that require oxygen to survive and grow.
Anaerobic treatment	Biological treatment processes that occur in the absence of oxygen.
Blackwater	Wastewater grossly contaminated with faeces (i.e. from a toilet).
Desludging	Removal of the semi solid waste from a tank.
Effluent	Water discharged from a treatment plant.
Evapotranspiration	Transfer of water from the soil to the atmosphere through evaporation and plant transpiration. Calculated using the FAO Penman-Monteith method to derive (ET <sub>0</sub> ).
GED	General Environmental Duty associated with the amended <i>Environment Protection Act 2017</i>
Greywater	Wastewater from showers, baths, sinks, washing machines, dish washers.
Hardpan	A hardened, compacted and/or cemented horizon.
Locality	The broader locality surrounding a town (place name within mapped boundaries).
Non-Potable	Water not suitable for human consumption.
Organic Matter	Material that comes from the tissues of organisms (plants, animals, or microorganisms) that are currently or were once living.
Parcel	The smallest unit of land able to be transferred within Victoria's cadastral system, usually having one proprietor or owner (land.vic.gov.au).  For the purposes of this DWMP, parcel and lot are given to have the same meaning.
Peds	An aggregate of soil particles.
Permeability	The ability of the soil to allow water to pass through.
P-sorb	Phosphorus adsorption capacity of a soil.
Property	Land under common occupation (land.vic.gov.au). May include multiple parcels.
Sensitivity	The 'likely' consequence of off-site (DWM) impacts based on the cumulative effect of individual lot constraints (soil suitability, slope, useable lot area, climate and location) and variables affecting the

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Term	Definition
	specific land capability and associated limitations of the lot to sustainably manage wastewater in compliance with SEPP objectives.
Settlement	An area of residential development within the Rural Living Zone (Barongarook and Kawarren) or Rural Conservation Zone (Barham River).
Sewage	Solid and liquid wastewater conveyed through sewers.
Sewerage	A system of sewers.
Town	The town servicing a locality, which is predominantly, zoned Township Zone. It contains both residential and commercial development.

FOR ADOPTION

## 15 References (Cited and Used)

Department of Local Government NSW (1998) Environment and Health Protection Guidelines: On-site Sewage Management for Single Households.

Environment Protection Authority Victoria (1991) Guidelines for Wastewater Irrigation, Publication 168.

Environment Protection Authority Victoria (2002) Guidelines for Aerated On-site Wastewater Treatment Systems, Publication 760.

Environment Protection Authority Victoria (2003) State Environment Protection Policy - Waters of Victoria.

Environment Protection Authority Victoria (2003) Guidelines for Environmental Management: Use of Reclaimed Water, Publication 464.2.

Environment Protection Authority Victoria (2013) Code of Practice for Onsite Wastewater Management, Publication 891.3.

Hazelton, P. and Murphy, B. (2007) Interpreting soil test results – what do all the numbers mean? CSIRO Publishing.

Isbell, R.F. (1996) The Australian Soil Classification. CSIRO Publishing, Melbourne.

Natural Resource Management Ministerial Council et al. (2006) Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1).

Municipal Association of Victoria, Department of Environment and Sustainability and EPA Victoria (2014) Victorian Land Capability Assessment Framework.

SKM (2014) Wye River and Separation Creek: Quantitative Microbial Risk Assessment and Ecological Risk Assessment, VW07110.

Standards Australia/ Standards New Zealand (2012) AS/NZS 1547:2012 On-site domestic-wastewater management.

Standards Australia/ Standards New Zealand (2008) AS/NZS 1546.1:2008 On-site domestic-wastewater treatment units – Septic tanks.

USEPA (2002) Onsite Wastewater Treatment Systems Manual. United States Environmental Protection Agency.

**Appendix A**  
**Evaluation of Wastewater Management Systems**

FOR ADOPTION

## 1. Overview

This Section provides a review of the range of accredited wastewater treatment systems and available land application systems available for domestic and commercial application in Victoria, with particular consideration given to their suitability for use in the study area.

EPA Victoria will continue to regulate under the *Environment Protection Act 2017 (as amended)* what types of DWM systems are approved for use. The new legislation will be in operation from 1 July 2021. DWM treatment system brands and models will need to be certified by an accredited conformity assessment body as conforming to the relevant Australian Standard. This accreditation will be given by the Joint Accreditation System of Australia and New Zealand or any other accreditation body approved by the Authority (assessment body). The assessment body must certify the treatment system as conforming to the relevant Australian and New Zealand Standard. The appropriate standards for the different types of treatment systems is as follows:

- Septic tanks (and vermiculture systems) – AS/NZS 1546.1:2008, on-site domestic wastewater treatment units, Part 1: Septic tanks.
- Waterless composting toilets – AS/NZS 1546.2:2008, on-site domestic wastewater treatment units, Part 2: Waterless composting toilets.
- Secondary treatment systems – AS/NZS 1546.3:2017, on-site domestic wastewater treatment units, Part 3: Secondary treatment systems.
- Sand filters – AS/NZS 1546.3:2017, on-site domestic wastewater treatment units, Part 3: Secondary treatment systems.
- Domestic greywater system – AS/NZS 1546.3:2016, on-site domestic wastewater treatment units, Part 4: Domestic greywater treatment systems.

EPA holds a register of the DWM systems with valid Certificates of Conformance within Victoria, with the EPA website to be regularly consulted for an up-to-date list of accredited systems. Transitional arrangements will also apply to previously issued certificates that have not expired by 1 July 2021. For innovative DWM systems, an exemption from these requirements may be granted to a permit applicant by EPA under section 459 of the Act.

*Please note that Council approval is required prior to the installation, alteration or rectification of any DWM system.*

## 2. Exclusions and Variations

These guidelines do not relate to the mass production of manufactured proprietary treatment systems approved by EPA Victoria. Information and standards for the internal design and manufacturing of such units should be obtained from EPA Victoria and the relevant Australian/New Zealand Standard.

However, these guidelines do address the design and installation of on-site wastewater management components that are subject to meeting the system type EPA Victoria Certificate of Conformance. Some aspects of this document vary from the standard requirements of the relevant Certificates of Conformance. These variations are considered appropriate for the following reasons:

- Because they represent a higher standard of practice than that included in the Certificates of Conformance that can be justified by current best practice from around the world.
- Because they may reduce risk to public health and the environment in comparison to current practice.
- Because they will increase the capacity for achieving the performance objectives set out in the *State Environment Protection Policy (Waters of Victoria)* and *Environment Protection Act 2017*.

- Because they reflect a more site specific approach utilising local conditions to set requirements.

A proposed installation or rectification that does not conform to the standard drawings contained in this guideline may be acceptable, providing it:

- is assessed by, and deemed acceptable to, Council; and
- can achieve the performance objectives set out in Part IV, Section 32 of the *State Environment Protection Policy (Waters of Victoria)*.

It is recommended that Council be consulted on any variation from this document in the installation of DWM system components.

### 3. Plumbing and Drainage Work

This appendix does not address standards of work for plumbing and drainage as they relate to DWM components. The *Plumbing Regulations 2018* set out these requirements and generally require plumbing and drainage work to be carried out in accordance with *AS/NZS 3500 – National Plumbing and Drainage Code of Practice*. A licensed plumber is required to carry out all plumbing and drainage work up to the connection point to the treatment system. This document does not eliminate any requirement to comply with the EPA Code of Practice.

### 4. Key issues for System Selection and Design

#### 4.1 Wastewater Treatment

For domestic and commercial wastewater management systems alike, the key issues that determine the selection of wastewater treatment systems are:

- Flow volumes/loads;
- Flow rates and peaks (including intermittent usage);
- Wastewater strength (particularly organics); and
- The degree of constraint of the site for land application of effluent.

Depending on the nature of the development, these aspects of wastewater management can vary significantly and pose challenges to the system designer and owner. Specialist design is typically required for commercial wastewater streams and for seasonal fluctuations in flows (such as holiday rental properties). Section 6 below discusses each of the treatment technologies widely available, and their opportunities and limitations.

In addition, there are considerations relating to costs and practicalities, such as system footprint and ease of installation and servicing. Appendix C of the EPA Code of Practice 819.4 (2016) provides useful guidance on the factors to consider when selecting an EPA-approved DWM system.

#### 4.2 Land Application of Effluent

The key issues that influence the selection and design of land application systems (domestic or commercial) are:

- The level of treatment of the effluent (primary, secondary or advanced secondary);
- Soil characteristics (particularly texture, structure, depth, dispersibility and phosphorus adsorption capacity);
- Site characteristics (particularly slope, aspect and shading); and
- Proximity to sensitive receiving environments (such as surface waters and groundwater).

For constrained sites, the preferred effluent management strategy can dictate the level of wastewater treatment required. For example, a small lot with insufficient area to apply the entire effluent load may require a composting toilet with advanced greywater treatment for beneficial reuse to reduce volume of treated effluent being applied to the limited available space. In some

cases, there may be no suitable solution, or a pump-out tank may be required to tanker wastewater off-site for disposal at an approved facility.

## 5. Pump-out Systems

Pump-out systems convey raw wastewater or septic tank effluent to a holding tank (also known as a pump-out tank or collection well) for removal by licenced tanker (pump-truck) for disposal in an approved sewer main access hatch or municipal sewage treatment plant (under contract). They are generally regarded as a last resort, typically used to service properties where:

- there is inadequate available space to sustainably assimilate treated effluent by land application;
- existing land application systems have failed and cannot be safely used to apply effluent; or
- the lot will be connected to sewer in future (i.e. an interim solution).

The EPA Code of Practice 891.4 states that a pump-out tank must not be permitted for a new development, allotment or building.

Adequate sizing of holding tanks is important to ensure that adequate storage capacity is provided to allow lead time to arrange a licenced pump-out contractor.

Holding tanks should be fitted with high water level alarms and must incorporate both audible (buzzer) and visual (strobe) alarm components. The following minimum standards are required for high water alarm systems:

- a muting facility for the audible alarm is to be incorporated into the alarm design. The muting facility shall reset to audible after 24-hours;
- the alarm panel shall be located in a visible position within the building or other location approved by Council;
- the float switch shall be set at a level such that on activation, two (2) days storage remains within the collection well; and
- provision of an information sign that provides contact names and telephone numbers should the alarm be activated.

All wastewater or effluent holding tanks should be installed with adequately sealed lids, and positioned, so that they do not impact on existing structures or neighbouring properties and stormwater is diverted around the tanks. Stormwater ingress must be avoided, as it can result in excessive pump out costs and may result in displacement of raw wastewater to the ground surface, posing a significant human health and environmental risk. The tanks must be positioned to allow access by a pump-truck and its vacuum hose attachment.

AS/1546.1:2008 is broadly applicable to the design, installation and maintenance of holding for domestic and small commercial systems.

## 6. Wastewater Treatment Systems

There are currently five (5) broad categories of wastewater treatment system types that are accredited by the EPA:

1. AS 1546.1 – Septic Tanks (and vermiculture systems);
2. AS 1546.2 – Waterless Composting Toilets (and dry composting toilets);
3. AS 1546.3 – Secondary Treatment Systems;
4. AS 1546.3 – Sand Filters; and
5. AS 1546.4 – Domestic Greywater Treatment Systems.

A brief summary of each is provided below. For more detailed information, consult the current EPA Code of Practice and the EPA website –

<http://www.epa.vic.gov.au/yourenvironment/water/onsite-wastewater>. Tables comparing the specific types of treatment and land application systems, and their suitability for use within various areas of the Shire, are provided at the end of this Appendix.

### 6.1 Greywater Treatment Systems

Greywater treatment systems are accredited to treat laundry, shower, bath, hand-basin and kitchen greywater only. Blackwater (toilet waste) must never be treated in greywater treatment systems. It is preferable that kitchen water is kept separate from the other greywater streams and treated with the blackwater stream, as kitchen greywater can be relatively high in contaminants compared to other greywater streams. Greywater treatment systems can be useful for upgrading direct-diversion greywater systems where blackwater is to be kept separate, particularly if kitchen wastewater can be re-plumbed to the blackwater septic tank to prevent it entering the greywater treatment system.

If a greywater treatment system is utilised at a site, the blackwater also needs to be treated and disposed of onsite in an appropriately designed and accredited system. A justification is required within the LCA by the assessor, but the greywater typically accounts for 65% of the total wastewater load for a domestic development. The blackwater stream accounts for the remaining 35%, or appropriate leachate if opting for a waterless blackwater system (i.e. composting toilet).

Greywater that is treated to advanced secondary standard, in accordance with the current EPA Code of Practice and AS 1546.4, is of 'advanced secondary' standard that can be used for toilet flushing, cold water supply to clothes washing machines, and surface and subsurface irrigation. Advanced secondary effluent must achieve the following criteria:

- Biochemical Oxygen Demand (BOD<sub>5</sub>): <10mg/L
- Total Suspended Solids (TSS): <10mg/L
- *E. coli* or thermotolerant coliforms (if disinfected): <10cfu/100mL

This is also referred to as the 10/10/10 standard by EPA Victoria. The nutrient removal performance varies considerably between and within advanced secondary treatment system types. Only greywater systems are accredited by EPA Victoria to achieve this standard as per AS 1546.4. The operational costs of greywater systems can outweigh the benefits of reusing the recycled water. For this reason, they are most commonly used when potable water supply is not reliable (e.g. for households supplied by rainwater tank in a low-rainfall area).

### 6.2 Collection/ Pump Wells and Wastewater Pumps

Collection/ pump wells must be designed and constructed to comply with AS/NZS 1546:2008. The capacity of domestic collection/ pump wells shall be calculated based on the dosing requirements of the downstream component (e.g. subsurface irrigation area, trench or additional treatment system such as a sand filter). A minimum of 12 hours retention time must be provided above the operating level of the flat switch for emergency storage. The storage capacity of a pump well must also be adequate to handle the peak hourly flow from the system (when considering pump capacities). All pump wells must have a minimum capacity of 1,000L. Collection/ pump wells installed in commercial or industrial premises shall be designed and sized according to the projected demand by a suitably qualified person. A high level alarm light and/or audible device (bell or buzzer) must be located on the premises so that failure of the pump set is easily detected.

Pump wells may be configured as demand dosing or timer dosing. This will depend on the need for flow balancing/ equalisation. Float switches do not provide any flow balancing capabilities to a system.

- Tank size for timer dosing systems must be calculated using a cumulative storage assessment to make sure flow balancing can be sustained. Consideration will need to be given to variations in incoming hydraulic load and the maximum daily loading rate of the receiving component.
- A high level alarm light and/or audible device (bell or buzzer) must be located on the premises so that failure of the pump set is easily detected.



- Standby pumps which incorporate automatic cut-in devices must be installed in all systems except those serving single dwelling houses or premises where the daily flow is less than 1500 litres.
- Pump sets and control switches shall be installed in accordance with the manufacturer's specifications and to the requirements of the electricity supply authority.

### 6.2.1 Pumps

Pumps must be designed and warranted by the manufacturer for use in wastewater and should have a design life of at least five (5) years. Components will need to be corrosion resistant and capably of transferring wastewater with characteristics that match the job. Typically a pump will be designed to convey wastewater with predicted characteristics, including raw wastewater (significantly large solids), primary treated effluent (some solids), secondary treated effluent ('dirty water') or advanced secondary treated effluent ('clean water'). Systems that utilise chlorine for disinfection will have a greater potential for pump corrosion. Domestic wastewater pumps must be warranted by the manufacturer to operate at the duty required for the job (i.e. frequently but for short periods, or constantly). Pumps must be capable of delivering wastewater at simultaneous flow rate and pressure that matches the hydraulic characteristics of the target component. The required flow rate and total dynamic head must be calculated for all pressurised components (i.e. dosing manifolds). The total dynamic head must be calculated for all non-pressurised components (i.e. transfer pumps between non-pressurised treatment components and pump dosed trenches and beds).

### 6.2.2 Dosing Siphon

If there is a desire to avoid the use of electricity and mechanical devices, a dosing siphon can be used to pressure dose system components. Automatic dosing siphons consist of a single apparatus with no moving parts installed in a collection tank that can trigger a siphon action when effluent rises to a predetermined level. The siphon resets itself when the level drops to a predetermined level prior to the next cycle. Requirements for the use of dosing siphons include:

- dosing siphons for single domestic houses should be installed in a 250L collection well.
- alternative sizes for the collection well will be necessary if doses that are larger or smaller than typical domestic loads are required.
- a minimum fall of 0.5m will be required between the outlet of this well and the distribution manifold of the pressurised component.

### 6.3 Primary Treatment Systems

According to the EPA, there are four (4) broad categories of primary treatment systems (for use with combined wastewater, blackwater only or as pre-treatment for greywater treatment systems):

1. Septic tanks;
2. Incinerating toilets (toilet waste only);
3. Wet composting systems (combined wastewater); and
4. Dry composting toilets (toilet waste only).

Primary-treated effluent quality can vary considerably, depending on a broad range of factors, and there are no minimum standards specified by EPA Victoria. Incinerating toilets do not produce effluent and composting toilets produce a concentrated leachate, to which effluent quality standards do not apply.

#### 6.3.1 Septic Tanks

Septic tanks (for combined wastewater or blackwater only) are traditionally the most common type of treatment system in established localities without reticulated sewerage. They can also be used as pre-treatment for greywater treatment systems, although this is far less common. The technology is passive, whereby wastewater is gravity fed to a single tank (typically concrete or plastic), ideally fitted with a baffle and inlet and outlet 'T-pieces' to prevent extrusion of solids into

the trenches or backflow to the inlet. All new septic tanks shall be fitted with an effluent outlet filter that fits into the outlet square of the tank. Some tanks may require minor modification of the access hole to allow for maintenance of the filter. Where possible, an outlet filter shall be installed on existing septic tanks during rectification or modification work to a system. Dense solids settle to the bottom of the tank to form sludge, while a lower-density scum forms at the surface (comprised of cellulose, fats, oils, grease and other materials). Anaerobic digestion of colloidal and dissolved organic solids occurs, and some nitrogen and phosphorus is also removed. The primary-treated effluent is discharged by gravity for further treatment in a secondary treatment system or to a land application system suitable for primary effluent (such as trenches, beds or a mound).

Septic tanks should be pumped out before sludge build-up or scum thickness reduces the available capacity for wastewater detention to the point where treatment efficacy is being impacted. Depending on tank capacity, household occupancy and influent strength, the pump-out period would be required every 3-5 years for combined wastewater and blackwater septic tanks (the EPA currently requires septic tanks be desludged every three years to ensure maximum effectiveness), and about 10-15 years for greywater only.

Septic tanks are subject to *AS 1546.1:2008* (On-site domestic wastewater treatment units – septic tanks) as well as the current EPA Code of Practice and current system type EPA Certificate of Conformance.

### **6.3.2 Incinerating Toilets**

Incinerating toilets are rarely installed and are most suited to situations where a very small footprint and nil water use (and wastewater generation) are required. There are few models on the market, but all are similar in design and operation: wastewater is captured in a cone-shaped bowl or void, generally upon a fresh paper liner for each use system. With the push of a lever or button, the waste drops into the electric incineration chamber below which is sealed off from the bowl, but is vented to the outdoors (or to an approved ventilation system). A small amount (approximately 1 tablespoon) of ash is produced with each use and the ash collection trap must be cleaned approximately weekly (depending on frequency of use). The energy costs of this system are very high compared to other treatment systems.

### **6.3.3 Wet composting systems (combined wastewater)**

Wet composting systems are also known as ‘worm farms’ and ‘biological filters’ and have increased in popularity over the past decade. Raw wastewater is discharged directly to the top of the filter (contained in a plastic tank similar to a septic tank) and a rich humus layer develops that separates the solids from liquid prior to composting the solids with the aid of soil micro- and macro-fauna, including earthworms. The liquid is discharged by gravity to absorption trenches and the composted solids are periodically removed by maintenance staff (every two years). Unless otherwise directed by Council, the composted humus material is to be buried within the confines of the premises. The cover of soil over the deposited humus must be at least 75mm deep. Compost must not be buried in an area used for the cultivation of crops for human consumption, unless: compost is placed in a separate lidded composting bin providing aeration for at least three (3) months with no further addition; or compost has been seasoned underground for at least three (3) months. The system is a passive, biologically-driven treatment process that mimics processes occurring in nature.

Wet composting toilets (or vermiculture systems) are subject to *AS 1546.1:2008* as well as the current EPA Code of Practice and current system type EPA Certificate of Conformance.

### **6.3.4 Dry Composting toilets (waterless or low-flush)**

The EPA list refers to only dry (waterless) composting toilets; however low-flush models are also available, although they are less common. Composting toilets are generally installed for water saving or lifestyle reasons (e.g. ‘eco homes’ or remote homes with limited water supply). They are very rarely retrofitted into existing homes, and require a separate greywater treatment system to treat all greywater streams (including kitchen greywater).

Any liquid in the system (including urine) forms a concentrated leachate which is disposed of by gravity drainage to a small absorption trench, which has long-term sustainability implications and is not suitable for areas with shallow soils, heavy-textured soils or high water tables. Alternatively, the leachate can be collected in a sealed container for disposal at a licenced wastewater treatment facility.

Waterless composting toilets are subject to AS 1546.2:2008 ('On-site domestic wastewater treatment units – waterless composting toilets') as well as the current EPA Code of Practice and current system type EPA Certificate of Conformance.

#### 6.4 Combined Wastewater Secondary Domestic Treatment Systems

According to the EPA, there are four (4) broad categories of domestic secondary treatment systems:

- Aerated wastewater treatment systems (AWTS)
- Membrane Filters
- Reedbeds
- Sand and other Media Trickling Filters

The technologies used in domestic-scale systems are also often used in commercial systems (discussed in 6.4.5 below). The minimum standards for secondary effluent quality in Victoria (as per the current EPA Code of Practice) are as follows:

- Biochemical Oxygen Demand (BOD<sub>5</sub>): <20mg/L
- Total Suspended Solids (TSS): <30mg/L
- *E. coli* or thermotolerant coliforms (if disinfected): <10cfu/100mL

Nutrient removal performance varies considerably between secondary treatment systems and largely depends on design and operation (as well as influent nutrient concentrations).

##### 6.4.1 Aerated wastewater treatment systems (AWTS)

Domestic AWTS are pre-fabricated, mechanically aerated wastewater treatment systems designed to treat wastewater flows of <2,000L/day. They are tank-based systems, comprising either one or two discrete tanks that typically employ the following processes:

- settling of solids and flotation of scum in an anaerobic primary chamber or separate primary tank (effectively operating as a septic tank). This stage is omitted in some models.
- oxidation and consumption of organic matter through aerobic biological processes using (active or passive) mechanical aeration.
- clarification – secondary settling of solids.
- disinfection – usually by chlorination but occasionally using ultraviolet irradiation.
- regular removal of sludge to maintain the process.

AWTS are typically supplied as stand-alone, proprietary systems. They require regular maintenance in accordance with the EPA Certificate of Conformance for the specific model (usually quarterly) to ensure satisfactory performance and adequate disinfection. The operating (power) costs of AWTS are relatively high compared to more passive systems such as trickling filters and reed beds, as the aerobic treatment phase requires air blowers to be run for several hours each day.

AWTS are generally **not** suitable for premises with intermittent use or surge loads, such as holiday homes and commercial premises with very low flow/high flow wastewater cycles. AWTS must not be switched off when not in use as the deprivation of oxygen will kill the aerobic bacteria within a few days and populations can take weeks to be re-established when the system is turned on and

wastewater supply resumes. Some AWTS models have a low-flow switch which re-circulates effluent to keep aerobic bacteria alive when not in use.

All AWTS must be installed with an alarm that has visual and audible components to indicate mechanical and electrical malfunctions. The alarm shall have one signal next to it and another in a suitable position attached to the house. The alarm shall incorporate a warning lamp, which may be reset only by the service agent.

Prior to the installation of a system, the owner must enter into an annual service contract for the AWTS with a service agent authorised by BBSC.

AWTS are subject to *AS1546.3:2017* (Secondary Treatment Systems)) as well as the current EPA Code of Practice and current system type EPA Certificate of Conformance.

#### **6.4.2 Membrane Filters**

Membrane filters provide advanced secondary treated effluent using microfiltration or reverse osmosis membranes, usually following primary and secondary treatment in separate chambers or tanks. Use of membranes requires high energy use and therefore the ongoing costs as well as upfront costs of membranes systems which are high when compared to other systems. Furthermore, the systems require regular, ongoing maintenance to ensure membranes are not damaged or remain fouled.

#### **6.4.3 Reedbeds**

The wastewater influent must first undergo primary treatment (e.g. a septic tank) prior to being treated in a reed bed. A reed bed is also known as subsurface-flow reed bed or constructed wetland and is designed to ensure that effluent flows beneath the gravel media surface, within the root zone of wetland plants, to ensure there is no standing water in the system. The system is lined with an impermeable membrane and constructed so that effluent flows horizontally through the media, via gravity. The wetland plants (macrophytes) and microbiological biofilms that develop on roots and gravel surfaces remove contaminants and pathogens from the effluent as it passes through. The treated effluent drains to a collection sump, from which it is pumped or discharged by gravity to the land application area (e.g. subsurface irrigation or absorption trench).

Reed beds are generally much more effective at nitrogen removal than phosphorus removal, with phosphorus removal expected to decline over time as the substrate becomes P-saturated. Although they are often touted as 'maintenance-free,' periodic replacement of the filter media assists in ongoing phosphorus removal.

Reedbeds are suitable for intermittent use and low-flow scenarios; however very high strength wastes (particularly BOD<sub>5</sub> and nutrients) can overwhelm the system and lead to poor treatment. For consistently high-strength influent wastewater (such as food or dairy processing premises), an additional primary treatment stage or secondary pre-treatment stage may be required, with the reed bed providing final effluent 'polishing'.

Any proposal to install a reed bed must be accompanied by a design report that includes the following:

- surface area (m<sup>2</sup>);
- hydraulic residence time (days);
- length and width; and
- any site specific recommendations regarding suitable plant species.

The report should be written by a suitably qualified person in accordance with recognised standards such as Headley & Davison (2003) and the NSW Department of Land and Water Conservation (1998).

The ground surface surrounding the reed bed is to be finished so as to allow for the free flow of stormwater away from the unit. This may require the installation of diversion drains.

#### **6.4.4 Sand and other Media Trickling Filters**

For all sand and media filters, the influent must first undergo a minimum of primary treatment (e.g. a septic tank). Sand and textile media filters are configured to provide a very large surface area to volume ratio, which hosts aerobic microorganisms that treat the effluent as it passes over the sand or media, usually by gravity. Proprietary filter systems typically incorporate the primary treatment tank into a stand-alone unit and recirculate a proportion of the treated effluent through the filter to improve effluent quality. The system is typically located below or at ground level. Sand filters can also be single-pass (i.e. non-recirculating) and therefore require a larger surface area to ensure adequate hydraulic residence time (HRT) of effluent.

Sand and textile media filters are generally more resilient to intermittent flows and shock loading than AWTs, and can have significantly lower operating costs. Recirculating systems (textile and some sand filters) have a relatively small footprint (and demand for materials) compared to single-pass sand filters; however, single pass filters can be designed with passive (gravity) dosing, requiring no electricity to operate. Site-specific hydraulic designs are required to support passive dosing systems.

Sand filters must comply with the requirements outlined in Appendix G of EPA Code of Practice (891.4). The maximum dosage rate that the sand filter is to be sized on is dependent on the type of wastewater being treated, but is typically a dosage rate of 50L/m<sup>2</sup>/day.

For consistently high-strength influent wastewater (such as food or dairy processing premises), an additional primary treatment stage or secondary pre-treatment stage may be required, with the filter providing final effluent 'polishing'.

#### **6.4.5 Combined Wastewater Secondary Commercial Treatment Systems**

These systems are for predominantly human waste (minimal trade wastes) with flows 2,000-5,000L/day (in accordance with EPA 2015 regulations). The treatment technologies used are broadly similar to those used in domestic wastewater treatment systems, but are expanded in scale. Some systems are modular in design, using numerous small treatment units either in series or in parallel, allowing expansion of treatment capacities where required (including bringing standby units online for peak loads or permanent increases in influent loads). In many cases, companies will provide systems to both the domestic and the commercial market.

### **7. Land Application Systems for Treated Effluent**

The range of available land application systems is discussed below; and tables at the end of this Appendix provide a summary of DWM treatment and land application systems available, and their suitability for use in various regions of the Shire (with consideration of system compatibility, and seasonal variance of flows from intermittently occupied holiday dwellings and seasonally-operating small businesses).

The location of the land application system and the preferred land application option must be determined based on the outcomes of the appropriate level of Land Capability Assessment as per Section 4.2.

#### **7.1 Absorption Trenches and Beds**

Conventional absorption trenches and beds have conventionally been used for land application of septic tank effluent. Both options rely substantially on effluent absorption to the soil and impose relatively high loading rates on the soil (compared to irrigation). This increases the risk of systems being overloaded and failing hydraulically in the long term, with potential adverse health and environmental impacts. Furthermore, prolonged effluent application through absorption systems increases the risk of soil degradation by increasing salinity and sodicity, as well as the build-up of impermeable or slowly-permeable 'bio-mats' which can prevent movement of effluent into the soil, leading to 'creeping failure'. These disposal systems offer very limited opportunity for effective reuse of effluent and do not represent current best practice.

Over the years there have been various modifications to conventional absorption trenches and beds, some of which have been developed into proprietary ‘off-the-shelf’ products including various brands of self-supporting arch drains and the *Advanced Enviro-Septic™* modular trench.

Absorption trenches and beds are considered inappropriate for sites with shallow soils, high groundwater or heavy-textured (clay-based) soils, due to limited infiltration capacity. They are also generally not suitable for gravels and sands, as the very high permeability of these materials can inhibit beneficial treatment within the soil profile and allow effluent to rapidly percolate to the groundwater table. Areas with high rainfall are also at high risk of surface and groundwater contamination from conventional trenches and beds. Absorption trenches and beds can also be used with secondary-treated effluent, which can be dosed at a higher rate than primary-treated effluent (in accordance with Table 9 of the EPA Code of Practice (2013) and Table 5.2 of *AS1547:2012*).

Absorption trenches/ beds must be inspected by Council;

- prior to backfilling; and
- after completion of all work (and landscaping/ turfing).

### 7.2 Evapotranspiration-Absorption Trenches and Beds

Evapotranspiration-absorption (ETA) beds are essentially shallower absorption trenches or beds that allow some plant uptake of the effluent from the soil profile, reducing the amount of effluent that is leached to deeper soils and groundwater. They can improve environmental and public health outcomes for areas with heavy-textured or shallow soils, or high watertables, compared to absorption trenches and beds. However, they are prone to similar problems to conventional absorption trenches, including build-up of bio-mats and rapid percolation in highly-permeable soils. ETA systems are suitable for both primary and secondary treated effluent; however the DLRs nominated by both the current EPA Code of Practice and *AS1547:2012* do not vary with the level of treatment (as is the case for absorption systems).

ETA beds must be inspected by Council:

- prior to backfilling; and
- after completion of all work (and landscaping/ turfing).

### 7.3 Modified ETA Trenches and Beds

In recent years, there have been several proprietary and custom-built modifications to standard ETA trenches and beds, which further optimise evapotranspiration of effluent and minimise deep drainage. The most common example is the custom-made geotextile-wrapped and/or lined arch or pipe trenches, which use capillary action in the geotextile to ‘wick’ effluent into the topsoil and root zone above (referred to in the current EPA Code of Practice as a ‘wick trench or bed’). Wick trenches/beds are generally considered suitable for low-permeability soils. Like standard ETA systems, the modified versions are suitable for both primary and secondary treated effluent. The EPA Code of Practice nominates Design Loading Rates (DLRs) for wick trenches using secondary-treated effluent. For primary-treated effluent, however, the nominated DLRs for standard ETA systems in Table 5.2 of *AS1547:2012* should be adopted. The long term performance of modified ETA systems has not been tested as they are a relative recent innovation. Use of primary-treated effluent could result in clogging of geotextile materials over time.

### 7.4 Mounds

Sand mounds, also known as Wisconsin mounds, are often an appropriate on-site solution for lots with limited space, shallow soil profiles, poor drainage or high water tables. Mounds are effectively raised soil absorption systems comprising layered fill, into which effluent is dosed. Effluent receives further treatment as it percolates down through the mound and is then absorbed by the natural soils below the mound. A properly designed mound can have a higher evapotranspiration potential than an ETA bed of equivalent size, further enhancing effluent disposal on constrained lots.

The basal footprint of a domestic mound is typically in the order of 7m wide by at least 20m long, and there are considerable up-front cost in the materials and construction of mounds. Mounds are suitable for primary or secondary treated effluent, and provide further treatment of effluent as it moves through the sand profile.

In addition, there are proprietary mound systems which use a modified fill media primarily from industrial waste products of aluminium or iron smelting, which have a very high phosphorus adsorption capacity. When designed, installed and maintained correctly, these systems can present a good solution for constrained sites. However, the success of these systems has been variable in the past, largely due to inappropriate design and installation. Table 9 of the EPA Code of Practice (2013) and Table 5.2 of *AS/NZS 1547:2012* provide DLRs for mounds. Mounds must be inspected by Council;

- once the basal area of the mound has been prepared
- prior to covering the distribution manifold and before the agricultural pipe has been placed over the pressure manifold. At this inspection the squirt height from all orifices will be measured. There should be no more than 15% variation in squirt height across the whole manifold; and
- after completion of all work and landscaping/ turfing.

### 7.5 Low Pressure Effluent Distribution (LPED) Irrigation

LPED irrigation systems were originally developed for use in Category 1 and 2 soils (as per *AS/NZS 1547:2012*) where conventional absorption beds can result in overloading of soils at the proximal section of the trench while under-loading the remainder of the trench. Note that Table 9 of the EPA Code of Practice 891.4 (2016) prohibits the use of LPED systems in Category 1 soils (gravels and sands) and Category 2a soils (weakly structured sandy loams). LPED systems can be beneficial for Category 5 soils; however, the large area they must occupy for such soils would be better served by subsurface irrigation (using secondary treated effluent) – see Section 5.7 below.

In LPED systems, effluent is discharged into 25-30mm perforated pipes contained within 50-100mm slotted pipes, to distribute effluent more evenly into the surrounding aggregate and to prevent soil intrusion into the perforations. The pipes are laid in narrow, shallow trenches (filled with aggregate and capped with topsoil), in order to optimise contact with aerobic bacteria in topsoil and to facilitate plant uptake of effluent. The system can be pressurised using a pump or a passive dosing device (i.e. a Flout™ or a siphon), with a detailed hydraulic design to ensure even distribution throughout the system. LPED irrigation can be used with either primary or secondary effluent, but is more commonly used as an alternative to trench and bed systems for primary effluent. It is recommended that an outlet filter is installed on primary treatment systems to reduce the amount of suspended solids and organics being conveyed into the LPED system. Table 9 of the EPA Code of Practice 891.4 (2016) and Table 5.2 of *AS1547:2012* provide DLRs for LPED systems (one rate for both primary and secondary effluent). Detailed design and installation advice is provided in Auckland Regional Council (2004) Technical Publication 58 (however the local DLRs must be used instead of those specified by ARC).

### 7.6 Surface Spray Irrigation

Surface spray irrigation (using mist or droplet sprinklers) while increasing in popularity over the past 20 years, is now considered an outdated technology that can pose unacceptable public and environmental health risks due to potential exposure and also surface runoff during rainfall. Often, an inadequate number of sprinklers are installed to ensure even coverage over an adequately large area; and commonly the sprinklers are not fixed and must be frequently moved by the resident to reduce over-loading (which is often neglected over time). In addition, surface irrigation is not considered appropriate for slopes greater than 10%, as the risk of runoff increases. Surface spray irrigation is more suitable for relatively large and flat areas, with limited access to the irrigation field and large buffer distances to surface watercourses and drains. For typical domestic and small commercial sites, subsurface or covered-surface (i.e. under mulch) drip irrigation is considered best practice. Table 9 of the EPA Code of Practice 891.4 (2016) and Table 5.2 of

AS1547:2012 provide Design Irrigation Rates (DIRs) for surface irrigation systems. Council does not permit any new surface irrigation systems to be installed, but permits the existing surface irrigation systems to be managed as per their current permit.

### **7.7 Subsurface or Covered-surface Drip Irrigation**

Subsurface drip irrigation or covered-surface drip irrigation systems are becoming more popular in recent years. Properly designed systems apply effluent at much lower volumetric rates and over larger areas than absorption or ETA trenches/beds or mounds.

Effluent is applied in the root zone of plants (100-150mm below the surface) at a rate that more closely matches plant and soil requirements (evapotranspiration), leading to more effective effluent reuse. The reliance on soil absorption is relatively low and hence the risk of contaminants accumulating in the soil or leaching to groundwater is also low.

Subsurface drip irrigation typically comprises a network of proprietary, pressure-compensating drip-irrigation line that is specially designed for use with effluent and contains specially designed emitters that reduce the risk of blockage, biofilm development and root intrusion. Subsurface irrigation virtually eliminates the risk of people inadvertently coming into contact with effluent and also minimises the risk of effluent being transported off-site, even during rain. Subsurface irrigation may be installed on sloping lots, provided the application rate is reduced accordingly to ensure that effluent migration down slope is taken up adequately within the root system (as per Table M2 of AS 1547:2012).

When properly designed, installed and operated, the system will ensure good distribution of effluent at uniform, controlled application rates. By properly sizing the land application areas to ensure sustainable hydraulic and nutrient loading rates, water and nutrients can be effectively utilised and are unlikely to seep to groundwater or run-off to surface waters. Care must be taken in designing and installing irrigation systems in areas that experience temperatures below freezing. Table 9 of the EPA Code of Practice (2013) and Table 5.2 of AS1547:2012 provide Design Irrigation Rates (DIRs) for subsurface irrigation systems.

Subsurface irrigation areas must be inspected by Council prior to:

- occupation of a new dwelling; and
- commissioning of the treatment system.

## **8. System Selection**

The following tables provide an overview of the range and application of EPA-accredited wastewater treatment system types, their compatibility with land application systems, and their suitability for use across unsewered areas of the Shire (based on soil characteristics only). Individual proprietary systems (i.e. brands) are not discussed. Similarly, Table 2 of EPA Code of Practice 891.4 (2016) details DWM system compatibility.

The influence of climate patterns on land application system sizing is addressed in the Land Application System Sizing Tables which are included in the Locality Reports in Appendix B of the Technical Document. Note that the assessment of land application system suitability is based on the type and depth of soils identified in the locality, not the water balance for the locality. The Sizing Tables identify situations where the water balance does not resolve itself and minimum application areas cannot be determined using the water balance approach.

However, it may be possible to design and construct these systems in areas with high rainfall, following detailed LCA and system design, and potential mitigation measures such as the importation of topsoils to reduce effluent loading rates.



## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

**Table 9: DWM System Compatibility Matrix**

Onsite Wastewater Management System	Absorption Trenches/Beds	Standard and Modified ETA Trenches/Beds	Mounds	LPED Irrigation	Surface or Subsurface Irrigation <sup>1</sup>	Toilet flushing and cold water supply to washing machines
<b>PRIMARY TREATMENT</b>						
Septic Tanks	YES	YES	YES	YES	NO	NO
Wet Composting Systems/Biological Filters	YES	YES	YES	YES	NO	NO
<b>SECONDARY TREATMENT</b>						
Aerated Wastewater Treatment Systems	YES	YES	YES	YES	YES	NO
Membrane Filters	YES	YES	YES	YES	YES	NO
Reed Beds	YES	YES	YES	YES	YES	NO
Sand or Media Trickling Filters	YES	YES	YES	YES	YES	NO
<b>ADVANCED SECONDARY TREATMENT</b>						
Greywater Treatment Systems	YES	YES	YES	YES	YES	YES
<sup>1</sup> pressure-compensating, subsurface drip irrigation is preferred to surface spray or drip irrigation.						

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Table 10: Effluent Management Suitability by Locality

Locality	AS/NZS 1547:2012 Category of Limiting Soil Horizon	Indicative Soil Depth (m) <sup>1</sup>	Absorption Trenches/Beds	Standard and Modified ETA Trenches/Beds	Mounds	Surface or Subsurface Irrigation <sup>2</sup>	LPED Irrigation
Alvie	4 and 5	1.5	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Barham River Catchment (within Apollo Bay) <sup>3</sup>	5 and 6	1.2 (variable)	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Barongarook <sup>3</sup>	4 and 5	2.0	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Barramunga <sup>3,5</sup>	4		POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Barwon Downs <sup>3</sup>	5 and 6	2.0 (variable)	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Beeac	5 and 6	2.0	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Beech Forest <sup>3,4,5</sup>	4 and 5	<0.9	NOT SUPPORTED	POSSIBLE Secondary Wick Trench recommended	NOT SUPPORTED	NOT SUPPORTED	NOT SUPPORTED
Carlisle River <sup>3,5</sup>	5 and 6	>2.0	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Coragulac	5	1.5	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Cororooke	4	1.5	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Ferguson <sup>3,4,5</sup>	4 and 5	0.9	NOT SUPPORTED	POSSIBLE Secondary Wick Trench recommended	POSSIBLE	POSSIBLE	POSSIBLE
Forrest <sup>35</sup>	4 and 5	2.0	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Gellibrand <sup>3,5</sup>	5	0.9-2.0 (variable)	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Kawarren <sup>3,5</sup>	4 and 5	2.0	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Kennett River	4	0.9	NOT SUPPORTED	NOT SUPPORTED	POSSIBLE	POSSIBLE	POSSIBLE
Lavers Hill <sup>3,4,5</sup>	4 and 5	0.9	NOT SUPPORTED	Secondary Wick Trench only	NOT SUPPORTED	NOT SUPPORTED	NOT SUPPORTED
Weeaproinah <sup>3,4,5</sup>	4 and 5	0.9	NOT SUPPORTED	POSSIBLE Secondary Wick Trench recommended	NOT SUPPORTED	NOT SUPPORTED	NOT SUPPORTED
Wye River/ Separation Creek	1 (delta) - OR	0.9	NOT SUPPORTED	NOT SUPPORTED	NOT SUPPORTED	POSSIBLE	NOT SUPPORTED
	4 (slopes)		POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
Wyelangtah <sup>3,4,5</sup>	4 and 5	0.9	NOT SUPPORTED	Secondary Wick Trench only	NOT SUPPORTED	NOT SUPPORTED	NOT SUPPORTED

<sup>1</sup> Soil profile information taken from Robinson *et al* (2003) study as used in Soil Suitability Sensitivity Analysis. This data was confirmed, where relevant, with field assessment of representative site's in each locality by Dr. Robert Van de Graaff in August 2014 and/or W&A in September 2014. Note that soil depth generally changes with slope. Only the most dominant soil landscape details are given for the town/settlement; hence, variability with soil type and depth may occur spatially throughout the locality. LCA investigations may identify differing soil conditions at individual locations.

<sup>2</sup> Pressure-compensating, subsurface drip irrigation is preferred to surface spray or drip irrigation

<sup>3</sup> All or Part of locality is within a DWSC.

<sup>4</sup> Towns/settlements in this locality are on the Otway Ridge (Climate Zone 4), system applicability improves as elevation reduces.

<sup>5</sup> The best-practice approach in DWSCs is (minimum) secondary treatment (min. 20/30 standard) with subsurface drip irrigation, or (for highly constrained properties/parcels) a Wick Trench/Bed system.

**Appendix B**

**Sensitivity Pro-forma Checklist**

FOR ADOPTION

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

<b>Parameter</b>	<b>Site specific input</b>
PFI Identification Number	
Lot Address	
Locality	
Zoning	
Area (ha)	
Soil Texture	
Soil Depth (m)	
Soil Structure	
Soil Limitations	
Permeability (Ksat) (m/day)	
Slope (%)	
Presence of Surface Waters	
Useable Lot Area (ha)	

**Appendix C**

**Land Capability Assessment Checklists**

FOR ADOPTION

**Table C1: Minimum Requirement for a Standard LCA and Report**

<b>Report Element</b>	<b><u>Standard</u> Requirements</b>	<b>Completed</b>
<b>1. Introduction and Background</b>	Report summary/ executive summary.	<input type="checkbox"/>
	Confirmation of Sensitivity Rating.	<input type="checkbox"/>
	Confirmation of any relevant sensitivity overlays (e.g. landslip) as per communications with Council.	<input type="checkbox"/>
	Confirmation that lot(s) meets minimum lot size criteria for COS Planning Scheme Zone.	<input type="checkbox"/>
	Current land use and development overview (including occupancy); single lot, increase in building entitlements (subdivision) or non-domestic development.	<input type="checkbox"/>
	Name, contact details and qualifications (insurances) of LCA assessor (author).	<input type="checkbox"/>
	Site location (including address and lot details) and owner.	<input type="checkbox"/>
	Lot area.	<input type="checkbox"/>
	Proposed/existing water supply.	<input type="checkbox"/>
	Availability of sewer.	<input type="checkbox"/>
	Locality map showing the site in relation to surrounding region.	<input type="checkbox"/>
<b>2. Site Inspection and Field Investigations</b>	Gather information on relevant Council, Water Corporation, Catchment Management Authority and State Government requirements, including restrictions and caveats on title, and planning/building/bushfire/flood controls, e.g. zones and overlays. Note Environmental Significant Overlays, potable water supply and DWSCs. Impose this information on a base map (or site plan) which shows their location with respect to title boundaries.	<input type="checkbox"/>
	Broad overview of locality and landscape characteristics that may pose a constraint to the sustainable application of wastewater on the site and adjacent land, e.g. climatic information, groundwater and bore water information. (Refer to stage 3 pp.35 EPA Code of Practice 891.4 (2016)).	<input type="checkbox"/>
	Details of date, time and methodology of site inspection and field investigations.	<input type="checkbox"/>
	Site assessment that considers all of the parameters as per Table 1 of the Victorian LCA Framework (2014). Detailed explanation of the level of constraint with regards to DWM and recommended mitigation measures to overcome these constraints.	<input type="checkbox"/>
	Minimum of two soil test pits or auger holes within the identified available effluent management area(s), with additional test pits required for more than one soil type (multiple soil landscapes or facets) as per the current EPA Code of Practice.	<input type="checkbox"/>
	Soil assessment that considers the following parameters from Table 2 of the Victorian LCA Framework (2014): <ul style="list-style-type: none"> <li>• colour and mottling;</li> <li>• electrical conductivity;</li> <li>• Emerson Aggregate Class;</li> <li>• permeability and design loading rate (using soil texture);</li> <li>• pH;</li> <li>• rock fragments;</li> <li>• soil depth;</li> <li>• soil texture (field textural analysis); and</li> <li>• depth to watertable (if required).</li> </ul> Detailed explanation of the level of constraint with regards to DWM and recommended mitigation measures to overcome these constraints.	<input type="checkbox"/>

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Report Element	Standard Requirements	Completed
<b>3. Available Area and Setback Distances</b>	Calculation of available effluent management area and location on the Site Plan.	<input type="checkbox"/>
	Discussion regarding the achievability of the applicable setback distances (Table 5 of the EPA Code of Practice 891.4 (2016)). Justification required.	<input type="checkbox"/>
<b>4. LCA Confirmation</b>	Contact Council if the LCA assessor disagrees with the final Sensitivity Rating for the site.	<input type="checkbox"/>
<b>5. Cumulative Impacts</b>	Using the desktop and site assessment information for the site, comment on any possible cumulative detrimental impacts that the development may have on beneficial uses of the surrounding land, surface water and groundwater.	<input type="checkbox"/>
<b>6. System Selection and Design*</b>	Design maximum wastewater load (generation rates) and organic load for the proposed development.	<input type="checkbox"/>
	Description of existing system (if applicable).	<input type="checkbox"/>
	Target effluent treatment quality.	<input type="checkbox"/>
	Description and location of applicable DWM treatment system options (refer to relevant Locality Report and EPA website for list of currently approved systems).	<input type="checkbox"/>
	List of effluent land application options and detailed description of preferred option and location (as per relevant Locality Report). Sizing of land application area as per the system Sizing Tables detailed in the Technical Document.	<input type="checkbox"/>
<b>7. Mitigation Measures</b>	Detailed discussion of mitigation measures to overcome any site or soil constraints posed to the sustainable treatment and application of wastewater on-site. This may include the following: <ul style="list-style-type: none"> <li>• Storm water management</li> <li>• Soil amelioration; and</li> <li>• Vegetation establishment and management.</li> </ul>	<input type="checkbox"/>
<b>8. Site Management Plan</b>	Description of ways to improve wastewater and DWM system performance for residents' reference.	<input type="checkbox"/>
	Operation and Management Plan.	<input type="checkbox"/>
<b>9. Conclusion</b>	Conclusion summarising all the important design, sizing and mitigation requirements to ensure sustainable on-site DWM.	<input type="checkbox"/>
<b>10. Site Plan Requirements</b>	Site address, including lot number and street number.	<input type="checkbox"/>
	All title boundaries.	<input type="checkbox"/>
	All relevant zones and overlays and/or restrictions (e.g. Council zoning and overlays, including Environmental Significant Overlays and DWSCs).	<input type="checkbox"/>
	Type of catchment (e.g. potable or other special water supply catchment).	<input type="checkbox"/>
	North arrow.	<input type="checkbox"/>
	Location of groundwater bores.	<input type="checkbox"/>
	Contour lines (at maximum 1 in 10m intervals), direction of slope and grade.	<input type="checkbox"/>
	Location of soil test pits or auger holes.	<input type="checkbox"/>
	Location of other utilities i.e. electricity, gas, telecommunications (which must be located outside the land application areas)	<input type="checkbox"/>
	Location of any significant site features e.g. rock outcrops or waterlogged regions.	<input type="checkbox"/>
Location of intermittent and permanent surface waterways (dams, creeks, reservoirs and springs).	<input type="checkbox"/>	

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Report Element	Standard Requirements	Completed
	Location of 1% and 5% Annual Exceedance Probability flood level contours lines (if applicable).	<input type="checkbox"/>
	Location, depth and specified use of groundwater bores on the site and adjacent properties from the register of the relevant Rural Water Corporation. Depth to groundwater table in winter (if less than 2.1m deep).	<input type="checkbox"/>
	Vegetation cover (can use aerial image as base map).	<input type="checkbox"/>
	Relevant setback distances as per Table 5 EPA Code of Practice 891.4 (2016).	<input type="checkbox"/>
	Location of existing and proposed buildings, sheds, driveways, paths and any other improvements.	<input type="checkbox"/>
	Available effluent management area(s).	<input type="checkbox"/>
	Location of proposed land application area (sized to scale).	<input type="checkbox"/>
	Location of proposed stormwater cut-off drains adjacent to the land application area.	<input type="checkbox"/>
	Location of proposed DWM system (nominal).	<input type="checkbox"/>
	Location of reserve land application area (sized to scale).	<input type="checkbox"/>
<b>11. Appendices</b>	Figures	<input type="checkbox"/>
	Site Plan	<input type="checkbox"/>
	Soil bore logs for all test pits or auger holes	<input type="checkbox"/>
	Certificate of Title(s) for lot (plan)	<input type="checkbox"/>
	Proposed building plans	<input type="checkbox"/>
	Planning Permit application (where applicable)	<input type="checkbox"/>
<p>* If site is located within Climate Zone 4, then site specific design is required and the Sizing Tables cannot be used. This is due to the higher rainfall and the need to utilise a water balance for design purposes. The LCA is to remain the same, except Stage 6 is to follow the requirements set out in the Detailed LCA Pro-forma.</p> <p>** Lots with a Low Sensitivity Rating that are located within a DWSC are required to complete this Standard LCA as per the current EPA Code of Practice requirements.</p>		



**Table C2: Minimum Requirements for a Detailed LCA and Report**

<b>Report Element</b>	<b><u>Detailed</u> Requirements</b>	<b>Completed</b>
<b>1. Introduction and Background</b>	Report summary/ executive summary.	<input type="checkbox"/>
	Confirmation of Sensitivity Rating.	<input type="checkbox"/>
	Confirmation of any relevant sensitivity overlays (e.g. landslip) as per communications with Council.	<input type="checkbox"/>
	Confirmation that lot(s) meets minimum lot size criteria for COS Planning Scheme Zone.	<input type="checkbox"/>
	Current land use and development overview (including occupancy); single lot, increase in building entitlements (subdivision) or non-domestic development.	<input type="checkbox"/>
	Name, contact details and qualifications (insurances) of LCA assessor (author).	<input type="checkbox"/>
	Site location (including address and lot details) and owner.	<input type="checkbox"/>
	Lot area.	<input type="checkbox"/>
	Proposed/existing water supply.	<input type="checkbox"/>
	Availability of sewer.	<input type="checkbox"/>
	Locality map showing the site in relation to surrounding region.	<input type="checkbox"/>
Site survey plan (2m contours) will need to be conducted by a qualified surveyor.	<input type="checkbox"/>	
<b>2. Site Inspection and Field Investigations</b>	Gather information on relevant Council, Water Corporation, Catchment Management Authority and State Government requirements, including restrictions and caveats on title, and planning/building/bushfire/flood controls, e.g. zones and overlays. Note Environmental Significant Overlays, potable water supply and DWSCs. Impose this information on a base map (or site plan) which shows their location with respect to title boundaries.	<input type="checkbox"/>
	Broad overview of locality and landscape characteristics that may pose a constraint to the sustainable application of wastewater on the Site and adjacent land, e.g. climatic information, groundwater and bore water information. (Refer to stage 3 pp.35 EPA Code of Practice 891.4 (2016)).	<input type="checkbox"/>
	Details of date, time and methodology of site inspection and field investigations.	<input type="checkbox"/>
	Site assessment that considers all of the parameters as per Table 1 of the Victorian LCA Framework (2014). Detailed explanation of the level of constraint with regards to DWM and recommended mitigation measures to overcome these constraints.	<input type="checkbox"/>
	Minimum of two soil test pits or auger holes within the identified available effluent management area with additional test pits required for more than one soil type (multiple soil landscapes or facets) as per the current EPA Code of Practice.	<input type="checkbox"/>
Soil assessment that considers all of the parameters in Table 2 of the Victorian LCA Framework (2014): <ul style="list-style-type: none"> <li>• colour and mottling;</li> <li>• electrical conductivity;</li> <li>• Emerson Aggregate Class;</li> <li>• permeability and design loading rate (using soil texture);</li> <li>• pH;</li> <li>• rock fragments;</li> <li>• soil depth;</li> <li>• soil texture (field textural analysis);</li> <li>• watertable (depth to);</li> <li>• cation exchange capacity (CEC);</li> <li>• sodicity (Exchangeable Sodium Percentage ESP); and</li> </ul>	<input type="checkbox"/>	

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Report Element	Detailed Requirements	Completed
	<ul style="list-style-type: none"> <li>Sodium Absorption Ratio (SAR).</li> </ul> <p>Detailed explanation of the level of constraint with regards to DWM and recommended mitigation measures to overcome these constraints.</p> <p>Soil permeability testing conducted in situ for the soil within the available effluent management area as per constant head well permeameter method (AS/NZS 1547:2012) can be undertaken if desired, otherwise soil texture classification and application of effluent using the loading rates within the AS/NZS 1547:2012 is satisfactory.</p>	
	Detailed review of available published soils information for the site. Soil landscapes and different soil facets should be mapped on the Site Plan.	<input type="checkbox"/>
<b>3. Available Area and Setback Distances</b>	Calculation of available effluent management area and location on Site Plan.	<input type="checkbox"/>
	Discussion regarding the achievability of the applicable setback distances (Table 5 of the EPA Code of Practice 891.4 (2016)). Justification required.	<input type="checkbox"/>
<b>4. LCA Confirmation</b>	Contact Council if the LCA assessor disagrees with the final Sensitivity Rating for the site.	<input type="checkbox"/>
<b>5. Cumulative Impacts</b>	Using the desktop and site assessment information for the site, comment on any possible cumulative detrimental impacts that the development may have on beneficial uses of the surrounding land, surface water and groundwater.	<input type="checkbox"/>
<b>6. System Selection and Design</b>	Design maximum wastewater load (generation rates) and organic load for the proposed development.	<input type="checkbox"/>
	Description of existing system (if applicable).	<input type="checkbox"/>
	Target effluent treatment quality.	<input type="checkbox"/>
	Assess the capacity of the land to assimilate the treated wastewater based on the data collected and the total dissolved salts (TDS) in the potable water supply (see Section 2.3.4 and Appendix H of EPA Code of Practice 891.4 (2016)) for both levels of effluent quality, primary and secondary.	<input type="checkbox"/>
	Description and location of applicable DWM treatment system options (refer to the EPA website for list of currently approved systems).	<input type="checkbox"/>
	List of effluent land application options and detailed description of preferred option and location.	<input type="checkbox"/>
	Monthly water balance sizing the preferred effluent land application area. 70 <sup>th</sup> percentile climate data must be used for your location within the relevant Climate Zone, as detailed in Section 6.2.2 of Technical Document. A copy of the 70 <sup>th</sup> percentile climate data is attached in Appendix C of the Technical Document. All inputs, results and justification to be shown in the report.	<input type="checkbox"/>
<b>7. Mitigation Measures</b>	<p>Detailed discussion of mitigation measures to overcome any site or soil constraints posed to the sustainable treatment and application of wastewater on-site. This may include the following:</p> <ul style="list-style-type: none"> <li>Storm water management</li> <li>Soil amelioration; and</li> <li>Vegetation establishment and management.</li> </ul>	<input type="checkbox"/>
<b>8. Site Management Plan</b>	Description of ways to improve wastewater and DWM system performance for residents' reference.	<input type="checkbox"/>
	Operation and Management Plan.	<input type="checkbox"/>

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Report Element	Detailed Requirements	Completed
<b>9. Conclusion</b>	Conclusion summarising all the important design, sizing and mitigation requirements to ensure sustainable on-site DWM.	<input type="checkbox"/>
<b>10. Site Plan Requirements</b>	Site address, including lot number and street number.	<input type="checkbox"/>
	All title boundaries.	<input type="checkbox"/>
	All relevant zones and overlays and/or restrictions (e.g. Council zoning and overlays, including Environmental Significant Overlays and DWSCs).	<input type="checkbox"/>
	Type of catchment (i.e. potable or other special water supply catchment).	<input type="checkbox"/>
	North arrow.	<input type="checkbox"/>
	Location of groundwater bores.	<input type="checkbox"/>
	Contour lines (at maximum of 2m intervals), direction of slope and grade.	<input type="checkbox"/>
	Location of soil test pits or auger holes.	<input type="checkbox"/>
	Location of other utilities i.e. electricity, gas, telecommunications (which must be located outside the land application areas)	<input type="checkbox"/>
	Location of any significant site features e.g. rock outcrops or waterlogged regions.	<input type="checkbox"/>
	Location of intermittent and permanent surface waterways (dams, creeks, reservoirs and springs).	<input type="checkbox"/>
	Location of 1% and 5% Annual Exceedance Probability flood level contours lines (if applicable).	<input type="checkbox"/>
	Location, depth and specified use of groundwater bores on the site and adjacent properties from the register of the relevant Rural Water Corporation. Depth to groundwater table in winter (if less than 2.1m deep).	<input type="checkbox"/>
	Vegetation cover (can use aerial image as base map).	<input type="checkbox"/>
	Relevant setback distances as per Table 5 EPA Code of Practice 891.4 (2016).	<input type="checkbox"/>
	Location of existing and proposed buildings, sheds, driveways, paths and any other improvements.	<input type="checkbox"/>
	Available effluent management area(s).	<input type="checkbox"/>
	Location of proposed land application area (sized to scale).	<input type="checkbox"/>
	Location of proposed stormwater cut-off drains adjacent to the land application area.	<input type="checkbox"/>
	Location of proposed DWM system (nominal).	<input type="checkbox"/>
Location of reserve land application area (sized to scale).	<input type="checkbox"/>	
<b>11. Appendices</b>	Copy of the monthly water balance calculations.	<input type="checkbox"/>
	Figures.	<input type="checkbox"/>
	Site Plan.	<input type="checkbox"/>
	Soil bore logs for all test pits or auger holes.	<input type="checkbox"/>
	Certificate of Title (s) for lot (plan).	<input type="checkbox"/>
	Proposed building plans.	<input type="checkbox"/>
	Planning Permit application (where applicable).	<input type="checkbox"/>

**Table C3: Minimum Requirements for a Comprehensive LCA and Report**

Report Element	Comprehensive Requirements	Completed
<b>1. Introduction and Background</b>	Report summary/ executive summary.	<input type="checkbox"/>
	Confirmation of Sensitivity Rating.	<input type="checkbox"/>
	Confirmation of any relevant sensitivity overlays (e.g. landslip) as per communications with Council.	<input type="checkbox"/>
	Confirmation that lot(s) meets minimum lot size criteria for COS Planning Scheme Zone.	<input type="checkbox"/>
	Current land use and development overview (including occupancy); single lot, increase in building entitlements (subdivision) or non-domestic development.	<input type="checkbox"/>
	Name, contact details and qualifications (insurances) of LCA assessor (author).	<input type="checkbox"/>
	Site location (including address and lot details) and owner.	<input type="checkbox"/>
	Lot area.	<input type="checkbox"/>
	Proposed/existing water supply.	<input type="checkbox"/>
	Availability of sewer.	<input type="checkbox"/>
	Locality map showing the site in relation to surrounding region.	<input type="checkbox"/>
Site survey plan (2m contours) will need to be conducted by a qualified surveyor.	<input type="checkbox"/>	
<b>2. Site Inspection and Field Investigations</b>	Gather information on relevant Council, Water Corporation, Catchment Management Authority and State Government requirements, including restrictions and caveats on title, and planning/building/bushfire/flood controls, e.g. zones and overlays. Note Environmental Significant Overlays, potable water supply and DWSCs. Impose this information on a base map (or site plan) which shows their location with respect to title boundaries.	<input type="checkbox"/>
	Broad overview of locality and landscape characteristics that may pose a constraint to the sustainable application of wastewater on the Site and adjacent land, e.g. climatic information, groundwater and bore water information. (Refer to stage 3 pp.35 EPA Code of Practice 861.4 (2016)).	<input type="checkbox"/>
	Details of date, time and methodology of site inspection and field investigations.	<input type="checkbox"/>
	Site assessment that considers all of the parameters as per Table 1 of the Victorian LCA Framework (2014). Detailed explanation of the level of constraint with regards to DWM and recommended mitigation measures to overcome these constraints.	<input type="checkbox"/>
	Minimum of two soil test pits or auger holes within the identified available effluent management area with additional test pits required for more than one soil type (multiple soil landscapes or facets) as per the current EPA Code of Practice.	<input type="checkbox"/>
Soil assessment that considers all of the parameters in Table 2 of the Victorian LCA Framework (2014): <ul style="list-style-type: none"> <li>• colour and mottling;</li> <li>• electrical conductivity;</li> <li>• Emerson Aggregate Class;</li> <li>• permeability and design loading rate (using soil texture);</li> <li>• pH;</li> <li>• rock fragments;</li> <li>• soil depth;</li> <li>• soil texture (field textural analysis);</li> <li>• watertable (depth to);</li> <li>• cation exchange capacity (CEC); and</li> <li>• sodicity (Exchangeable Sodium Percentage ESP).</li> </ul>	<input type="checkbox"/>	

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Report Element	Comprehensive Requirements	Completed
	<p>Phosphorous Sorption Capacity is also required to be measured for the soil to which the effluent will be applied to.</p> <p>Detailed explanation of the level of constraint with regards to DWM and recommended mitigation measures to overcome these constraints.</p> <p>Soil permeability testing conducted in situ for the soil within the available effluent management area as per constant head well permeameter method (AS/NZS 1547:2012) must be undertaken to determine the sustainable daily effluent loading rates.</p>	
	Detailed review of available published soils information for the site. Soil landscapes and different soil facets should be mapped on the Site Plan.	<input type="checkbox"/>
<b>3. Available Area and Setback Distances</b>	Calculation of available effluent management area and location on Site Plan.	<input type="checkbox"/>
	Discussion regarding the achievability of the applicable setback distances (Table 5 of the EPA Code of Practice 891.4 (2016)). Justification required.	<input type="checkbox"/>
<b>4. LCA Confirmation</b>	Contact Council if the LCA assessor disagrees with the final Sensitivity Rating for the site.	<input type="checkbox"/>
<b>5. Cumulative Impacts</b>	Using the desktop and site assessment information for the site, comment on any possible cumulative detrimental impacts that the development may have on beneficial uses of the surrounding land, surface water and groundwater.	<input type="checkbox"/>
<b>6. System Selection and Design</b>	Design maximum wastewater load (generation rates) and organic load for the proposed development.	<input type="checkbox"/>
	Description of existing system (if applicable).	<input type="checkbox"/>
	Target effluent treatment quality.	<input type="checkbox"/>
	Assess the capacity of the land to assimilate the treated wastewater based on the data collected and the total dissolved salts (TDS) in the potable water supply (see Section 2.3.4 and Appendix H of EPA Code of Practice 891.4 (2016)) for both levels of effluent quality; primary and secondary.	<input type="checkbox"/>
	Description and location of applicable DWM treatment system options (refer to EPA website for list of currently approved systems).	<input type="checkbox"/>
	List of effluent land application options and detailed description of preferred option and location. Land application area to be sized on the most limiting balance as detailed below.	<input type="checkbox"/>
	<p>A water balance is required to size the preferred effluent land application area for the proposed development scenario.</p> <p>A monthly water balance using the prescribed 70<sup>th</sup> percentile climate data must be used for your location within the relevant Climate Zone, as detailed in Section 6.2.2 of the Technical Document. Alternately, a daily water balance model (i.e. MEDLI) using a minimum 30-year data period may be undertaken. A copy of the 70<sup>th</sup> percentile climate data is attached in Appendix C of the Technical Document.</p> <p>All inputs, results and justification to be shown in the report.</p>	<input type="checkbox"/>
	Undertake an annual nutrient balance (refer to pp.33 MAV (2014) for example methodology) for the proposed development scenario. All inputs, results and justification to be shown in the report.	<input type="checkbox"/>
	Prepare a site specific detailed hydraulic design for the land application area suitable for supplier quotation and construction.	<input type="checkbox"/>

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Report Element	Comprehensive Requirements	Completed
<b>7. Mitigation Measures</b>	Detailed discussion of mitigation measures to overcome any site or soil constraints posed to the sustainable treatment and application of wastewater on-site. This may include the following: <ul style="list-style-type: none"> <li>• Storm water management</li> <li>• Soil amelioration; and</li> <li>• Vegetation establishment and management.</li> </ul>	<input type="checkbox"/>
<b>8. Site Management Plan</b>	Description of ways to improve wastewater and DWM system performance for residents' reference.	<input type="checkbox"/>
	Operation and Management Plan.	<input type="checkbox"/>
<b>9. Conclusion</b>	Conclusion summarising all the important design, sizing and mitigation requirements to ensure sustainable on-site DWM.	<input type="checkbox"/>
<b>10. Site Plan Requirements</b>	Site address, including lot number and street number.	<input type="checkbox"/>
	All title boundaries.	<input type="checkbox"/>
	All relevant zones and overlays and/or restrictions (e.g. Council zoning and overlays, including Environmental Significant Overlays and DWSCs).	<input type="checkbox"/>
	Type of catchment (e.g. potable or other special water supply catchment).	<input type="checkbox"/>
	North arrow.	<input type="checkbox"/>
	Location of groundwater bores.	<input type="checkbox"/>
	Contour lines (2m intervals from survey plan or Council provided data), direction of slope and grade.	<input type="checkbox"/>
	Location of soil test pits or auger holes.	<input type="checkbox"/>
	Location of other utilities i.e. electricity, gas, telecommunications (which must be located outside the land application areas)	<input type="checkbox"/>
	Location of any significant site features e.g. rock outcrops or waterlogged regions.	<input type="checkbox"/>
	Location of intermittent and permanent surface waterways (dams, creeks, reservoirs and springs).	<input type="checkbox"/>
	Location of 1% and 5% Annual Exceedance Probability flood level contours lines (if applicable).	<input type="checkbox"/>
	Location, depth and specified use of groundwater bores on the site and adjacent properties from the register of the relevant Rural Water Corporation. Depth to groundwater table in winter (if less than 2.1m deep).	<input type="checkbox"/>
	Vegetation cover (can use aerial image as base map).	<input type="checkbox"/>
	Relevant setback distances as per Table 5 EPA Code of Practice 891.4 (2016).	<input type="checkbox"/>
	Location of existing and proposed buildings, sheds, driveways, paths and any other improvements.	<input type="checkbox"/>
	Available effluent management area(s).	<input type="checkbox"/>
	Location of proposed land application area (sized to scale).	<input type="checkbox"/>
	Location of proposed stormwater cut-off drains adjacent to the land application area.	<input type="checkbox"/>
	Location of proposed DWM system (nominal).	<input type="checkbox"/>
Location of reserve land application area (sized to scale).	<input type="checkbox"/>	
<b>11. Appendices</b>	Copy of the water (hydraulic) balance calculations.	<input type="checkbox"/>
	Copy of the nutrient balance calculations.	<input type="checkbox"/>
	Figures.	<input type="checkbox"/>
	Site Plan.	<input type="checkbox"/>

## Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

<b>Report Element</b>	<b>Comprehensive Requirements</b>	<b>Completed</b>
	Soil bore logs for all test pits or auger holes.	<input type="checkbox"/>
	Copy of the Survey Plan.	<input type="checkbox"/>
	Certificate of Title(s) for lot (plan).	<input type="checkbox"/>
	Proposed building plans.	<input type="checkbox"/>
	Planning Permit application (where applicable).	<input type="checkbox"/>

FOR ADOPTION

**Appendix D**

**Example System Inspection Pro-forma**

FOR ADOPTION



Colac Otway Shire Domestic Wastewater Management Plan – Operational Plan

Date & Time of Inspection		GPS Coordinates of LAA		
Property Address	South	East	Aspect:	Aspect:
Property Owners/Contact	Owner Present			
Inspected By	Yes	No		
<b>Inspection Protocol</b>				
<b>Risk Rating</b>	Low (1)	Medium (2)	High (3)	Upgrades Required / Comments
<b>Treatment System</b>				
<b>Grease Trap</b>				
Is Grease trap adequately sized, maintained and functioning?	Yes	No		
<b>Greywater</b>				
Is greywater directed to street/drain?	No		Yes	
If fitted, is greywater diversion device operating correctly?	Yes	No	No	
<b>Septic Tank</b>				
Is the tank(s) accessible for inspection and maintenance?	Yes	No		
Do the tank(s) and lid(s) appear structurally sound?	Yes		No	
Is the tank(s) adequately sealed?	Yes		No	
Is the tank area subject to stormwater or groundwater inundation?	No		Yes	
Do any tank(s) require urgent repair or replacement?	No		Yes	
Tank dimensions:				
Type	Plastic	Concrete	Other:	
Volume (L)				
Baffle?	Yes	No	Damaged	Damaged
Outlet height (mm)				
Liquid height (mm)				
Scum Depth (mm)				
Sludge Depth (mm)				
Operation:				
Are Both T pieces (junctions) attached and working?	Yes	No		
Does the tank require desludging?	No	Yes		
Is septic tank providing adequate anaerobic treatment?	Yes	No	No	
<b>Pump/pump wells/controls</b>				
Is the pumpwell(s) of adequate capacity (e.g. emergency storage)?	Yes	No		
Is the system fitted with a high level alarm?	Yes		No	
Are there any electrical hazards / issues with the system?	No		Yes	
Is there a suitable control system for the pump?	Yes	No		
Is the pump operational and in a satisfactory condition?	Yes	No	No	
Is pump well in satisfactory condition? (Yes - Low, No - Medium or High)	Yes	No	No	
<b>AWTS</b>				
Is the AWTS operating satisfactorily? (Yes - Low, No - Medium or High)	Yes	No	No	
Are the blowers working?	Yes	No		
Is there sludge or scum accumulation in aeration chamber, clarification chamber or irrigation chamber?	No	Yes	Yes	
Is the chlorine dispenser filled and functioning?	Yes	No	No	
Residual Chlorine (mg/L)				
Is system regularly serviced by a contractor?	Yes	No	No	
<b>Land Application Area</b>				
<b>Absorption Trenches/Beds</b>				
Dimensions (m)	Slope (%) approx.	8-12%	>12%	
Is the land application area of adequate size?	Yes	No	No	
Is there a suitable vegetation cover over the land application area?	Yes	No	No	
Is there adequate exposure of the land application area? (i.e. not too shaded, or southerly aspect?)	Yes	No		
Is the land application area wet or boggy?	No	Yes	Yes	
Is there evidence of surface ponding or runoff from the land application area?	No	Yes	Yes	
Is the area prone to poor drainage, flooding or high groundwater?	No	Yes	Yes	
Are there any damaged or collapsed sections of the land application area?	No	Yes	Yes	
Is there evidence of or access for vehicle and animal traffic?	No	Yes		
Does the land application area appear to be level and in line with contours?	Yes	No	No	
Are buffer distances to trenches/beds adequate?	Yes	No	No	
<b>Surface/Subsurface Irrigation</b>				
Dimensions (m <sup>2</sup> )	Slope (%) approx.			
Is the land application area wet or boggy?	No	Yes	Yes	
Is there evidence of surface ponding or runoff from the land application area?	No	Yes	Yes	
Are buffer distances to irrigation area adequate?	Yes	No	No	
Are all sprinklers working?	Yes	No	No	
<b>Overall Assessment</b>				
Were you able to locate and access the whole system?	Yes	No	No	
Was the system discharging effluent to the ground surface in an unsatisfactory manner?	Yes	No	No	
General Condition of system	Good (Low) Satisfactory (Medium) Unsatisfactory (Hi)	Satisfactory	Unsatisfactory	
Proximity to Sensitive environments (streams, rivers)	>100m	50-100m	<50m	
Located within a drinking water catchment? Y/N Distance to reservoir/stream:				
<b>Overall Highest Risk Rating</b>				
Are works required on the system?	Minor	Moderate	Major	Nil
<b>Details of Required Works</b>				



# Whitehead & Associates

## Environmental Consultants

197 Main Road Cardiff NSW 2285 Australia  
Telephone +61 2 4954 4996  
Email [mail@whiteheadenvironmental.com.au](mailto:mail@whiteheadenvironmental.com.au)

# Colac Otway Shire Council

## Domestic Wastewater Management Plan

### Technical Document

**December 2021**

Prepared for: Colac Otway Shire Council

Prepared by: Jasmin Kable  
Whitehead & Associates Environmental Consultants Pty Ltd  
197 Main Road  
CARDIFF  
NSW 2285

Telephone: 02 4954 4996  
Email: [jasminkable@whiteheadenvironmental.com.au](mailto:jasminkable@whiteheadenvironmental.com.au)

---

Whitehead & Associates Environmental Consultants

i

## Document Control Sheet

Document and Project Details					
<b>Document Title:</b>	Colac Otway Shire Council Domestic Wastewater Management Plan				
<b>Author:</b>	Jasmin Kable				
<b>Project Manager:</b>	Mark Saunders				
<b>Date of Issue:</b>	20/12/2021				
<b>Job Reference:</b>	1307 COS Review DWMP_Technical Document_011.docx				
<b>Synopsis:</b>	This document has been developed to accompany and direct the Operational Plan (revised 2015) to assist with detailed assessment of lots within the Shire to accommodate wastewater on-site. Together, both documents form the Domestic Wastewater Management Plan (DWMP). It provides additional detail and guidance on the relevant background documents (codes, policies, plans, legislation, regulations and standards) and the various constraints which impact upon or, is impacted upon, by domestic wastewater management (DWM) in the Shire.				
Client Details					
<b>Client:</b>	Colac Otway Shire Council				
<b>Primary Contact:</b>	James McDonald, Health Protection Coordinator Telephone (03) 5232 9558				
Document Distribution					
Version Number	Date	Status	DISTRIBUTION – NUMBER OF COPIES (p – print copy; e – electronic copy)		
			Client	Other	Other
001	30/01/15	DRAFT	1e	-	-
003	22/04/15	Revised DRAFT	1e		
004	30/04/15	Revised DRAFT	1e		
005	10/06/15	Revised DRAFT	1e		
006	02/07/15	FINAL	1e		
007	14/07/15	FINAL	1e		
008	04/11/15	FINAL	1e, 3p		
009	08/05/18	Review	1e		
010	01/09/21	Review DRAFT	1e		
011	20/12/21	Review	1e		
Document Verification					
<b>Checked by:</b> Mark Saunders			<b>Issued by:</b> Jasmin Kable		

## Disclaimer

The information contained in this report is based on independent research undertaken by Whitehead & Associates Environmental Consultants Pty Ltd (W&A). To our knowledge, it does not contain any false, misleading or incomplete information. Recommendations are based on an appraisal of site conditions subject to the limited scope and resources available for this project, and follow relevant industry standards. The work performed by W&A included a limited system audit and site and soil investigation in addition to a desktop review, and the conclusions made in this report are based on the information gained and the assumptions as outlined. Under no circumstances, can it be considered that these results represent the actual conditions throughout the entire Shire due to the regional scale of this study.

## Copyright Note

© Whitehead & Associates Environmental Consultants Pty Ltd, 2021.

This report and accompanying plans were prepared for the exclusive use of Colac Otway Shire Council (the “Client”). No extract of text of this document may be reproduced, stored or transmitted in any form without the prior consent of Whitehead & Associates. Plans accompanying this document may not be reproduced, stored or transmitted in any form unless this copyright note is included.

## Document Certification

This Domestic Wastewater Management Plan has been prepared following the standards and guidelines set out in the following documents, where applicable:

- EPA Victoria (2016) 891.4 Code of Practice – *Onsite Wastewater Management*;
- Department of Sustainability and Environment (2012) *Planning permit applications in open, potable water supply catchment areas*;
- EPA Victoria (2018) *State Environmental Protection Policy: Waters of Victoria*;
- Municipal Association of Victoria (2014) *Victoria Land Capability Assessment Framework*, 2<sup>nd</sup> Ed; and
- AS/NZS 1547:2012 *On-site Domestic Wastewater Management* (Standards Australia/ Standards New Zealand, 2012).

To our knowledge, it does not contain any false, misleading or incomplete information. Recommendations are based on an honest appraisal of the sites’ opportunities and constraints, subject to the limited scope and resources available for this project.

## Supporting Author

Supporting technical contribution for this document was provided by Dr. Robert Van de Graaff (van de Graaff and Associates). Dr. Van de Graaff undertook detailed (field) soil investigation and has provided primary soil data and interpretation which has been utilised in the development of the methodology outlined in this document.

## Table of Contents

<b>Acronyms</b> .....	<b>6</b>
<b>1 Introduction</b> .....	<b>7</b>
<b>2 Council Policies and Plans</b> .....	<b>7</b>
<b>2.1 Council Plan 2021 – 2025</b> .....	<b>7</b>
<b>2.2 Municipal Public Health and Wellbeing Plan 2021 – 2025</b> .....	<b>8</b>
<b>2.3 Colac Otway Planning Scheme</b> .....	<b>8</b>
<b>2.4 Environment Strategy 2010 – 2018</b> .....	<b>8</b>
<b>2.5 Environment Action Plan 2013 – 2015</b> .....	<b>9</b>
<b>2.6 Rural Living Strategy 2011</b> .....	<b>9</b>
<b>2.7 Council Budget</b> .....	<b>9</b>
<b>3 Legislation and Regulation</b> .....	<b>10</b>
<b>3.1 Legislation</b> .....	<b>10</b>
3.1.1 Local Government Act 2020 .....	10
3.1.2 Environment Protection Act 2017 .....	10
3.1.3 Water Act 1989.....	11
3.1.4 <i>Safe Drinking Water Act 2003</i> and Regulation 2005 .....	11
3.1.5 Planning and Environment Act 1987 .....	11
3.1.6 Public Health and Wellbeing Act 2008.....	12
3.1.7 State Environmental Protection Policy (Waters) 2018.....	12
3.1.8 State Environmental Protection Policy Waters of Victoria .....	12
3.1.9 State Environmental Protection Policy Groundwaters of Victoria .....	13
3.1.10 <i>Catchment and Land Protection Act 1994</i> .....	13
3.1.11 Victorian Building Regulations 2018 .....	13
<b>3.2 Regulatory Authorities</b> .....	<b>14</b>
3.2.1 Council (Colac Otway Shire Council).....	14
3.2.2 Environment Protection Authority Victoria (EPA).....	14
3.2.3 Victorian Building Authority.....	15
3.2.4 Municipal Association of Victoria (MAV) .....	15
3.2.5 Water Corporations .....	16
3.2.6 Department of Environment, Land, Water and Planning .....	16
3.2.7 Catchment Management Authority .....	16
<b>3.3 Administrative Authorities</b> .....	<b>17</b>
<b>3.4 Standards and Guidelines</b> .....	<b>17</b>
3.4.1 EPA Code of Practice – On-site Wastewater Management.....	17

3.4.2	Model Land Capability Assessment (2014) .....	17
3.4.3	Land Capability Assessment (2003) .....	17
3.4.4	AS/NZS 1547:2012 On-site Domestic Wastewater Management .....	17
3.4.5	AS/NZS 1546.1-4 On-site Domestic Wastewater Treatment Units.....	17
3.4.6	AS/NZS 3500.1-4:2021 Plumbing and Drainage .....	18
3.4.7	Guidelines for Development in Flood Affected Areas (DELWP, 2019) .....	18
3.4.8	Auditor General of Victoria (2006) Protecting our environment and community from failing septic tanks.....	18
<b>4</b>	<b>Overview of DWM in Colac Otway Shire .....</b>	<b>20</b>
<b>4.1</b>	<b>The Local Environment .....</b>	<b>20</b>
4.1.1	Declared Water Supply Catchments.....	20
4.1.2	Soils.....	20
4.1.3	Climate .....	21
4.1.4	Bushfire .....	21
<b>4.2</b>	<b>DWM Systems and Trends in Colac Otway Shire .....</b>	<b>21</b>
<b>4.3</b>	<b>DWM System Inspections in Drinking Water Catchments.....</b>	<b>24</b>
4.3.1	Wastewater Treatment Systems .....	24
4.3.2	Effluent Disposal Systems.....	25
<b>5</b>	<b>Preliminary Data Collection (Stage 1) .....</b>	<b>26</b>
<b>5.1</b>	<b>Data Acquisition .....</b>	<b>26</b>
<b>5.2</b>	<b>Property (Parcel) Characterisation .....</b>	<b>26</b>
<b>6</b>	<b>GIS Data Analysis (Stage 2) .....</b>	<b>28</b>
<b>6.1</b>	<b>Domestic Wastewater Management Constraints.....</b>	<b>28</b>
<b>6.2</b>	<b>DWM Constraint Mapping .....</b>	<b>28</b>
6.2.1	Constraint Classification Framework .....	28
6.2.2	Climate .....	29
6.2.3	Useable Lot Area.....	37
6.2.3.1	Proximity to Surface Waters.....	38
6.2.3.2	Proximity to Groundwater Bores .....	41
6.2.3.3	Land Subject to Inundation .....	42
6.2.3.4	Useable Lot Area Analysis .....	42
6.2.4	Current Planning Scheme Zone - Minimum Lot Size Compliance .....	46
6.2.5	Slope .....	50
6.2.6	Soil Suitability .....	54
<b>6.3</b>	<b>Sensitivity Overlay.....</b>	<b>63</b>
6.3.1	Landslip Hazard .....	63
6.3.2	Groundwater Depth .....	63

6.3.3	Vegetation .....	64
<b>6.4</b>	<b>Risk Assessment Summary.....</b>	<b>65</b>
<b>7</b>	<b>Land Application System Sizing Tables (Water Balance).....</b>	<b>66</b>
7.1	Overview.....	66
7.2	Water Balance Methodology.....	66
7.3	Water Balance Inputs .....	67
7.3.1	Daily Wastewater Load.....	67
7.3.2	Climate Data.....	68
7.3.3	Runoff Factor.....	68
7.3.4	Soil Type and Design Loading Rate or Design Irrigation Rate (DLR or DIR)....	68
7.4	Implications for High Rainfall Areas .....	69
7.5	Footprint Area of Land Application Systems.....	73
<b>8</b>	<b>Sub-catchment Analysis .....</b>	<b>74</b>
<b>9</b>	<b>Glossary of Terms.....</b>	<b>77</b>
<b>10</b>	<b>References .....</b>	<b>78</b>
<b>Appendix A</b>	<b>Informative Maps .....</b>	<b>80</b>
<b>Appendix B</b>	<b>Locality Reports.....</b>	<b>89</b>
<b>A.</b>	<b>Alvie Locality Report .....</b>	<b>90</b>
<b>B.</b>	<b>Barham River Catchment (Apollo Bay) Locality Report .....</b>	<b>97</b>
<b>C.</b>	<b>Barongarook Locality Report.....</b>	<b>104</b>
<b>D.</b>	<b>Barwon Downs Locality Report .....</b>	<b>111</b>
<b>E.</b>	<b>Beeac Locality Report .....</b>	<b>119</b>
<b>F.</b>	<b>Beech Forest Locality Report .....</b>	<b>126</b>
<b>G.</b>	<b>Carlisle River Locality Report .....</b>	<b>134</b>
<b>H.</b>	<b>Coragulac Locality Report .....</b>	<b>142</b>
<b>I.</b>	<b>Cororooke Locality Report.....</b>	<b>148</b>
<b>J.</b>	<b>Forrest Locality Report.....</b>	<b>155</b>
<b>K.</b>	<b>Gellibrand Locality Report .....</b>	<b>162</b>
<b>L.</b>	<b>Kawarren Locality Report.....</b>	<b>170</b>
<b>M.</b>	<b>Kennett River Locality Report.....</b>	<b>178</b>
<b>N.</b>	<b>Lavers Hill Locality Report.....</b>	<b>185</b>
<b>O.</b>	<b>Wye River and Separation Creek Locality Report .....</b>	<b>194</b>
<b>Appendix C</b>	<b>Acceptable Monthly Climate Data .....</b>	<b>201</b>

## List of Figures

Figure 1: 70th Percentile Rainfall Distribution - Shire .....	33
Figure 2: Total Number of Wet Months Distribution - Shire.....	34
Figure 3: Climate Zones Distribution - Shire .....	35
Figure 4: Total Number of Consecutive Wet Months Distribution - Shire .....	36
Figure 5: Corangamite CMA Declared Water Supply Catchments (DEPI, 2012) ....	40
Figure 6: DWM Constraint Analysis - Useable Lot Area - Shire .....	45
Figure 7: Minimum Lot Size Zoning Requirements - Shire .....	49
Figure 8: Surface Elevation Digital Elevation Model - Shire .....	52
Figure 9: DWM Constraint Analysis - Average Lot Slope - Shire .....	53
Figure 10: Surface Geology – Shire .....	55
Figure 11: Soil Landform Units - Shire .....	56
Figure 12: DWM Constraint Analysis - Soil Suitability - Shire .....	62
Figure 13: Delineated Sub-catchments within DWSCs .....	75
Figure 14: Sub-catchment and Associated Sensitivity Analysis within DWSCs ...	76

## List of Tables

Table 1: DWM System Types .....	23
Table 2: Land Application Methods .....	24
Table 3: Rationale for DWM Constraint Ratings .....	29
Table 4: Climate Zones Constraint Map Summary .....	32
Table 5: Useable Lot Area Constraint Map Summary .....	44
Table 6: Current Planning Scheme Zone - Minimum Lot Size Compliance .....	48
Table 7: Average Lot Slope Constraint Map Summary .....	51
Table 8: Soil Suitability Constraint Classification Criteria .....	60
Table 9: Soil Suitability Constraint Map Summary .....	61
Table 10a: 180L/p/day - Design Wastewater Loads for Water Balance Modelling .	68
Table 10b: 150L/p/day - Design Wastewater Loads for Water Balance Modelling .	68
Table 10c: 120L/p/day - Design Wastewater Loads for Water Balance Modelling .	68



## Acronyms

AEP	Annual Exceedance Probability
ARI	Annual Recurrence Interval
AHD	Australian Height Datum
AWTS	Aerated Wastewater Treatment System
CMA	Catchment Management Authority
CA	Certificate of Approval
COS	Colac Otway Shire Council
DEM	Digital Elevation Model
DEPI	Department of Environment and Primary Industries (now known as DELWP)
DELWP	Department of Environment, Land, Water and Planning
DIR	Design Irrigation Rate
DLR	Design Loading Rate
DSE	Department of Sustainability and the Environment (former)
DSM	Decentralised Sewage Model
DWM	Domestic Wastewater Management
DWMP	Domestic Wastewater Management Plan
DWSC	Declared Water Supply Catchment
EPA	Environment Protection Authority
GIS	Geographic Information System
GMA	Groundwater Management Area
HPO	Health Protection Officer
LAA	Land Application Area
LCA	Land Capability Assessment
LGA	Local Government Area
LPED	Low-Pressure Effluent Distribution System
LRA	Land Resource Assessment
MAV	Municipal Association of Victoria
PIC	Plumbing Industry Commission
SEPP	State Environment Protection Policy
SILO	Scientific Information for Land Owners
VCAT	Victorian Civil and Administrative Tribunal
VVG	Visualising Victoria's Groundwater (Project)
WC	Water Corporation(s)
WMIS	Water Measurement Information System
WSPAs	Water Supply Protection Area(s)

## 1 Introduction

This document forms the Domestic Wastewater Management Plan (DWMP) together with the Operational Plan (2015), and has been prepared in order to assist with the detailed assessment of unsewered (developed and undeveloped) lots in the Colac Otway Shire municipal area (COS or “the Shire”). It provides additional detail and guidance on relevant background documents (codes, policies, plans, legislation, regulations and standards), an overview of on-site domestic wastewater management (DWM) within COS, the various constraints which impact upon or are impacted by on-site DWM, system sizing tables and DWM sensitivity analysis for locality and town/settlement prioritisation. The document also provides guidance for sustainable development in unsewered areas as detailed in the individual Locality Reports.

The amended *Environment Protection Act 2017* and *Regulations 2021* provide a foundation for a transformation of Victoria’s environment protection laws and EPA. It includes a new approach for the prevention of harm under ‘General Environmental Duty’ (GED). There will be inherent changes to the way wastewater is managed in Victoria over the next few years, with the repeal or amendment of the SEPP (Waters) 2018 yet to be determined in light of the amended *Environment Protection Act 2017*.

## 2 Council Policies and Plans

The DWMP has been developed to complement other Council policies and plans through the actions identified in the Operational Plan. The following is a brief outline of the various Council plans which have been included in the development of this DWMP.

### 2.1 Council Plan 2021 – 2025

Council’s Vision Statement applies to all Council policies including the DWMP. The Strategic Vision of COS is:

“By 2050, Colac Otway Shire will be a destination where people come to appreciate our unique and diverse environment and friendly communities. We value the wisdom of this land’s first caretakers, the Gulidjan and Gadabanud peoples, and recognise all those who have cared for the land since. We work to preserve what makes our place special. We focus on environmental sustainability to protect our precious natural assets. We are a proud and resilient community that values our welcoming spirit. We embrace new people, new business, new ideas. Our region is a great place to learn, live, work and play” (COS, 2050)

The Vision and Mission statements will be achieved with the Council Plan structured around four key themes:

1. Valuing our natural and built environment – we mitigate impacts to people and property arising from climate change; we operate sustainably with a reduced carbon footprint; protect and enhance the natural environment; we will satisfy our community’s reasonable expectations to reduce waste going to landfill, increase resource recovery and minimise waste charges; and provide and maintain an attractive and safe built environment;
2. Strong and resilient economy – affordable and available housing will support our growing community and economy; attract, retain and grow business in our Shire; key infrastructure investment supports our economy and liveability; Colac Otway Shire is a destination to visit; grow the Colac Otway Shire’s permanent population by at least 1.5%;

3. Healthy, inclusive and connected community – all people have opportunity to achieve and thrive our Shire; people are active and socially connected through engaging quality spaces and places; we are safe, equitable and inclusive community; and
4. Strong leadership and management – we commit to a program of best practice and continuous improvement; we are a financially robust organisation; we provide exceptional customer service; and we support and invest in our people.

The Council Plan outlines outcomes which must be achieved in line with the key values; these outcomes will be aligned with the DWMP.

## **2.2 Municipal Public Health and Wellbeing Plan 2021 – 2025**

The Colac Otway Shire Municipal Public Health and Wellbeing Plan has now been incorporated into the Council Plan 2021-2025 and it aims to enhance the health and wellbeing of the residents of COS. The main priorities in this plan are categorised into the following themes: improving mental health and wellbeing, gender equity, increasing active living, tackling climate change and its impact on health, and preventing all forms of violence.

## **2.3 Colac Otway Planning Scheme**

The Colac Otway Planning Scheme, approved under the *Planning and Environment Act 1987*, sets out planning policies for the municipality, and contains information about zones, overlays and other provisions which affect how land can be used and developed in COS. It identifies triggers for planning permit applications, and outlines application requirements and decision guidelines for the use, subdivision and development of land in the different zones.

On land where DWM is required, a planning application may need supporting information such as a Land Capability Assessment (LCA) to show that the lot can accommodate a DWM system. Almost all applications within DWSCs must be referred to the relevant Water Corporation (WC). If the WC objects to the application, it must be refused by Council.

Under Section 173 of the *Planning and Environment Act 1987*, Council can enter into a legal agreement with the owner of land in its municipality, with the agreement binding the owner to the covenants specified in the agreement. Such S173 agreements can be used to prohibit, restrict or regulate the use of land, or can relate to conditions subject to which the land may be used or developed for specified purposes. A Planning Permit condition can require the owner to enter such a legal agreement, which is subsequently registered on the title of the property. Such a legal agreement may be required by Council or the WC's when planning applications are located within a DWSCs. In such cases, the Section 173 agreements often contain maintenance requirements for DWM systems, which on the sale of a property, transfer to an incoming owner.

## **2.4 Environment Strategy 2010 – 2018**

The Colac Otway Shire Environment Strategy aims to protect and enhance the environment, promote sustainable use of natural resources, strengthen partnerships with key stakeholders and build community capacity through environmental education and awareness raising programmes. The Strategy is not an action plan, but does set targets and outline a process for identifying the actions that need to be undertaken in order to achieve the targets. The Strategy sets 41 targets for four (4) major areas: Council Managed Land; Planning and Regulations, Physical Works and General Services; and Education and Awareness Raising Programmes. Wastewater is addressed in the Planning and Regulations Targets 7 and 8;

- Implement recommendations in the COS Domestic Wastewater Management Plan, review the Plan's performance and renew by 2014; and
- Develop and implement standards for DWM systems near waterways and in water supply and ground water recharge areas by 2014.

## **2.5 Environment Action Plan 2013 – 2015**

The Environment Action Plan was developed from the adopted Environment Strategy (2010-2018) to form the basis of integrated action across all areas of the Shire's operations and are a further refinement of the targets as set out in the Strategy. The Action's specified in this Plan pertaining to DWM are the responsibility of the COS Public Health Unit.

Target 7 Action; implement an education program, and ensure monitoring and maintenance of Township DWM systems.

Target 8 Actions; investigate funding opportunities to develop a local standard for DWM systems near waterways, water supply and groundwater, and develop DWM standards for all areas near waterways, water supply and groundwater.

## **2.6 Rural Living Strategy 2011**

Council adopted a Rural Living Strategy in 2011 which considered the development potential of smaller towns/settlements in the municipality. The towns of Forrest, Birregurra, Beac, Alvie, Cororooke and Coragulac were all identified as having moderate growth potential. Gellibrand, Lavers Hill and Beech Forest had "deferred" growth potential due to potential bushfire and water catchment constraints.

## **2.7 Council Budget**

The Council Budget sets out finances for all Council projects and their management. To implement the DWMP, the Budget will need to provide scope for the management of the audit and inspection program required as part of the DWMP. The Budget currently allocates fees and charges for Septic Tank Permits. These fees and charges cover resources required to assess, discuss, permit the installation, inspect, and approve the use of new and modified systems. Council may need to consider options for implementing appropriate ongoing fees and charges for all unsewered properties to provide resources to undertake Actions and programs within the Operational Plan.

## 3 Legislation and Regulation

### 3.1 Legislation

#### 3.1.1 Local Government Act 2020

The *Local Government Act 2020* recently received Royal Assent on the 1989 Act and is the most ambitious reform in the local government sector in 30 years. The new act will improve local government democracy, accountability and service delivery for all Victorians. The *Local Environment Act 2020* outlines the provisions under which Council operates and empowers Councils to have local laws and regulations for DWM. The *Local Government Act 2020* empowers Council to enact local laws and set special charges for Council activities. Council can use these powers to develop local regulations for wastewater management, as long as these regulations are consistent with state policy and legislation and to raise revenue for its wastewater management programs.

#### 3.1.2 Environment Protection Act 2017

The Environment Protection Act 2017 replaced the superseded 1970 Act and has recently been amended and will come into force on 1 July 2021 (version 005). The Environment Protection Act is used to regulate DWM systems within Victoria. Council will be utilising the new EPA '*Regulating onsite wastewater management systems: local government toolkit*' (publication 1974: 2021) to assist them in regulating DWM systems within COS and adhering to the new Act.

The main change that the new Act brings is the prevention of harm, whereas the superseded 1970 Act focused on the consequences of harm. The pollution offences have been replaced by 'General Environmental Duty' (GED) which is the primary way that EPA will achieve a prevention to harm approach. GED is supported by new duties to notify EPA of certain pollution incidents and the duty to clean up after an incident, if it occurs. The GED makes it clear that it is the owner or authorised or unauthorised entities responsibility to reduce the risk to the environment. A delegation of functions and powers from EPA to Council under the new Act will allow for Council to take action under the GED.

The Act is supported by Regulations which provide criteria for Council to consider when assessing DWM permit applications and enforcement. The following sections outline the requirements specific to DWM within the proposed final Regulations:

- Part 3.3 – Permits (regulations 25 to 35);
- Part 5.7 – On-site Wastewater Management Systems (regulations 159 to 163);
- Part 8.4 – Permit fees (regulations 186 to 200); and
- Schedule 1 – Prescribed permission activities and fees.

Under the Regulations, Council will continue to administer permits for construction, installation, or alteration of a DWM system with a capacity up to 5,000L/day.

A new section has been incorporated into the proposed final Regulations, Part 5.7, for persons in management or control of land which a DWM system is located, including legacy systems that do not have a permit that were installed pre-1970 superseded Act. Persons have an obligation to take reasonable steps to maintain the DWM system in good working order, a duty to keep maintenance records, respond to any problems that arise, and notify Council of a failure and rectification steps.

As per Part 5.7 regulation 163, Council may order maintenance of a DWM system if they have received a notification under regulation 161(2), or has a reasonable belief that a DWM system poses, or may pose, a risk to human health or the environment or is not, or may not be, in good working order. Council will no longer be required to lodge a DWM report to the EPA at the end of each financial year.

### **3.1.3 Water Act 1989**

Section 183 of the *Water Act 1989*, provides a Water Corporation (WC) with the power to inspect and monitor existing septic tank systems within their sewerage district, and if the system does not comply with the *Environment Protection Act 2017* (as amended) and the *Public Health and Wellbeing Act 2008*, then the WC can require the owner to connect to the sewer where it is available under Section 147 of the *Act*.

### **3.1.4 Safe Drinking Water Act 2003 and Regulation 2005**

The *Safe Drinking Water Act 2003* and the associated Regulation 2005 requires a catchment to apply a multi-barrier approach to managing risks to water quality. This applies to both water suppliers and water storage managers, whom are required to:

- ensure that drinking water meets quality standards specified by the Regulators;
- prepare and implement a risk management plan;
- provide independent audits of their performance in implementing the plans;
- disclose various types of information relation to the quality of the drinking water they supply to the consumers; and
- report any known or suspected contamination of the drinking water to the Secretary of the Department of Health.

### **3.1.5 Planning and Environment Act 1987**

The *Planning and Environment Act 1987* is 'enabling' legislation, with more detailed planning matters dealt with by subordinate instruments under the Act, such as the Victorian Planning Provisions, planning schemes, regulations and Ministerial Directions. Key components of the planning framework established by the Act include:

- The system of planning schemes that sets out how the land may be used and developed;
- The VPP, which provide the template for the construction and layout of planning schemes;
- The procedures for preparing and amending the VPP and planning schemes;
- The procedures for obtaining planning permits under planning schemes; and
- The procedures for settling disputes, enforcing compliance with planning schemes and other administrative procedures.

Planning schemes set out how land may be used and developed, including the requirements for obtaining planning permits. Where domestic wastewater is required, a planning permit may need supporting information such as a Land Capability Assessment (LCA) to show that the development can accommodate a DWM system.

All applications within drinking water catchments must be referred to the applicable WC. If the referral authority objects to the application it must be refused by Council.

As noted in Section 2.3 above, Under Section 173 of the *Planning and Environment Act 1987*, Council can require the preparation of a legal agreement. These agreements are often requested by Council or the Water Authorities when planning applications are located within a Declared Water Supply Catchment (DWSC). The Section 173 agreements often contain maintenance requirements for DWM systems, which on the sale of a property transfer to an incoming owner.

### **3.1.6 Public Health and Wellbeing Act 2008**

The *Public Health & Wellbeing Act 2008* lists types of nuisances which may be dangerous to health or offensive; these nuisances include those arising from water or any matter which is dangerous to health or offensive, including wastewater. Council has a duty under this *Act* to remedy as far as is reasonably possible all nuisances arising in the Shire, and it is an offence to cause or allow a nuisance to occur. Under this *Act*, Council must investigate all complaints relating to a nuisance or the illegal management of domestic wastewater and take action to rectify the nuisance where necessary. This can include a direction from Council to the owner of a DWM system to cease to operate and/or upgrade their DWM system, by issuing a Prohibition Notice and/or an Improvement Notice to the owner.

### **3.1.7 State Environmental Protection Policy (Waters) 2018**

There have been recent legislative changes to the State Environment Protection Policy (Waters) of the *Environment Protection Act 1970*, with a recent Victorian Government Gazette (No. S 499) released on 23 October 2018, and Parliamentary Advice released by the Victorian Auditor-General's Office (VAGO) on 'Managing the Environmental Impacts of Domestic Wastewater' Sept 2018.

The SEPP (Waters) provides a regulatory framework for the protection and management of water quality in Victoria, covering surface waters, estuarine and marine waters and groundwaters across the state.

The SEPP (Waters) imposes increased responsibilities for Council in managing DWM, and continues to require a Schedule 5 referral to the Water Corporations if located within a Declared Water Supply Catchment (DWSC) as per the *Catchment and Land Protection Act 1994*, with approvals to be issued for permits in accordance with the Ministers Guidelines (2012). The responsible authorities must ensure that permits are consistent with guidance provided in the Code of Practice (publication 891.4, 2016).

### **3.1.8 State Environmental Protection Policy Waters of Victoria**

The SEPP Waters of Victoria provides a regulatory framework for the protection and management of surface water environments in Victoria. This SEPP has three main policy sections; beneficial uses, environmental quality objectives and attainment program. The SEPP aims to protect surface water for a number of reasons, including but not limited to, human consumption after appropriate treatment, human consumption of aquatic fauna, recreation, agriculture and aquaculture.

The discharge of domestic wastewater in a manner which could enter surface waters has the potential to impact on the use of the water for any of the beneficial uses described above. As such, the discharge of domestic wastewater must be in accordance with buffer distances outlined in the current EPA Code of Practice so as to minimise any potential negative impacts on surface waters.

Environmental quality objectives are used to indicate and measure if the beneficial uses are being protected. The use of water quality and biological indicators, flow measurement, sediment quality

and habitat indicators can be used in accordance with the policy to determine if the surface waters have been affected. The SEPP indicates the roles and responsibilities, and details actions and tools, for the protection of surface waters in Victoria.

This policy is used for assessing effluent disposal areas and in preparing LCAs. Clause 32 (b) allows EPA guidance and the current EPA Code of Practice to be mandatory. The policy requires regulatory authorities to assess the suitability of land with reference to EPA Publication 746.1 – Land Capability Assessment for On-site Wastewater Management and to ensure that permits comply with EPA Code of Practice and all EPA publications and bulletins.

There will be inherent changes to the way wastewater is managed in Victoria over the next few years, with the repeal or amendment of the SEPP (Waters) 2018 yet to be determined in light of the amended Environment Protection Act 2017.

### **3.1.9 State Environmental Protection Policy Groundwaters of Victoria**

The SEPP Groundwaters of Victoria currently provides a regulatory framework for the protection and management of groundwater environments in Victoria. The reuse of domestic wastewater on-site can impact on groundwater via deep drainage. Careful design of systems can ensure impacts are minimised so that groundwater resources are not affected. The SEPP indicates the roles and responsibilities, and details actions and tools, for the protection of ground waters in Victoria. This policy requires effluent disposal to be carried out so as to protect groundwater. The preparation of a LCA must consider the potential impact, if any, on local and regional groundwater resources.

### **3.1.10 Catchment and Land Protection Act 1994**

The *Catchment and Land Protection Act 1994* requires Catchment Management Authorities (CMAs) to prepare and implement a Regional Catchment Management Strategy, which includes:

- an assessment of long term requirements and the prioritisation of these requirements;
- identification of threats to environmental, economic and soil values; and
- identification of opportunities for improving natural resource management processes.

The Act empowers CMAs and defines their powers and functions. The developed Strategy influences and informs planning processes. DWSCs are declared under Schedule 5 of this Act, with planning applications referred to the relevant WA.

The Act also requires property owners to take reasonable steps to protect the catchment, with particular regards to water resources, avoid soil disturbance, weed growth and pests.

### **3.1.11 Victorian Building Regulations 2018**

Under Part 8 Division 2 of the Regulations (Building work in special areas), Regulation 132 (Septic tank systems) applies as follows:

(1) The report and consent of the relevant council must be obtained to an application for a building permit that requires:

- (a) the installation or alteration of a septic tank system; or
- (b) the construction of a building over an existing septic tank system.

(2) The report and consent of the relevant council need not be obtained to an application for a building permit referred to in sub-regulation (1) if a permit for the construction, installation or alteration of the septic tank system that is relevant to the application has been issued under Section 53M(5) of the *Environment Protection Act 2017* (as amended).



## 3.2 Regulatory Authorities

### 3.2.1 Council

Council is responsible for issuing permits for new DWM systems under the *Environment Protection Act 2017 (as amended)*. Council is also responsible for the management of all DWM systems within the Shire; this includes the inspection of existing systems and ensuring compliance with Council and EPA requirements. Council is responsible for all DWM systems generating <5,000L/day. The legal requirements of Council include:

- Council must issue a permit to install/alter before a DWM system can be installed;
- Application for a permit to install/alter must be completed by the owner/builder/installer and submitted to Council for assessment;
- A Council officer assesses application and plans and conducts site inspections. Further information may be requested from applicant;
- Permit to install issued with approved plan and conditions;
- System must comply with permit conditions and relevant EPA Certificate(s) of Approval;
- System is inspected by a Council officer during installation; and
- Council must issue a permit of use before the system can be used.

In addition, Council can enforce upgrades of systems which are failing and potentially causing human or environmental health impact. This is discussed further in the Operational Plan of the DWMP.

### 3.2.2 Environment Protection Authority Victoria (EPA)

EPA Victoria will continue to regulate under the *Environment Protection Act 2017 (as amended)* what types of DWM systems are approved for use. The new legislation took effect on 1 July 2021. DWM treatment system brands and models will need to be certified by an accredited conformity assessment body as conforming to the relevant Australian Standard. This accreditation will be given by the Joint Accreditation System of Australia and New Zealand or any other accreditation body approved by the Authority (assessment body). The assessment body must certify the treatment system as conforming to the relevant Australian and New Zealand Standard. The appropriate standards for the different types of treatment systems is as follows:

- Septic tanks (and vermiculture systems) – AS/NZS 1546.1:2008, on-site domestic wastewater treatment units, Part 1: Septic tanks.
- Waterless composting toilets – AS/NZS 1546.2:2008, on-site domestic wastewater treatment units, Part 2: Waterless composting toilets.
- Secondary treatment systems – AS/NZS 1546.3:2017, on-site domestic wastewater treatment units, Part 3: Secondary treatment systems.
- Sand filters – AS/NZS 1546.3:2017, on-site domestic wastewater treatment units, Part 3: Secondary treatment systems and s459 exemption applications for transitional arrangements.
- Domestic greywater system – AS/NZS 1546.3:2016, on-site domestic wastewater treatment units, Part 4: Domestic greywater treatment systems.

EPA holds a register of the DWM systems with valid Certificates of Conformance within Victoria ([www.epa.vic.gov.au/your-environment/water/onsite-wastewater](http://www.epa.vic.gov.au/your-environment/water/onsite-wastewater)). Transitional arrangements will also apply to previously issued certificates that had not expired by 1 July 2021. For innovative DWM systems, an exemption from these requirements may be granted to a permit applicant by EPA under section 459 of the Act.

As part of a permit application to Council, the applicant will need to include a copy of the certificate of conformity from a conformity assessment body.

The EPA has developed policies and Codes of Practice to regulate the use of DWM systems. These policies and codes include:

- SEPP Waters of Victoria;
- EPA 891.4 *Code of Practice – Onsite Wastewater Management*, 2016;
- EPA 746.1 *Land Capability Assessment – Onsite Wastewater Management*, 2003; and
- EPA 760 *Guidelines for Aerated Onsite Wastewater Treatment Systems*, 2002.

The EPA is responsible for the following activities related to wastewater management:

- Regulate the issuing of Certificates of Conformance for each DWM system type;
- Approval of commercial wastewater management systems with wastewater loading in the range of 5,000 – 100,000L/day (EPA Works Approval, as discussed in the Operational Plan will be replaced by development and operating licences unless an exemption applies);
- Licencing commercial wastewater management systems with wastewater loading above 100,000L/day, and systems which discharge effluent to surface waters (as discussed in the Operational Plan);
- Inspection of licenced commercial wastewater management systems and review of Annual Performance Statements for licenced commercial wastewater management systems;
- Compliance and enforcement activities for commercial wastewater systems;
- Developing policies and Codes of Practice;
- Provision of technical advice to Councils, owners and installers; and
- Possible referral authority for subdivisions.

### **3.2.3 Victorian Building Authority**

The Victorian Building Authority (VBSA):

- Licenses all plumbers, drainers and septic tank installers across Victoria; and
- Regulates the installation of all plumbing works including internal plumbing works on septic tank systems.

### **3.2.4 Municipal Association of Victoria (MAV)**

MAV has developed a model LCA report and procedures for undertaking a LCA, to assist land capability assessors and regulators. This has been developed in accordance with EPA Codes and AS/NZS 1547:2012.

### 3.2.5 Water Corporations

Water and sewerage services within COS are provided by Barwon Water, with water also supplied by Wannon Water to the Carlisle River town. This DWMP covers areas where reticulated sewer service is not provided by Barwon Water and, hence, are unsewered.

The WCs have interest in protecting the DWSCs which are susceptible to impact from DWM systems. Both Barwon Water and Wannon Water are statutory referral authorities under the *Planning and Environment Act 1987* for planning applications in the DWSCs within the southern region of the Shire. Where specified development or subdivision is proposed within a DWSC, the proposal must be referred to the relevant WC for assessment prior to Council issuing a planning permit. There are two types of referral authorities – a determining referral authority, which has the power to require a permit application to be refused or for certain conditions to be included in a permit, and a recommending referral authority, which can only comment on an application. Responsible authorities must consider the comments made by a recommending authority, but are not obliged to refuse the application or to include any conditions required by the authority. However, a recommending referral authority is able to seek a review at VCAT if it objects or it requests conditions that are not included by the responsible authority in the permit.

Clause 66 of the COS Planning Scheme identifies which authorities are determining authorities and which are recommending authorities. The schedule to Clause 66.04 of the COS Planning Scheme lists Barwon Water and Wannon Water (Water Authorities) as determining referral authorities in the DWSC areas along with Southern Rural Water within the Warrion Water Supply Protection Area. Corangamite CMA is the only recommending authority listed.

Where existing DWM systems are located in an area that has sewer available, the WC can require the property be connected to sewer if the system is found to be causing a health or environmental risk.

### 3.2.6 Department of Environment, Land, Water and Planning

The Department of Environment, Land, Water and Planning (DELWP) (formerly known as the Department of Environment and Primary Industries and Department of Sustainability and Environment) is responsible for the management of water resources, climate change, bushfires, public land, forests and ecosystems in Victoria. DELWP may be consulted by Council for specialist advice where a DWM system may impact on land or water resources.

### 3.2.7 Catchment Management Authority

COS falls within the Corangamite Catchment Management Authority (CMA) and has a large catchment area for a number of different water resources. Where DWM systems exist within sensitive catchments, close examination of a system, its operation and performance must be undertaken to ensure the protection of the asset. The CMA has policies and management tools to assist with the management of the waterways. The role of the CMA is:

- To ensure the sustainable development of natural resource based industries;
- To maintain and where possible, improve the quality of land and water resources;
- To conserve natural and cultural heritage;
- To involve the community in decisions relating to natural resource management within their region;
- To advise on matters relating to catchment management and land protection and the condition of land and water resources in the region; and

- To promote community awareness and understanding of the importance of land and water resources, their suitable use, conservation and rehabilitation.

### **3.3 Administrative Authorities**

The Victorian Civil and Administrative Tribunal (VCAT) is a tribunal at which civil disputes, administrative decisions and appeals can be heard before a Judge or Tribunal Member. It provides a dispute resolution service for both government and individuals within Victoria.

In past cases throughout Victoria, VCAT has questioned the quality of LCAs for DWM, particularly where a site is located within a DWSC. VCAT has also questioned the rigour of some Council's evaluation of these LCAs, and how the minimum development guideline of 1 dwelling per 40 hectares should be applied in the DWSC.

### **3.4 Standards and Guidelines**

#### **3.4.1 EPA Code of Practice – On-site Wastewater Management**

The EPA Code of Practice On-site Wastewater Management Publication 891.4 (EPA, 2016) outlines the measures which are required to sustainably manage household wastewater so as to minimise public health and environmental impacts. This Code is not limited to DWM systems; it also applies to systems at other premises including small scale commercial systems. The Code outlines planning requirements, system selection and system maintenance following installation.

#### **3.4.2 Model Land Capability Assessment (2014)**

The Municipal Association of Victoria Model Land Capability Assessment (2014) was revised to reflect the requirements of the current EPA Code of Practice and also provides further details on in-soil effluent assimilation processes and their influence on system design.

#### **3.4.3 Land Capability Assessment (2003)**

The Land Capability Assessment On-site Wastewater Management Publication 746.1 (2003) outlines the process to be undertaken when assessing a site for its suitability for DWM. An LCA must be conducted by a suitably qualified consultant experienced in on-site domestic wastewater land capability. Land capability assessors should follow the conservative and 'best practice' Model LCA Report (MAV, 2014). Council's role is to assess the land capability and risk assessment report, flow rates, land application calculations and design; it is not part of Council's role to undertake the calculations or design the land application system for the property owner.

#### **3.4.4 AS/NZS 1547:2012 On-site Domestic Wastewater Management**

AS/NZS 1547:2012 provides standardised guidance for the sizing, design and construction of Land Application Areas (LAAs). If there is an inconsistency between the Australian Standard (2012) and the current EPA Code of Practice, the Code takes precedence. Where the current EPA Code of Practice is silent on a topic, the relevant Australian Standard (2012) should be followed.

The Standard will be used to inform the selection of a suitable land application system, and where the standard sizing tables are not used, will inform the sizing of land application systems.

#### **3.4.5 AS/NZS 1546.1-4 On-site Domestic Wastewater Treatment Units**

*AS/NZS 1546.1:2008- Part 1: Septic tanks*

Specifies performance requirements and performance criteria for septic tanks, technical means of compliance and provides test specifications that enable septic tanks to be manufactured to comply with the performance requirements and performance criteria.

*AS/NZS 1546.2:2008 – Part 2: Waterless composting toilets*

Aims to: 1. Provide a set of performance statements that form a base against which any waterless composting toilet, conventional or innovative, may be assessed. 2. Provide manufacturers of waterless composting toilets with a performance evaluation test that will confirm the conditions under which it will function best (this will enable certification bodies to check that a product conforms to the Standard). 3. Ensure that the operation and maintenance of a waterless composting toilet is done in a safe manner that meets basic health requirements given that it involves the removal or composted or partially composted material.

*AS/NZS 1546.3:2017 – Part 3: Secondary treatment systems*

Sets out the requirements for the design, commissioning, performance and compliance testing of secondary treatment systems and advanced secondary treatment systems designed to treat domestic wastewater up to 5,000L/day. Guidance on installation, operation and maintenance is also provided.

*AS/NZS 1546.4:2016 – Part 4: Domestic greywater treatment systems*

Specifies requirements for the performance, design, installation and testing of domestic greywater treatment systems and associated fittings for single domestic dwellings where adequate backflow protection is provided in accordance with AS/NZS 3500.1.

### **3.4.6 AS/NZS 3500.1-4:2021 Plumbing and Drainage**

The Plumbing and Drainage Standard AS/NZS 3500.1-4:2021 must be complied with for the installation of all plumbing work conducted on site.

Any design solution should be fitted and installed by a licensed plumbing contractor in compliance with the requirements of the Australian Standard (2021).

### **3.4.7 Guidelines for Development in Flood Affected Areas (DELWP, 2019)**

The Guidelines for Development in Flood Affected Areas (DELWP, 2019) provide an assessment framework and method to assist decisions on development proposals in flood affected areas. Floodplain management authorities have the discretion to vary from the Guidelines to accommodate local floodplain issues.

Any development proposal should consider these Guidelines, with the design solution to meet the EPA Code of Practice 891.4 (2016) requirements in relation to flood prone land.

### **3.4.8 Auditor General of Victoria (2006) Protecting our environment and community from failing septic tanks**

The Auditor General of Victoria released a performance audit report on *Protecting Our Environment and Community from Failing Septic Tanks* (2006). The aim of the report was to act as further stimulus in reducing the number of failing septic tanks throughout Victoria.

There is a historical legacy associated with failing DWM systems across the state which poses a threat to the environment and public health. A DWM system backlog program was generated, with rural Victoria falling under the Country Towns Water Supply and Sewerage Program (2005) initiated by DSE (now DELWP). The audit identified a clear need to improve backlog planning and

prioritisation processes, the legislation regulating septic tank management, and reporting and accountability mechanisms.

Records management and enforcement are two essential approaches to the management of environmental and public health risks caused by failing DWM systems. The following are the recommendations to reduce risks as outlined within the report:

- That the DSE, EPA and local government use available technical data sets such as LCAs, environmental monitoring, and cadastre (lot size) information to identify and monitor the impact of failing septic tanks across the state;
- That DSE, in consultation with CMAs, EPA, local government, DHS, water companies and authorities, establishes a mechanism to allow all stakeholders ready access to technical information such as LCA and environmental monitoring data, to improve risk identification and monitoring;
- That local government ensure that property owners and/or tenants understand that they have an existing septic tank system and that the owner has specific maintenance responsibilities for this system;
- That EPA, in consultation with local government, strengthens statutory requirements for local government to complete DWMPs by including an approval mechanism, periodic reviews and penalties for non-compliance; and

That local government reassess the resourcing levels needed to fulfil their legislative responsibilities for septic tanks.

## 4 Overview of DWM in Colac Otway Shire

### 4.1 The Local Environment

Colac Otway Shire is characterised by a unique environment including DWSCs covering approximately 30% of the Shire in the central region, large expanses of bushland and farmland, natural waterways and complex soils which all affect the way wastewater is managed on-site. There is lush hinterland, fertile grasslands, wetlands, rolling hills and volcanic cones. There are a number of State and National Parks in the Shire; notably, the Great Otway National Park and Otway Forest Park. The Shire contains three defined river Basins; Barwon, Corangamite and Otway Coast.

The Shire's major urban centre is Colac, with Apollo Bay being the other main centre in the south of the Shire. Most of the residential and commercial development outside of these towns exists within numerous small to medium sized towns/settlements, the majority unsewered. The Public Conservation and Resource Zones has been designated on public land, particularly along the coastline and the southeast of the Shire, with some privately owned land near the coast also in the Rural Conservation Zone. The Shire also has a significant percentage of land in Farming Zone, particular in the northern half of the Shire.

The diverse landscapes and climate patterns of the Shire present different opportunities and challenges for DWM. The constraints mapping (Section 6) describes in detail the different physical characteristics which are of most importance for sustainably managing treated effluent on-site, namely: climate, soils, slope, useable lot area and current Planning Scheme zone minimum lot size compliance.

#### 4.1.1 Declared Water Supply Catchments

The Shire is drained by a number of large and small waterways, some of which enter the main drinking water supply for the Shire and surrounding regions. The protection of these waterways falls under the SEPP Waters of Victoria (2003). The active management of DWM systems in these special areas can help minimise any impacts on the surrounding environment.

The Shire incorporates a number of Declared Water Supply Catchments (DWSCs):

- Barwon Downs Wellfield Intake;
- Barham River;
- Gellibrand River;
- Gellibrand River South Otway;
- Upper Barwon;
- Pennyroyal Creek;
- Matthews Creek; and
- Gosling Creek.

These catchments provide drinking water to supply systems that are managed by Barwon Water and Wannon Water.

#### 4.1.2 Soils

Site and soil investigations and sampling were conducted by Whitehead & Associates and Robert Van de Graaff & Associates on two separate occasions within the targeted localities and

towns/settlements to compare against the soil mapping collated by Robinson *et al.* 2003 LRA. The results were documented and adjusted accordingly in the soil suitability constraint mapping detailed in Section 6.2.6.

The geology and inherent soils of the Shire are separated into 3 distinct regions; the Volcanic Western Plains in the north underlain by extrusive igneous geology, a central region between Colac and Gellibrand that is underlain by variable geology including both marine, non-marine sedimentary and alluvial deposits, and the Otway Ranges which are part of the Otway Group and consist of non-marine sedimentary geology. Within the rural region in the north of COS, soils are predominantly gradational and texture contrast soils with clay subsoils derived from volcanic (basalt) lithology of the Western Volcanic Plains. The soils within the Otway Ranges are predominantly gradational soils with clay loam to loamy sand subsoils, while variable soil types occur within the central and coastal regions of the Shire. The specific soil types for the targeted localities and towns/settlements are discussed in the individual Locality Reports.

#### **4.1.3 Climate**

Climate, specifically rainfall and evaporation, plays a significant role in determining the appropriate loading rates of effluent and associated sizing of land application areas for DWM. The Shire was found to consist of four (4) distinct climate zones based on the climate analysis detailed in Section 6.2.2. The higher rainfall and low evaporation in the cooler months makes DWM problematic in all four climate regions.

#### **4.1.4 Bushfire**

Bushfire risk areas are not incompatible with DWM; however, bushfire risk has implications for planning town/settlement areas or allowing single dwellings, and can preclude residential intensification in certain areas.

### **4.2 DWM Systems and Trends in Colac Otway Shire**

There are approximately 18,795 properties and 22,127 parcels within the Shire as of May 2021. The towns which are currently sewered are Colac, Elliminyt, Apollo Bay, Skenes Creek, Marengo and Birregurra, resulting in approximately 8,992 lots that are currently sewered. There are approximately 8,886 unsewered lots (properties and parcels within townships) which are not located within reasonable distance to a sewer, or to which no sewer connection exists; although it is not known how many of these are developed. Of these unsewered lots there have been 750 new unsewered lots that have been created since 2015. All non-developable lots (i.e. National Park, State Forest, waterway or road) were not included in the unsewered lot count and subsequent analyses.

Of those 8,886 lots, there are approximately 3,884 DWM systems (applications) on Council's permit management system. It is expected that there are a number of lots within the Shire which have DWM systems which are unknown to COS, either constructed without a permit, before permits were required, or where continuity of records has been interrupted during amalgamation. It is also expected that there are some lots with DWM systems with permits which are not recorded in the Council's current record system. Therefore, all of these numbers are approximate.

Historically, greywater was managed separately to blackwater and permitted to discharge off-site. Council no longer permits off-site discharge of greywater; however, there will be a number of systems still operating in this manner. The majority of older systems include a conventional septic tank (typically cylindrical, laid horizontally) with conventional absorption trenches. These can operate effectively in many cases; however, they do require regular maintenance. Common



practice with these systems in Victoria is to bury the septic tank underground. Thus, the septic tanks are often difficult to locate and many property owners cannot locate them. This typically results in inadequate maintenance of the septic tank and in particular inadequate desludging. Without periodic desludging (every 3-5 years depending on occupancy), tanks become overloaded with solids and do not provide adequate residence time for effluent to enable suspended solids to settle out. These solids then carry over to the land application system (typically an absorption trench) and usually cause the soil to block up over time, causing failure of the trench and surcharge of effluent to the ground surface.

Newer systems installed in COS tend to provide higher levels of treatment through the use of AWTs, sand filters or greywater treatment systems, and no longer discharge greywater separately. These systems provide secondary treatment of the wastewater before discharge to LAA irrigation systems. These systems do require more maintenance than a septic tank and servicing every three months is a requirement of the system Certificate of Conformance.

From July 2015 to June 2021, there had been 444 DWM system applications; including the following treatment types: 137 septic primary systems, 279 AWTs, 13 sand filter, 1 pump out, and 14 worm farm systems. These have been included into Table 1 and 2 below. There has also been 387 Permits to Install issued and 253 Certificates to Use (some not yet issued/ outstanding), and 2,998 service reports received. In addition, there has been 474 inspections of premises under the *Food Act 1984* and *Public Health and Wellbeing Act 2008*, with any DWM systems servicing these premises also inspected.

Considering the date of issue of many of the permits, there may be a large number of systems operating which do not meet current Council or EPA requirements. There have been 21 notified wastewater complaints to Council regarding DWM systems and associated land applications that have been registered in Council's Health Manager database from 2015- 2021. These were all located within the township of Forrest. The reticulation/sewering of Forrest would be beneficial as wastewater management complaints are received in this township. There are a number of site constraints that are present within these township properties. Protecting the environment and public health through the sewerage of Forrest would be supported.

Table 1 and Table 2 below provide a summary of the treatment and land application system types known in the Shire. The data was provided by COS (current June 2021) and represents currently registered DWM systems within COS's permit management system. For a number of reasons, there are a large number of unknown system types; however, this is generally not an indication of poor performance of these systems.

**Table 1: DWM System Types**

<b>System Type</b>	<b>System Brand</b>	<b>Number of Systems Inspected</b>
Septic Tank	Unknown	1,280
AWTS	Unknown	105
	AquaNova	58
	Aquacycle	3
	Aquatreat	3
	Alpha Treat DP10	4
	Biocycle	19
	BioFicient Series 1	5
	Biolytix	13
	Clearwater Bio-Filter	4
	Diston Bio-Rotor	1
	Econocycle	60
	Envirocycle	20
	Envirosepp	196
	FujiClean	44
	Global Roto-Moulding	1
	Graf	3
	Nova Clear	3
	Ozzi Kleen	232
	Ozzi Kleen greywater treatment system	16
	Septech	36
Supertreat	1	
Taylex ABS	56	
20EP Sewage Plant	2	
Composting	Biolet composting	1
	Clivus Multrum	3
	Ecolet	1
	Rota-loo	3
Sand Filter	Sand Filter	293
Other	Constructed Wetlands Reedbed	1
	Unknown	1
Worm Farm	A&A Worm Farm Waste Systems	38
	Zenplumb wormworx	1
	Unknown	6
Unknown	Unknown	779
<b>Total (includes split treatment systems for blackwater &amp; greywater)</b>		<b>3,292</b>

**Table 2: Land Application Methods**

<b>Effluent Disposal Method</b>	<b>Number of Systems</b>
Drip Irrigation	224
Irrigation	75
Pressure Irrigation	95
Subsurface Irrigation	532
Trench	665
Transpiration Bed	47
ETA Bed	6
LPED	2
Wick Trench	42
Reln™ Drains	2
As Per Plan	41
Unknown	2,242
Pump out	5
<b>Total</b>	<b>3,978</b>

To date, 100% of systems with a permit in the Shire have been inspected by Council staff at least once. However, older systems without a permit, and those where tanks are buried and not able to be located, may not have been inspected by Council staff, either at the time of installation or since.

Since the appointment of a dedicated DWM officer from 2018-2021, 406 DWM audits have been undertaken as part of a targeted risk-based compliance monitoring program. The audits focused on the higher risk townships and those located within a DWSC; including, Beech Forest (95), Kennett River (152), Barwon Downs (67), Lavers Hill (41), and Gellibrand (51). The breakdown of the DWM treatment system types audited is as follows: AWTS 21%, septic (with trenches) 61%, worm farm 1.6%, sand filter 2.9%, composting toilet 0.8%, and unknown 11.3%. Of these DWM systems audited, only 71% contained effluent within the LAA; with 14% discharging to the surface on-lot and 15% discharging effluent off-site. There were an additional 110 audits undertaken by an external contractor in Forrest in 2017.

### **4.3 DWM System Inspections in Drinking Water Catchments**

Site assessments were undertaken for a representative sample of properties in unsewered towns/settlements located in the Declared Water Supply Catchments (DWSCs) in September 2014. Approximately 10% of permanently-occupied households in selected towns/settlements were inspected, encompassing a typical range of land sizes. The results are considered to be broadly reflective of the towns/settlements assessed.

#### **4.3.1 Wastewater Treatment Systems**

The proportion of combined (blackwater + greywater) wastewater systems was often higher than expected, as well-established rural localities and associated towns/settlements commonly have separate greywater and blackwater systems. The newer houses (<20 years) were more likely to have combined systems than older houses (>20 years).

Regardless of whether blackwater and greywater streams were separate or combined, septic tanks were often unsatisfactory in terms of accessibility for maintenance, capacity and/or structural integrity. Frequently, septic tanks were buried under more than 150mm of soil, making identification and access difficult and in some cases, the resident/owner was not aware of the septic tank location. Most systems had not been serviced or pumped out within the past 10 years. Many septic tanks allowed stormwater ingress through cracks or gaps alongside the lids, which were typically installed at or below ground level.

There were relatively few secondary treatment systems or greywater treatment systems installed at the inspected properties.

#### **4.3.2 Effluent Disposal Systems**

Where greywater was managed separately, it was typically directed off-lot, either to the street drain at the front or beyond the back fence (to neighbouring public land or private agricultural land). Due to the cool weather and high rainfall of the inspection period (early spring), effluent did not drain away and was often present in stagnant odorous pools near the point of discharge. In many cases, the direct flow path to nearby surface waters, including drains, creeks and rivers, was less than 100m, posing a high risk to public and environmental health.

Blackwater or combined effluent septic tanks typically discharged to conventional absorption trenches. It was often difficult or impossible to determine the dimensions and layout of trench systems, particularly as wet weather did not cause preferential growth of grass over trenches (as is the case in drier seasons). However, it was evident that many if not most trenches were undersized for the expected wastewater load (number of bedrooms), particularly when the age and potential for 'creeping failure'<sup>1</sup> of the system is taken into account.

However, the existing trenches may be acceptable for the typically small number of occupants of most households (an average of approximately 2 – 2.5 across the Shire, according to ABS 2011 Census data); in which case upgrades may not be immediately necessary.

---

<sup>1</sup> Refers to the progressive clogging of a soil absorption (trench) system along a linear front from the loading end to its terminus.

## 5 Preliminary Data Collection (Stage 1)

The following section details data acquisition undertaken for the project and used to process information for input into the Sensitivity Analysis. Section 4.1 of the Operational Plan details the methodology and results of the Sensitivity Analysis and overarching Risk Assessment Framework. The background legislative/regulatory requirements are discussed above in Sections 2 and 3.

### 5.1 Data Acquisition

Geographic Information System (GIS) data, covering a wide variety of physical and planning components, has been acquired from COS, the Department of Environment, Land, Water and Planning (DELWP), Wannon Water, Barwon Water, Southern Rural Water, FedUni, Visualising Victoria's Groundwater (VVG) Project by University of Ballarat and the former Department of Sustainability and the Environment (DSE).

The data obtained included: property and parcel (for targeted localities only) information (cadastre), roads, local government area (LGA) and locality boundaries, sewer network, septic system information, topography, LIDAR, planning scheme zonings and overlays, surface elevation contours (a range of levels), hydrology and drainage, potable reservoirs and offtake points, climate data including rainfall and evapotranspiration, flood prone land (land subject to inundation), 1 in 100 year annual recurrence interval (ARI) flood level, soil landscape, lithology and land system information, groundwater bore locations and information, watertable depths and potable water catchment boundaries. All data was received during late 2014, except for the parcel cadastre layer which was updated as of June 2015. The Sensitivity Analysis was reviewed in 2021, with the revised cadastral data used to ensure that planning and development changes since 2015 were incorporated into the assessment and assigned a Sensitivity Risk Rating in relation to DWM. The only other layer that was also updated within the 2021 review was the COS planning scheme zonings and overlays. Comparisons with the other layers showed that there was no to little change in attributes between 2015 and 2021 so they were not updated within the Sensitivity Analysis.

The GIS data supplied was used for the development of individual constraint maps, informative maps and overlay maps of the Shire. This information provided a comprehensive basis for risk assessment.

### 5.2 Property (Parcel) Characterisation

Using cadastral data supplied by Council as part of the 2021 review, the analysis identified approximately 18,795 'properties', comprising of 22,127 'parcels' within the Shire. For analysis presented throughout the DWMP, the parcel dataset was used within the targeted localities and associated towns/settlements, with the property dataset used for the remainder of the Shire.

All non-developable lots (i.e. National Park, State Forest, recreation or conservation area, waterway or road etc.) are not included in the unsewered lot count and subsequent analyses in the DWMP. Towns which are currently sewered; including Colac, Elliminyt, Apollo Bay, Skenes Creek, Marengo and Birregurra, have also been excluded from the analysis.

Further, parcels that were <400m<sup>2</sup> in area were excluded from the analysis as they represent a land area too small to sustainably accommodate unsewered development (building/associated improvements and DWM) on-site. These areas most likely represent dataset irregularities (i.e.

artefacts), or Council or utility sites. If necessary, assumptions can be drawn from the constraints of the surrounding lots.

Based on the raw dataset, and the exclusions described, there are approximately **8,886 unsewered lots** which are not located within reasonable distance to a sewer, or to which no sewer connection exists; although it is not known how many of these are developed. Of these 8,886 unsewered lots; 750 new lots have been created since 2015. The regions excluded from analysis as outlined above are shown as white regions (cadastre) on the subsequent Constraint and Sensitivity Analysis maps.

Some discrepancies may be found between other published total lot numbers and those used, due to issues associated with lot amalgamation and subdivision over time and the current version of cadastre provided by the Council. The cadastre dataset used in this analysis will be progressively updated by Council to include the changes made to the lots within the Shire overtime; as exhibited during this 2021 review

FOR ADOPTION

## 6 GIS Data Analysis (Stage 2)

### 6.1 Domestic Wastewater Management Constraints

The individual constraint maps were created using a GIS, through QGIS™, which applied constraint classes for a number of built constraints and land capability constraints, including site and soil parameters. Five constraints were selected, which when consolidated, contribute to assessing the overall land capability for DWM systems, and were used as an input into the Sensitivity Analysis. These were selected based on the availability of digital data, and in the light of experience gained in designing and auditing DWM systems. The discrete constraints selected were:

- Climate;
- Useable Lot Area;
- Current Planning Scheme Zoning Minimum Lot Size Compliance (updated 2021 review);
- Slope (surface elevation); and
- Soil Suitability.

Sensitivity Analysis mapping refers to all unsewered lots, irrespective of whether they are developed or not. Lots that were excluded from the Sensitivity Analysis included those, sewerage, <400m<sup>2</sup> in area, zoned Public Park and Recreation Zone, Public Conservation and Resource Zone, and Road Zone as per the COS Planning Scheme, and areas that are categorised as waterbodies in the soil landscape mapping.

Thematic informative maps were also generated for existing lot size, current planning scheme zoning, vegetation, and geology. A sensitivity overlay was developed for landslip hazard and depth to groundwater to assist in refining the final risk rating as necessary for each lot as generated by the Risk Assessment.

There were other parameters that could have been considered in a more detailed constraint assessment; however, such data was not available for this Risk Assessment and the scope of the project did not permit its collection. Nevertheless, the constraints chosen were considered acceptable for the purpose of quantifying the constraints for the broad-scale Risk Assessment outlined in the Operational Plan. The maps have been produced for use at a broad scale (~1:330,000) and the limitations of the data used in the creation of these maps for input in the Sensitivity Analysis must be recognised and is detailed in Section 4.1 in the Operational Plan.

### 6.2 DWM Constraint Mapping

#### 6.2.1 Constraint Classification Framework

For each of the constraints mentioned above, the degree of constraint in relation to DWM for all lots within the Shire was assessed and individually assigned a constraint class that is then used as an input into the Sensitivity Analysis. The criteria used to determine constraint categories were based on previous constraint assessments for unsewered towns in Australia undertaken by W&A and relevant Australian and Victorian guidelines for DWM.

Table 3 provides a rationale for the interpretations that were used to derive the constraint classes. The constraint classes give guidance towards the DWM requirements as stipulated by Council. For existing DWM systems, the level of constraint will commonly reflect the level of challenge that

has been experienced in managing the system. This information will help guide property owners and Council in the ongoing management of existing systems.

**Table 3: Rationale for DWM Constraint Ratings**

<b>Constraint Class</b>	<b>Description</b>
<b>Very High</b>	The constraint is present at a very high level and this significantly restricts opportunities for sustainable DWM. Traditional systems are 'typically' not appropriate and a detailed site and soil evaluation would be required to determine if DWM is achievable at all. If achievable, specialised, advanced treatment and land application systems may be required to overcome the constraint.
<b>High</b>	The constraint is present at a high level and this substantially restricts opportunities for sustainable DWM. Traditional systems (i.e. septic tanks and trenches) are 'typically' not appropriate and a detailed site and soil evaluation would be required to determine if they are supported. Otherwise, specialised, advanced treatment and land application systems may be required to overcome the constraint.
<b>Moderate</b>	The constraint is present at a moderate level and this limits the range of DWM options that are appropriate for the site. A detailed site and soil evaluation is required to identify the most appropriate DWM system and mitigation measures to be employed.
<b>Low</b>	The constraint is present at a low level and is unlikely to substantially limit opportunities for DWM. In most cases appropriately designed and managed conventional systems will be acceptable.

### 6.2.2 Climate

Climate, specifically rainfall and evaporation, plays a significant role in determining the appropriate loading rates of effluent and associated sizing of land application areas for DWM. The climate feature of most interest to DWM is the excess of rainfall over evaporation (more specifically evapotranspiration), which is denoted here as "moisture surplus". Moisture surplus can result in surface runoff, an increase in soil moisture storage (up to saturation point), and increasing deep infiltration to groundwater.

There are 21 Bureau of Meteorology (BoM) stations located throughout the Shire which record daily rainfall, including five on the Otway Ridge, which receives Victoria's highest average annual rainfall (up to 1,950mm/year). However, none of these stations measure pan evaporation. The closest station to the Shire that records pan evaporation is at Durdidwarrah, located approximately 45km from the north-eastern Shire boundary. Pan evaporation data for the period 1973-2000 is available at this station.

To overcome this data limitation, this project uses interpolated, gridded data from SILO. SILO (Scientific Information for Land Owners) is a climate and meteorological data service developed and hosted by the Queensland Government, which provides representative data for the entire continent, produced using real climate data collected over long time periods by the BoM. The service provides a realistic representation of a broad range of climate statistics (including rainfall and evapotranspiration) for most areas which are not serviced by local BoM stations. However, it is acknowledged that, due to the sparsity of raw data (BoM) sites and significant orographic influence, the interpolation for the Otway Range tends to underestimate the rainfall along the ridge.



Monthly rainfall and evapotranspiration data for 64 SILO data points at approximately 0.1 degree (~8.8km) grid spacings was collected for the entire Shire. Figure 1 shows the rainfall distribution pattern throughout the Shire based on annual 70<sup>th</sup> percentile rainfall for each SILO data point. The percentile rainfall data was interpolated using GIS across the Shire to produce a grid with approximately 300m cell size. With the exception of the Otway Ridge rainfall, the data is considered to be a realistic representation of climate patterns throughout the Shire on a long term basis, suitable for use in DWM investigations and designs. The data was also used in the System Sizing Tables, discussed in Section 7.

SILO potential evapotranspiration (ET<sub>o</sub>) estimates are calculated using the FAO Penman-Monteith formula with a default wind value of 2 m/s. The Penman-Monteith formula also requires radiation, air temperature and humidity as an input. These data are readily available from existing BoM stations.

For each SILO data point for each year, the monthly water 'excess' totals were calculated by subtracting the total monthly rainfall from total monthly average evapotranspiration. When a water excess occurs within any given month, the rainfall exceeds the evapotranspiration, resulting in meteorological water being retained within the soil profile. From this, the total number of 'wet' months for each year were calculated and the median taken for each SILO data point. The number of 'wet' months has been gridded and the interpolated values have been converted to the nearest integer. The distribution of the number of 'wet' months throughout the Shire is shown in Figure 2. From this, four (4) distinct climate zones were identified based on the number of months where rainfall exceeds evapotranspiration and were categorised as detailed below. Each lot within the Shire was assigned to a climate zone as shown in Figure 3.

- Zone 1: 0 – 4 soil moisture surplus (70<sup>th</sup> percentile rainfall exceeds mean evaporation) months of the year;
- Zone 2: 5 – 6 soil moisture surplus (70<sup>th</sup> percentile rainfall exceeds mean evaporation) months of the year;
- Zone 3: >7 soil moisture surplus (70<sup>th</sup> percentile rainfall exceeds mean evaporation) months of the year; and
- Zone 4: average annual rainfall >1,600mm.

A lot is assigned the more conservative climate zone if it is located along a climate zone boundary. Table 4 details the results of the climate zone constraint analysis for the Shire.

Similarly, the longest run of consecutive 'wet' months in each year was also determined and the median longest run was calculated for each SILO data point. The number of consecutive 'wet' months has been gridded and the interpolated values have been converted to the nearest integer. The distribution of the number of consecutive 'wet' months throughout the Shire is shown in Figure 4.

Overall, there is a strong trend in greater rainfall towards the south of the Shire, particularly along the Otway Range. This is consistent with higher topography and coastal conditions in those regions. The 'wet' months are typically found to coincide with the winter calendar months and had a similar increasing trend towards the south of the Shire. All of the targeted localities and towns/settlements are located within climate zones 2 - 4.

The acquired climate data obtained for this assessment is available to Council and will provide a very useful resource for Council in the preparation and review of LCAs in the future. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data is available for the majority of the

unsewered localities and towns/settlements from Council for input into monthly water balances as part of a site specific LCA.

The climate data that was used in the development of the System Sizing Tables is attached in Appendix C. The BoM 70<sup>th</sup> percentile rainfall presented in Appendix C should be used instead of the SILO data for all localities along the Otway Ridge (i.e. Beech Forest, Ferguson, Lavers Hill, Wyelangta and Weeaprounah). This appended climate data also includes additional data for surrounding unsewered localities. Land Capability Assessors are also able to use site-specific SILO Data Drill and BoM climate data for LCA reports and DWM designs for particular lots. The use of such data should be clearly referenced and justified in the LCA report in each instance.

FOR ADOPTION

## Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

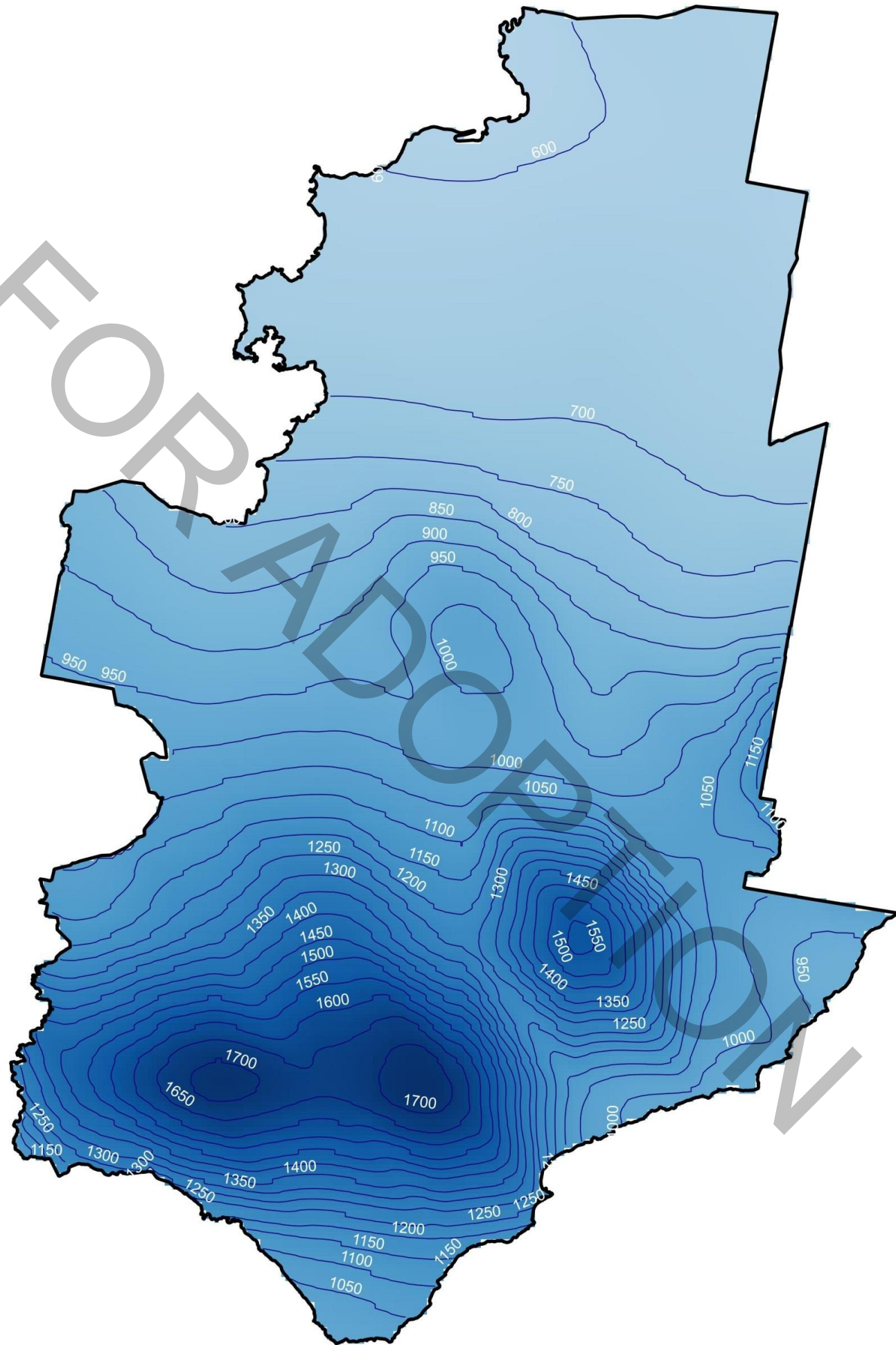
**Table 4: Climate Zones Constraint Map Summary**

	Total Lots (Original (new >2015))	Total Number in Assigned Constraint Class			
		Zone 4	Zone 3	Zone 2	Zone 1
		Average Annual Rainfall >1,600mm	>7 months soil moisture surplus	5 – 6 months soil moisture surplus	0 – 4 months soil moisture surplus
Shire (Overall)	8,136 (750)	571 (18)	3,496 (391)	3,861 (317)	208 (24)
Alvie Town (Locality)	157 (4)	0 (0)	0 (0)	157 (4)	0 (0)
Barham River (Apollo Bay) Settlement (Locality)	309 (83)	0 (0)	309 (83)	0 (0)	0 (0)
Barongarook Settlement (Locality)	260 (2)	0 (0)	260 (2)	0 (0)	0 (0)
Barwon Downs Town (Locality)	252 (8)	0 (0)	251 (8)	1 (0)	0 (0)
Beeac Town (Locality)	628 (14)	0 (0)	0 (0)	628 (14)	0 (0)
Beech Forest Town (Locality)	329 (3)	293 (3)	36 (0)	0 (0)	0 (0)
Carlisle River Town (Locality)	245 (1)	1	241 (1)	3 (0)	0 (0)
Coragulac Town (Locality)	175 (13)	0 (0)	0 (0)	175 (13)	0 (0)
Cororooke Town (Locality)	254 (31)	0 (0)	0 (0)	254 (31)	0 (0)
Forrest Town (Locality)	344 (5)	0 (0)	315 (5)	29 (0)	0 (0)
Gellibrand Town (Locality)	260 (5)	0 (0)	260 (5)	0 (0)	0 (0)
Kawarren Settlement (Locality)	212 (3)	0 (0)	175 (0)	37 (3)	0 (0)
Kennett River Town (Locality)	183 (0)	0 (0)	2 (0)	181 (0)	0 (0)
Lavers Hill Town (Locality)	189 (5)	176 (5)	13 (0)	0 (0)	0 (0)
Separation Creek Town (Locality)	129 (0)	0 (0)	0 (0)	129 (0)	0 (0)
Wye River Town (Locality)	376 (13)	0 (0)	0 (0)	376 (13)	0 (0)

Whitehead &amp; Associates Environmental Consultants

**Legend**

— 70th Percentile Rainfall Contours (50mm Intervals)



**Figure 1: 70th Percentile Rainfall Distribution - Shire**

Colac Otway Shire DWMP Review



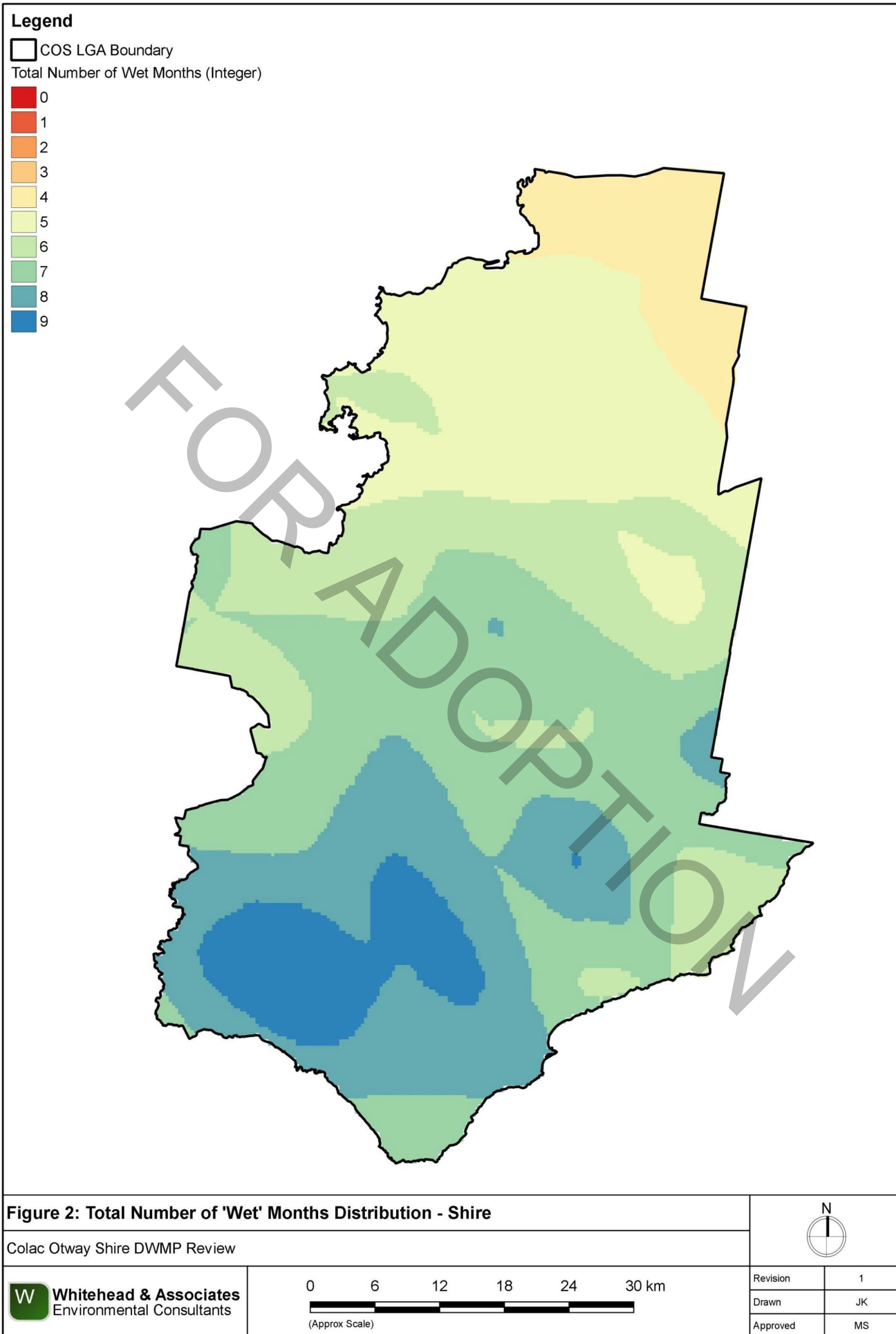
**W** Whitehead & Associates  
Environmental Consultants

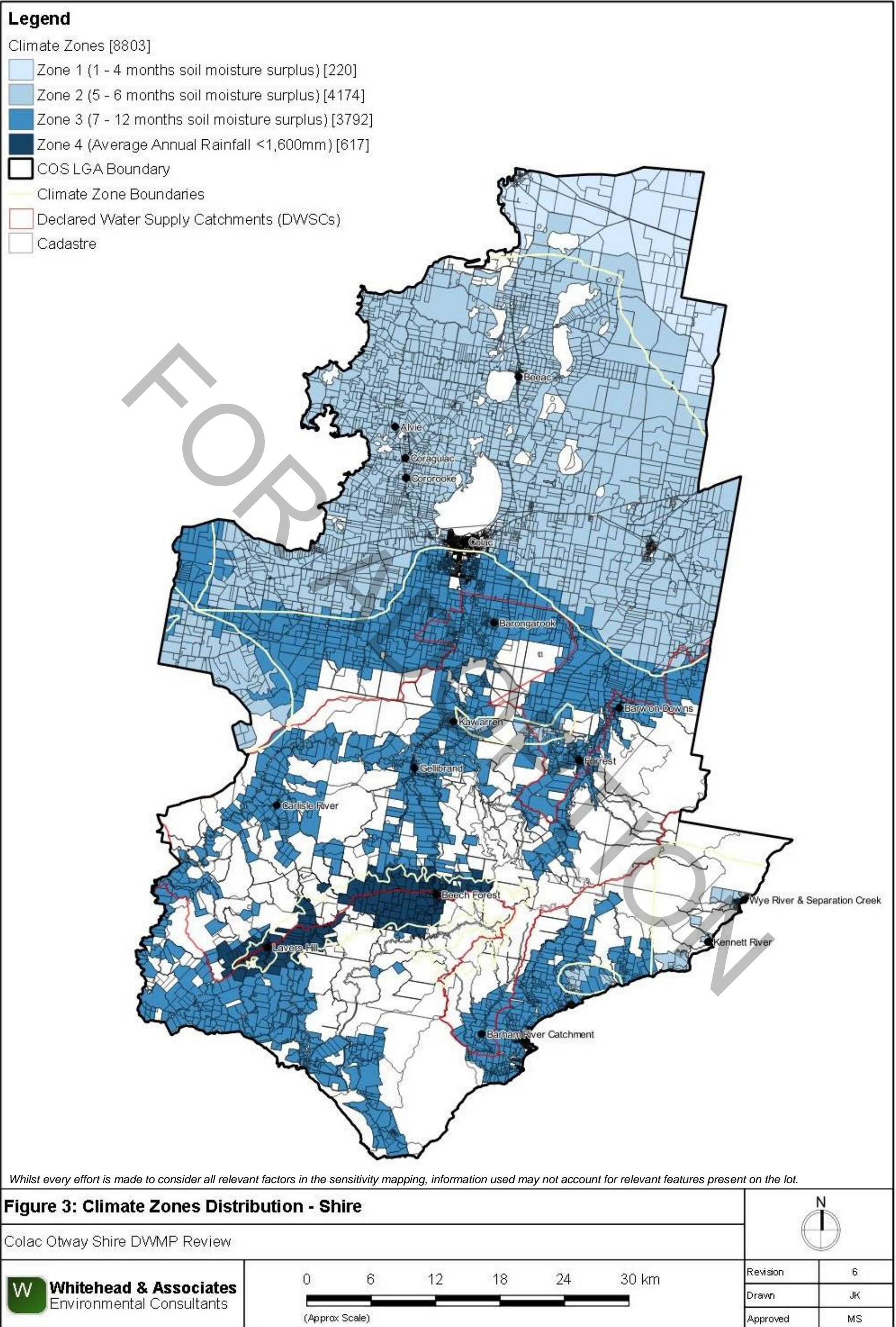
0 6 12 18 24 30 km



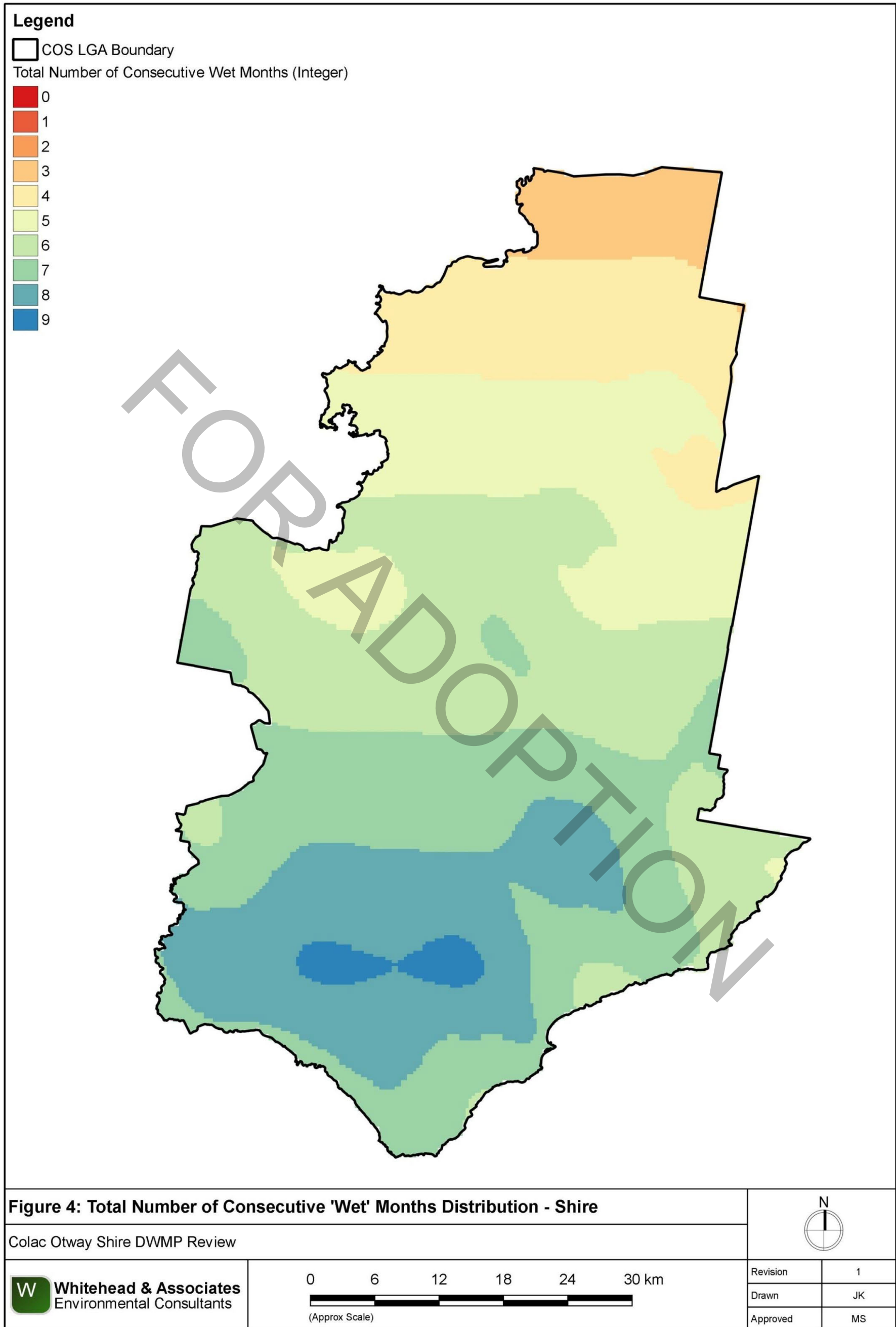
(Approx Scale)

Revision	1
Drawn	JK
Approved	MS





Whitehead & Associates Environmental Consultants



### 6.2.3 Useable Lot Area

The potential for sustainable DWM and the determination of suitable DWM system options is dependent on the amount of adequate area available for DWM. The useable lot area for effluent management broadly refers to available land (i.e. not built out or used for a conflicting purpose) where DWM will not be unduly constrained by site and soil characteristics.

The smaller the lot, the more difficult it is to treat and retain wastewater onsite in accordance with legislative requirements. A properly sized land application area provides for long-term, sustainable effluent loading rates that match the assimilative capacity of the soil and vegetation systems. Conversely, improperly designed or undersized land application areas are more likely to fail and lead to potential adverse impacts on both public health and the environment. In recent years, understanding of sustainable effluent loading rates has improved and it is now commonly identified that many older existing systems, such as septic absorption trenches and evapotranspiration beds, are undersized by today's standards.

Useable lot area, irrespective of total lot size, plays a key role in determining a lot's capacity for sustainable long-term DWM and influences the selection of appropriate DWM systems. However, as a general rule, the smaller the lot, the less land that will be available for effluent management after allowing for other development on the land. Older development controls and design standards (Codes etc.) did not always consider site-specific land capability constraints and, as a consequence, many existing and vacant residential lots may be too small to accommodate sustainable DWM systems, particularly by today's more informed standards.

There is no defined rule about what constitutes an appropriate minimum effluent management area, or in fact minimum useable area that is capable of providing such areas. This will vary depending on the physical constraints present on the lot, the nature of the development, as well as the type of treatment and land application system used. The constraint class boundaries reflect the likelihood of a lot having sufficient effluent management area available after allowing for typical improvements.

There are many factors that determine the available area on any given lot, including:

- Maintenance of appropriate setback buffers from boundaries, buildings, driveways and paths, groundwater bores, dams, intermittent and permanent watercourse; and
- Total development area (including the dwelling, sheds, pools, driveways and garden paths, gardens unsuitable for effluent reuse, and any other hardstand areas, etc.).

Available areas may be unsuitable or constrained for DWM due to other factors, including (but not limited to):

- Excessive slope;
- Excessively shallow soils;
- Heavy (clay) soils with low permeability;
- Climate in regards to the degree of soil moisture surplus;
- Excessively poor drainage and/or stormwater run-on; and
- Excessive shading by vegetation.



For this study, the useable lot area was determined by the setbacks to surface waterways, groundwater bores and land subject to inundation. The following sections detail the methodology and results for each analysis and the determination of the final useable lot area.

### 6.2.3.1 Proximity to Surface Waters

This section seeks to explain how the distance to waterways, lakes, dams and drinking water catchments influences the useable lot area calculation which forms part of the constraint mapping. This is of particular importance for lots within the DWSCs.

COS is located entirely within the Corangamite Catchment Management Area (CMA) and consists of the following defined three river basins; Barwon (to the east), Corangamite (north and west), and Otway Coast Basin (to the south).

A large portion (28%) of the Shire is located within a Declared Water Supply Catchment (DWSC). There are seven DWSCs located within the Shire; Gosling Creek, Pennyroyal Creek, Matthew Creek, Upper Barwon, Lorne, Barham River, Gellibrand River, Gellibrand River (South Otway), and Barwon Downs Wellfield Intake. Three of these DWSCs, Upper Barwon, Gellibrand River, and Gellibrand River (South Otway), have Special Area Plans. These DWSCs are detailed on the 'proximity to surface waterways informative map' in Appendix A and regionally below in Figure 5.

Buffer distances (setbacks) are usually provided between land application areas (including all pipes and fittings associated with the DWM system) and sensitive receptors, such as surface watercourses, to help prevent adverse impacts on water quality, particularly should the DWM system fail. There is no simple and defined method for objectively determining safe buffer distances, so regulators often recommend conservative, minimum buffer distances that would be expected to satisfy the objective in the majority of situations.

The current EPA Code of Practice recommends three tiers of setback distances from surface waterways that are applicable to the Shire. Further, the Code specifies differing setback distances for primary (i.e. septic/trench) systems, secondary and greywater systems, and advanced secondary greywater systems. The following (primary) buffers have been conservatively adopted and applied to the appropriate surface watercourse/waterway using data (1:25,000 scale) provided by DELWP. The resultant map is appended in Appendix A.

- 60m for non-potable watercourses, dams, wetlands, estuaries and surface water features (including the mean coastal high-tide mark and dams);
- 100m for potable watercourses<sup>2</sup> and surface waterway river bodies; and
- 300m for potable reservoirs or storages.

300m setbacks, similar to those applied for potable reservoirs, were also applied to the Water Corporation source points (i.e. offtake points, weirs, pumping stations, etc.) to ensure that the sensitivity of these local environments are accounted for.

No setbacks were applied to man-made drains or waterfalls, which would likely be accounted for within other watercourse/waterway setbacks.

Intuitively, the risk of DWM systems impacting on nearby receiving areas increases with decreasing separation distance. For a broad-scale risk assessment, it is appropriate to analyse

---

<sup>2</sup> It should be noted that the surface water map does not distinguish between permanent and intermittent watercourses. Diversion channels have been defined as a watercourse for this particular purpose.

the separation distances that are available on a lot basis and assign constraint classes accordingly.

AS/NZS 1547:2012 and Table 5 in EPA Code of Practice 891.4 details instances where recommended setbacks from sensitive receptors can be relaxed to accommodate certain types of systems where standard buffer distances cannot be achieved. These systems would require individual assessment and design in order to meet the requirements of the Standard.

For lots constrained by proximity to surface waters, it might be possible to mitigate this constraint by:

- Secondary treatment with an AWTS or sand filter;
- Moving the LAA to increase buffer distance; or
- Replacing surface irrigation with subsurface irrigation.

As mentioned previously in Section 3.2.5, water services within the Shire are provided primarily by Barwon Water, with water also supplied by Southern Rural Water to the north of the Shire and by Wannon Water to the town of Carlisle River. Both Barwon Water and Wannon Water are referral authorities for developments within the DWSCs within the southern region of the Shire. The referral authorities for each DWSC in the Shire are detailed within Clause 66.04 and Schedule 3 of the Environmental Significance Overlay (ES03) of the COS Planning Scheme.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

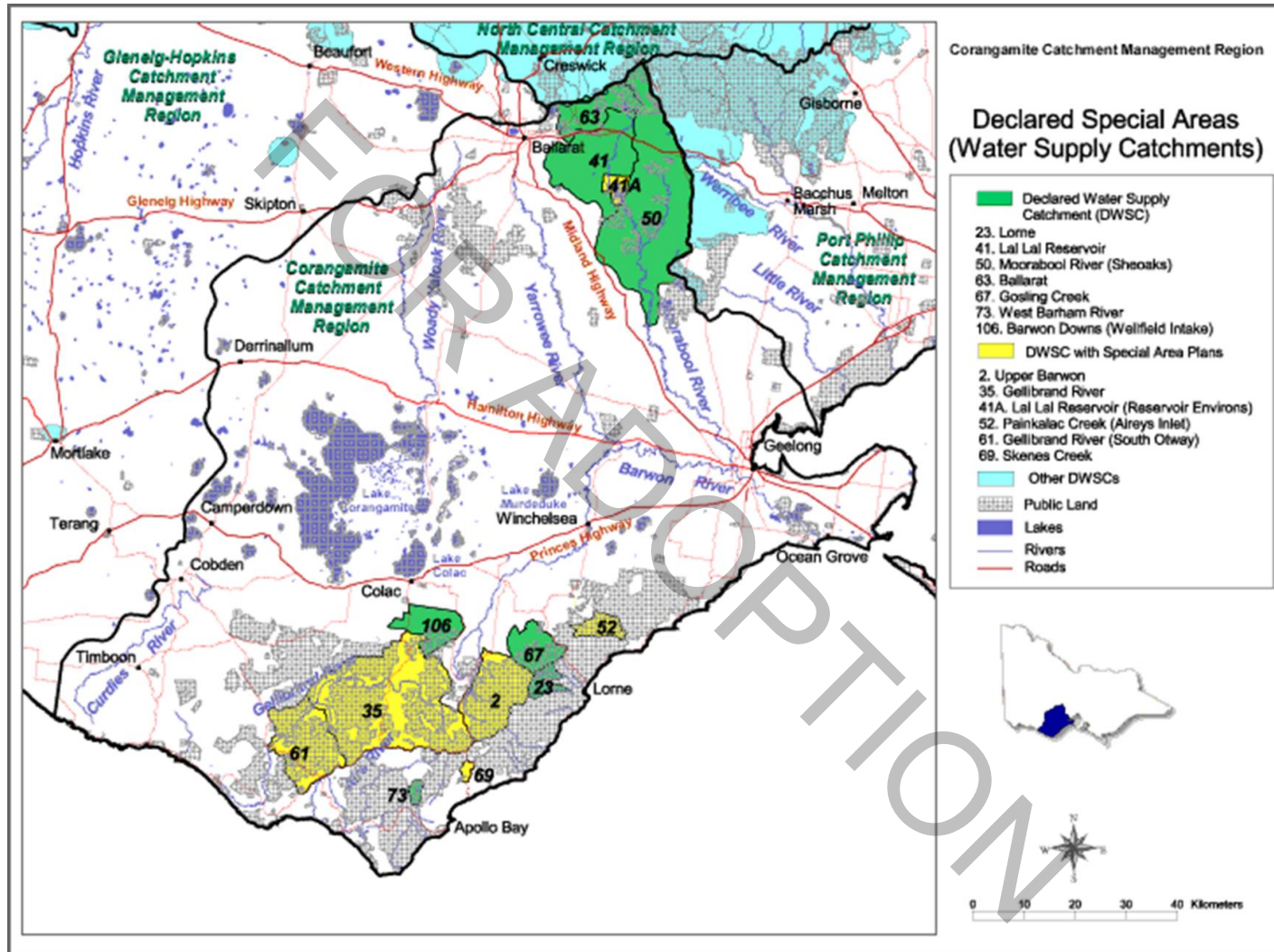


Figure 5: Corangamite CMA Declared Water Supply Catchments (DEPI, 2012)

Whitehead & Associates Environmental Consultants

### 6.2.3.2 Proximity to Groundwater Bores

This section seeks to explain how the distance from DWM systems to groundwater bores can affect the quality of groundwater.

The principal groundwater resources in Victoria fall south of the Great Dividing Range and are generally contained in Tertiary or younger unconsolidated sediments. The Shire is located within the Otway-Torquay groundwater basins, within the Hopkins-Corangamite and Otway-Torquay groundwater catchment areas.

A Groundwater Management Unit refers to either a Groundwater Management Area or Water Supply Protection Area as determined within the Groundwater Catchment. Water Supply Protection Area(s) (WSPAs) are declared under Section 27 of the *Water Act 1989* to protect groundwater or surface water resources through the development of a management plan which aims for equitable management and long-term sustainability. There are nineteen WSPA declared in Victoria. A Groundwater Management Area(s) (GMAs) is defined as an area where groundwater of a suitable quality for irrigation, commercial or domestic and stock use is available or expected to be available. There are 34 GMAs declared in Victoria. There are four GMAs found within the Shire; Gerangamete to the east (60m depth), Gellibrand centrally located (at or near surface), Paaratte to the west (>120m depth) and Newlingrook to the west (at or near surface). There is one declared WSPA within the Shire; Warrion WSPA, which is located within the north east of the Shire and within the targeted localities of Alvie, Cororooke and Coragulac. This is managed by Southern Rural Water. The western edge of Lake Corangamite forms the administrative boundary between Colac Otway Shire and Corangamite Shire Council and also a natural hydrogeological boundary to the Warrion WSPA. The principal aquifer is unconfined and predominantly consists of volcanic material, including fractured basalt and scoria. There is also a potential of the Hanson Plains Sand aquifer underlying the volcanic aquifer supplying groundwater to this system. DELWP and Southern Rural Water, on behalf of the Minister of Water, jointly monitor and manage groundwater resources within the Shire.

The location of land application areas in close proximity to groundwater bores increases the potential for contamination of the groundwater. When water is extracted from the groundwater bores a zone of influence is created, whereby the head level of the groundwater is altered. Buffer distances (setbacks) are recommended between land application areas and both potable and non-potable groundwater bores. The current EPA Code of Practice recommends a 50m setback (for Category 1 and 2a soils) and 20m setback<sup>3</sup> (for Category 2b to 6 soils) be maintained from such resources to protect human health. Setbacks in Category 1 and 2a soils can be reduced to 20m where treated and disinfected greywater or secondary treated (20/30/10 or better) effluent is applied and the property owner has a service contract for their DWM system. A conservative approach was taken when developing this DWMP and a setback distance of 50m was used for all the groundwater bores located within the Shire.

The spatial data of the groundwater bore locations within the Shire was acquired from the Water Measurement Information System (WMIS) Database Interface as managed by DELWP. Using GIS, the recommended groundwater buffer setback was applied to all of the groundwater bores located within the Shire. There was a total of 2,329 groundwater bores that were identified within the Shire. The resultant map is appended in Appendix A.

---

<sup>3</sup> For secondary sewage and greywater effluent

As previously mentioned, AS/NZS 1547:2012 and EPA Code of Practice details instances where recommended setbacks can be relaxed to accommodate certain types of systems where standard buffer distances cannot be achieved. In most cases, the preferred result would be to have the identified bores condemned and capped to prevent further use, negating the need for setbacks from these resources. However, it is acknowledged that this outcome would not be acceptable to some owners who utilise the resource.

For lots constrained by proximity to groundwater bores, it might be possible to mitigate the constraint by:

- Secondary treatment with an AWTS or sand filter;
- Moving LAA to increase buffer distance; or
- Replacing surface irrigation with subsurface irrigation.

### 6.2.3.3 Land Subject to Inundation

The DWM system, including any tanks, fields or trenches should be sited above any land subject to inundation.

Land that is subjected to frequent or intermittent inundation by floodwater has a significantly higher constraint for effective on-site DWM. Effluent management areas should not be located within flood prone regions as floodwaters have a higher probability of inundation leading to insufficient treatment of the effluent and an increase in potential environmental and public health risks.

Flood prone land, in the case of this report, is defined as land that is subject to inundation based on the 1 in 100 year flood level (1% Annual Exceedance Probability (AEP)) that delineates the areas likely to be inundated through statistical modelling or as determined by the floodplain management authority. Land subject to inundation was buffered from the useable lot area; the resultant map is appended in Appendix A.

It might be possible to mitigate the lots constrained by flood prone land by:

- Secondary treatment with an AWTS or sand filter;
- Using pressure compensating subsurface irrigation; or
- Raising level of application by constructing a raised bed or sand mound.

### 6.2.3.4 Useable Lot Area Analysis

The cadastre data set supplied by Council was queried to determine the spatial relationship between each lot, its existing land area and the buffer zones (cohesively) to determine the useable lot area for each lot within the Shire; whether developed or not. The following criteria were used to determine the useable lot area classification with regards to DWM suitability:

- High: useable area <0.15ha;
- Moderate: useable area 0.15 – 0.4ha;
- Low: useable area >0.4 – <40ha; and
- Compliant: useable area ≥40ha.

Lots containing less than 0.15ha of useable area invariably have a very limited available effluent management area and so DWM contained entirely on-site is in the vast majority of cases unsustainable, necessitating site specific hydraulic design for wastewater management. This is

based on an assumed footprint of 500m<sup>2</sup> for an average building envelope and improvements (e.g. driveway) and allowing for an average appropriately sized LAA and reserve LAA on the remainder of the lot.

If DWM is to be provided, it will be necessary to provide a high level of treatment and specialised land application design using systems such as sand mounds or pressurised subsurface irrigation, to ensure long term sustainability. Other mitigation measures like the adoption of water conserving practices will be important in ensuring the system's effectiveness. Such systems are likely to have limited opportunity for expansion, as may be required if the household wastewater load changes in response to increased occupancy, or if a new reticulated water supply becomes available. It should be taken into consideration that a lot <0.15ha will not necessarily be totally unsuitable for DWM or currently be serviced by a failing system; however, it is likely to contain a number of significant limitations to the safe operation of DWM systems assessed at a broad scale.

In the case of properties/parcels with areas between 0.15ha and 0.4ha, and in the absence of any other significant physical constraints, the availability of land for effluent management usually increases proportionately with a corresponding improvement in the potential for sustainable DWM. The choice of options is likely to be slightly greater than that available for lots with useable area less than 0.4ha; however, detailed site and soil investigation is still important to identify the most appropriate solution as other bio-geophysical constraints may limit opportunities for sustainable DWM. Again, conventional systems may not be appropriate for these sites. These lots have been assigned a 'moderate' overall constraint class.

In most cases, lots larger than 0.4ha will have far fewer problems providing sufficient space for sustainable on-site DWM. For this reason, these lots have been assigned a 'low' constraint class. Overall constraint for DWM for these lots will be determined by the land capability constraints.

Lots with a useable area larger than 40ha already meet the criteria prescribed by the Minister for Water's Guidelines (DSE, 2012) and are deemed to be compliant.

For lots constrained by useable area, it might be possible to mitigate this constraint by:

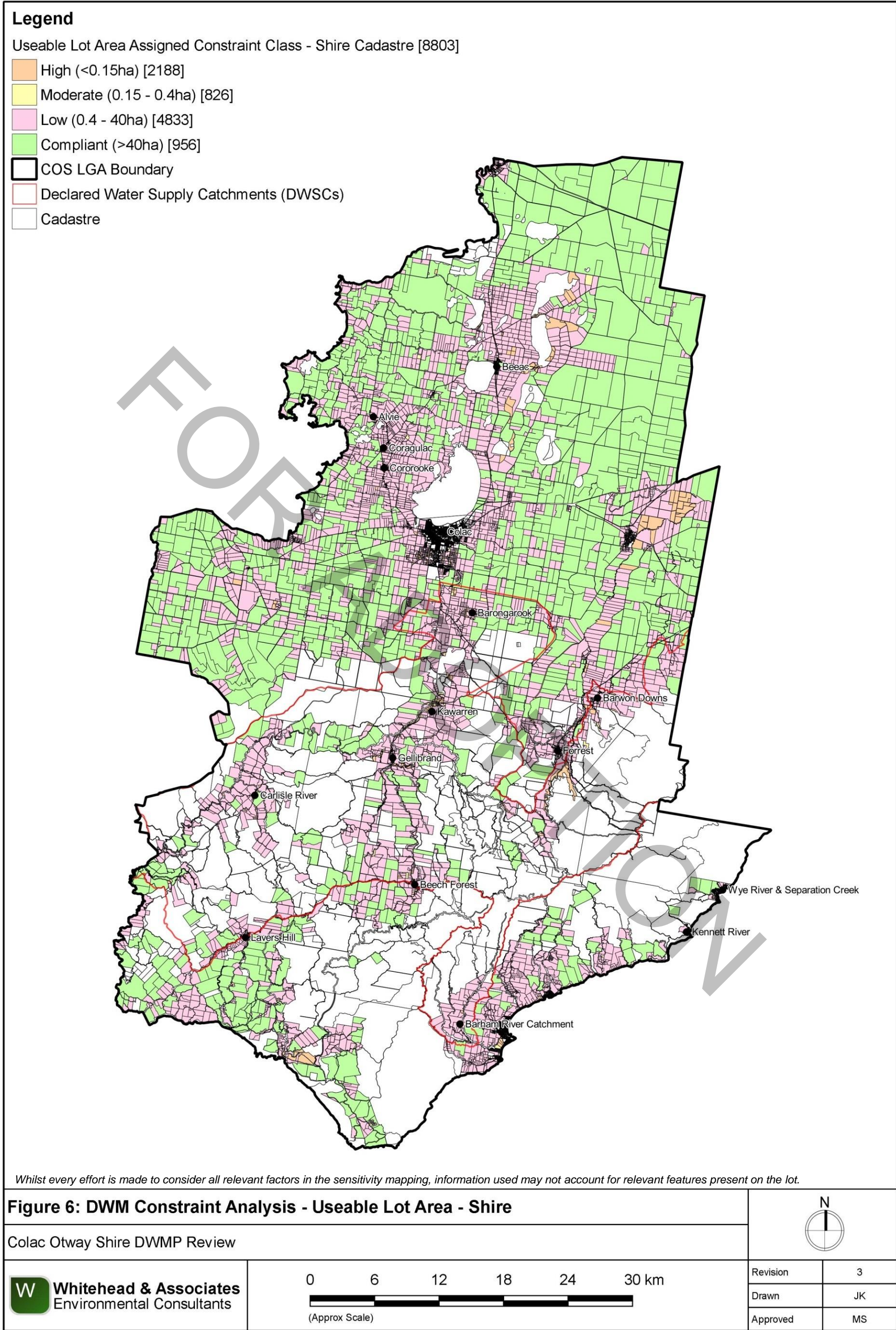
- Secondary treatment with an AWTS or sand filter;
- Secondary treatment with land application to trenches at higher loading rates as outlined in AS/NZS 1547:2012; or
- Increasing loading rate by use of sand mound.

Table 5 details the results of the useable lot area constraint analysis for the Shire. The associated DWM constraint map for the Shire is provided as Figure 6.

## Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

**Table 5: Useable Lot Area Constraint Map Summary**

	Total Lots	Total Number in Assigned Constraint Class			
		High	Moderate	Low	Compliant
		<0.15ha	0.15 – 0.4ha	0.4ha – 40ha	>40ha
Shire (Overall)	8,136 (750)	1,944 (273)	779 (49)	4,563 (325)	850 (103)
Alvie Town (Locality)	157 (4)	22 (0)	22 (0)	102 (3)	11 (1)
Barham River (Apollo Bay) Settlement (Locality)	309 (83)	33 (73)	21 (1)	250 (8)	5 (1)
Barongarook Settlement (Locality)	260 (2)	26(0)	16(0)	211(2)	7 (0)
Barwon Downs Town (Locality)	252 (8)	75 (2)	27 (1)	143 (5)	7 (0)
Beeac Town (Locality)	628 (14)	238 (4)	81 (2)	298 (5)	11 (3)
Beech Forest Town (Locality)	329 (3)	113 (1)	60 (2)	140 (0)	16 (0)
Carlisle River Town (Locality)	245 (1)	40 (0)	16 (0)	167 (0)	22 (1)
Coragulac Town (Locality)	175 (13)	36 (1)	30 (0)	109 (10)	0 (2)
Cororooke Town (Locality)	254 (31)	87 (15)	39 (5)	126 (8)	2 (3)
Forrest Town (Locality)	344 (5)	123 (2)	61 (1)	154 (2)	6 (0)
Gellibrand Town (Locality)	260 (5)	58 (0)	46 (0)	143 (5)	13 (0)
Kawarren Settlement (Locality)	212 (3)	69 (3)	16 (0)	121 (0)	6 (0)
Kennett River Town (Locality)	183 (0)	172 (0)	8 (0)	2 (0)	1 (0)
Lavers Hill Town (Locality)	189 (5)	61 (1)	24 (3)	92 (1)	12 (0)
Separation Creek Town (Locality)	129 (0)	121 (0)	1 (0)	7 (0)	0 (0)
Wye River Town (Locality)	376 (13)	319 (11)	44 (1)	10 (1)	3 (0)





#### 6.2.4 Current Planning Scheme Zone - Minimum Lot Size Compliance

As discussed in Section 6.2.3, area plays a key role in determining a lots' capacity for sustainable long-term DWM and influences the selection of appropriate DWM systems. The COS Planning Scheme sets out policies and requirements for the use, development, subdivision and protection of land. The requirements and particular provisions for each zone are detailed within the COS Planning Scheme. The current zonings for the Shire were thematically mapped to assist Council with future development opportunities and identification of constraints in relation to DWM.

COS is seeking to maintain a relaxation of Guideline 1 of the Guidelines for Planning permit applications in open, potable water supply catchment areas (DSE, 2012) from the Water Corporations. When this relaxation is granted and a higher density of development within a DWSC is permitted, then one of the requirements that must still be adhered to in accordance with 'Planning permit applications in open, potable water supply catchment areas' is that the minimum lot size specified for that zone must be met. The planning scheme zones were summarised into the fifteen (15) following zones and are appended as a thematic map in Appendix A:

- General Residential;
- Neighbourhood Residential;
- Township;
- Low Density Residential;
- Farming;
- Rural Activity;
- Rural Conservation;
- Rural Living;
- Commercial (1 & 2);
- Industrial (1 & 3)
- Public Park and Recreation;
- Public Conservation and Resource;
- Public Use;
- Road; and
- Special Use.

The majority of the Shire is in three zonings; Farming Zone in the northern section of the municipality, Public Conservation and Resource Zone in the southern region (relative to the Otway Ranges) and Rural Conservation Zone along the coastline.

Along with sewered lots, land zoned Road Zone, Public Park and Recreation Zone and Public Conservation and Resource Zone, was excluded from the cadastral dataset as the suitability of this land for on-site DWM is irrelevant. A vegetation informative map was generated to provide a visual distribution of the National Parks and State Forests within COS and is attached in Appendix A.

Existing land area and current zoning of the lots as per the COS Planning Scheme were used to determine whether existing lots complied with the minimum lot size as per the current zoning

requirements. The existing lot size was compared with the minimum lot size specified for the prescribed zone for each lot to determine its compliance. The COS Planning Scheme (2021) details the minimum lot size for each following zone: Farming zone 80 ha north of Princes Hwy and east of Ballarat Rd and 40ha elsewhere; Low Density Residential Zone 0.4ha if unsewered; Rural Activity Zone 0.5ha and 2ha for Colac East and 40ha elsewhere; Rural Conservation Zone 40ha; and Rural Living Zone 1.2ha for Elliminyt and 23ha elsewhere.

Table 6 details the results of the minimum lot size compliance with the planning scheme zoning requirements for the Shire. The associated DWM discrete constraint map for the Shire is provided as Figure 7.

FOR ADOPTION

## Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

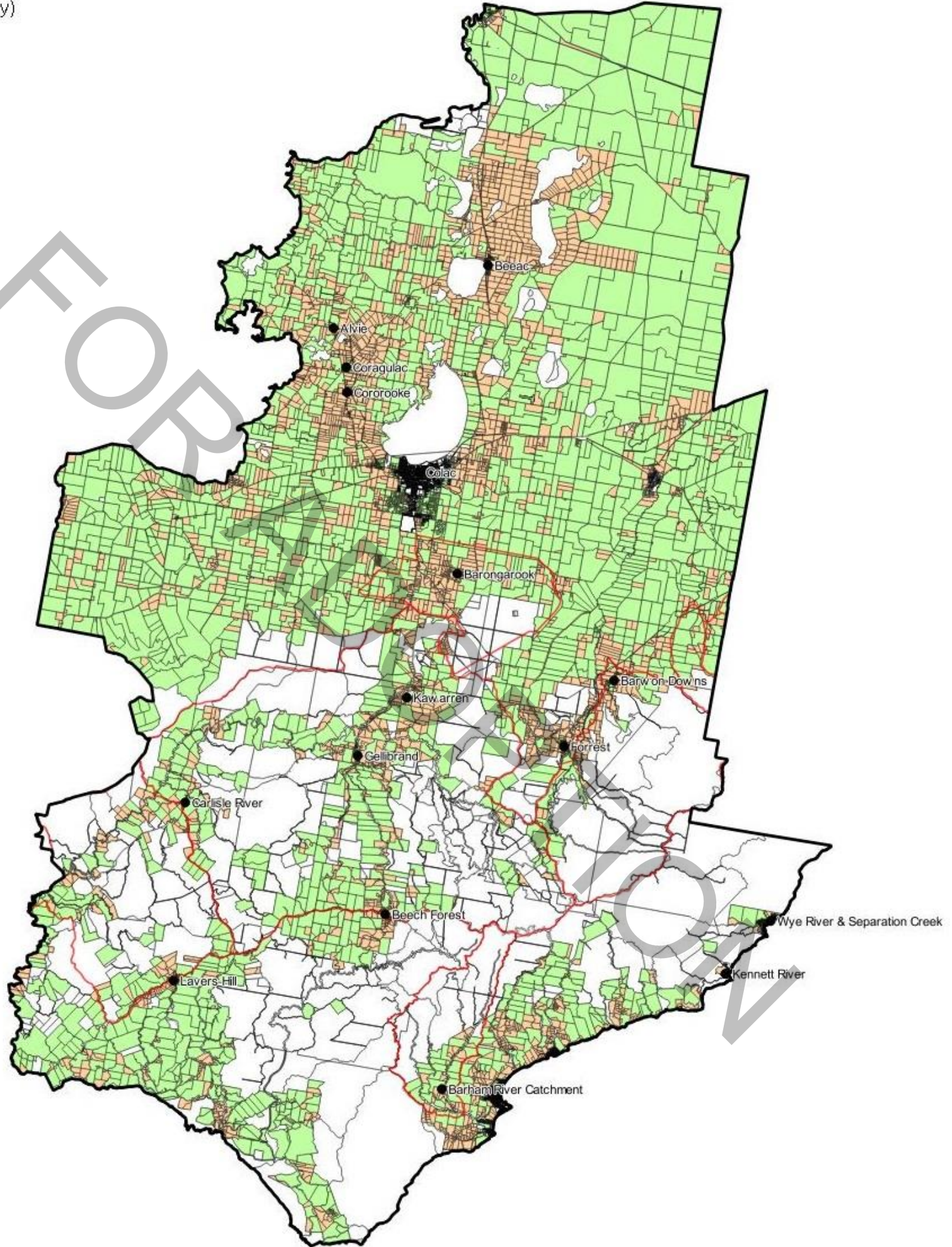
**Table 6: Current Planning Scheme Zone - Minimum Lot Size Compliance**

	Total Lots	Total Number in Assigned Constraint Class	
		Non-Compliant	Compliant
Shire (Overall)	8,136 (750)	4,763 (243)	3,373 (507)
Alvie Town (Locality)	157 (4)	118(3)	39 (1)
Barham River (Apollo Bay) Settlement (Locality)	309 (83)	258 (6)	51 (77)
Barongarook Settlement (Locality)	260 (2)	248 (2)	12 (0)
Barwon Downs Town (Locality)	252 (8)	146 (4)	106 (4)
Beeac Town (Locality)	628 (14)	368 (6)	260 (8)
Beech Forest Town (Locality)	329 (3)	156 (1)	173 (2)
Carlisle River Town (Locality)	245 (1)	148 (0)	97 (1)
Coragulac Town (Locality)	175 (13)	127 (6)	48 (7)
Cororooke Town (Locality)	254 (31)	190 (8)	64 (23)
Forrest Town (Locality)	344 (5)	179 (0)	165 (5)
Gellibrand Town (Locality)	260 (5)	170 (2)	90 (3)
Kawarren Settlement (Locality)	212 (3)	188 (0)	24 (3)
Kennett River Town (Locality)	183 (0)	4 (0)	179 (0)
Lavers Hill Town (Locality)	189 (5)	88 (2)	101 (3)
Separation Creek Town (Locality)	129 (0)	12 (0)	117 (0)
Wye River Town (Locality)	376 (13)	22 (1)	354 (12)

**Legend**

Minimum Lot Size Zoning Requirements in Relation to Existing Lot Size - Shire Cadastre [8803]

- Meets zoning requirements [3972]
- Does not meet zoning requirements [4831]
- COS LGA Boundary
- Declared Water Supply Catchments (DWSCs)
- DDO (Overlay)
- Cadastre



*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

**Figure 7: DWM Constraint Analysis - Minimum Lot Size Zoning Requirements - Shire**

Colac Otway Shire DWMP Review



0 6 12 18 24 30 km



(Approx Scale)



Revision	4
Drawn	JK
Approved	MS

### 6.2.5 Slope

The slope of the land affects what type, or even whether you can have, any wastewater disposal on the land. This is closely linked to the soil type and the soil's absorption capabilities.

AS/NZS 1547:2012 (Table K1) details a range of factors likely to limit the selection and applicability of land application systems, with slope gradient identified as one critical factor.

Steep slopes, particularly when combined with shallow or poorly drained soils, can lead to surface breakout of effluent downslope of the land application area. Conventional DWM systems are likely to be unsuitable and these lots will require a detailed site assessment and specific system design to produce a sustainable outcome. These steeply sloping sites are generally unsuitable for trenches and beds and can also be problematic for surface irrigation techniques. Conversely, flat and gently sloping sites are less likely to experience such problems and are considered lower risk.

Surface elevation for the Shire was gridded with a maximum cell size of 20m for the entire Shire and 5m for the localities (including the towns/settlements), with no vertical exaggeration to create a DEM. Where the 5m grids were derived, they took precedence over the 20m grid and an overall combined DEM was generated which is shown in Figure 8. The surface elevation for the Shire ranges from approximately 0m to 630m Australian Height Datum (AHD). Gridded slope data was derived from the DEM and combined with the cadastre data set to calculate the average slope as percent grade for each lot within the Shire. The average slope was based on the centroid of each lot. The slope ranged from 0 – 138%.

The following criteria were used to determine the DWM constraint classification on the average lot slope:

- High: lots that have an average slope greater than 12%;
- Moderate: lots that have an average slope, inclusive of, and between 8% and 12%; and
- Low: lots that have an average slope less than 8%.

For lots constrained by steep slope, it might be possible to mitigate this constraint by:

- Applying a lower soil (effluent) loading rate over a larger area;
- Designing an irrigation system to ensure even distribution of effluent over the slope; or
- Terracing to create a level LAA.

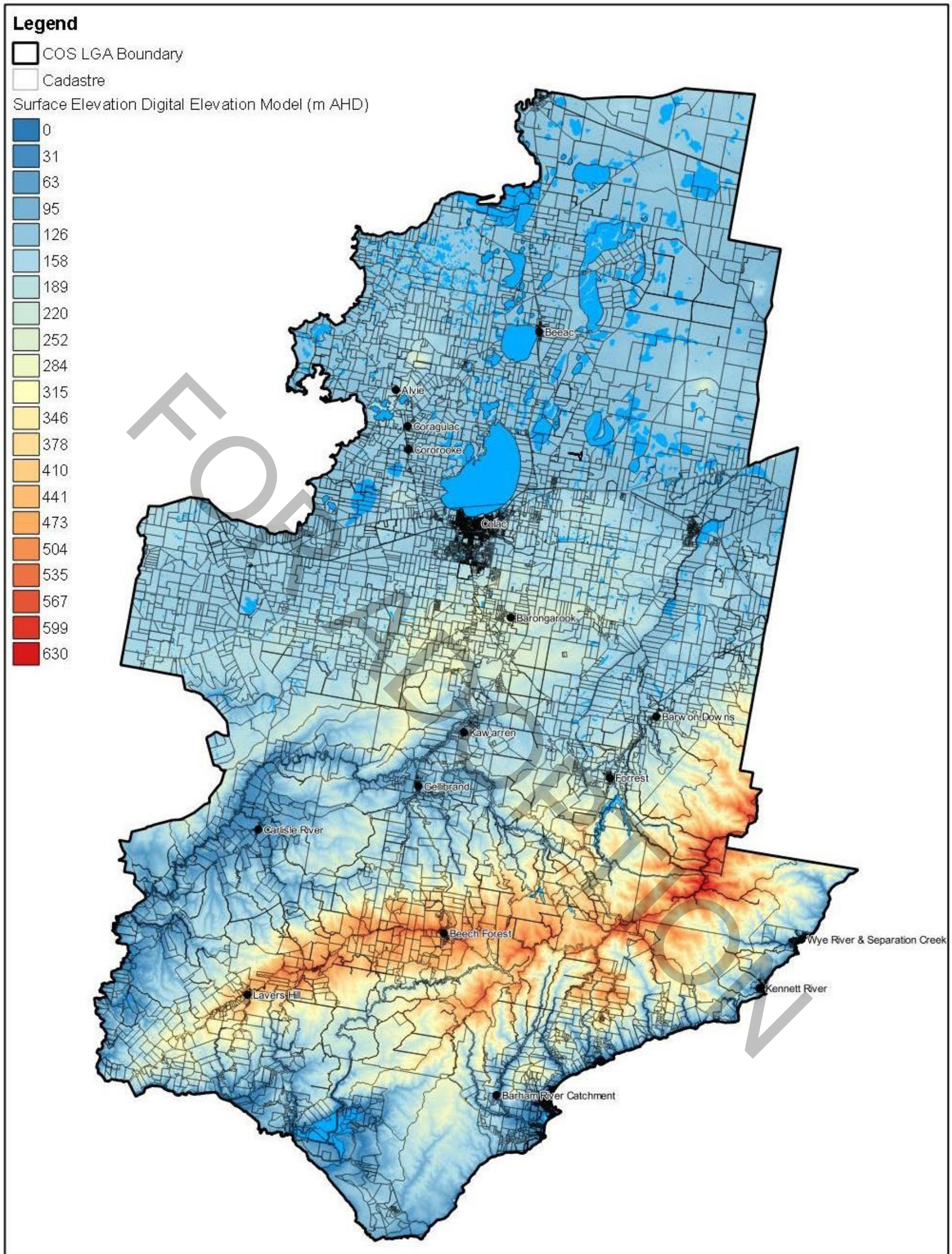
Table 7 details the results of the average lot slope constraint analysis for the Shire. The associated DWM discrete constraint map for the Shire is provided as Figure 9.

## Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

**Table 7: Average Lot Slope Constraint Map Summary**

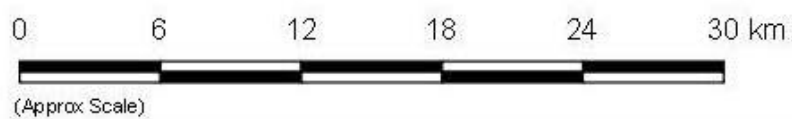
	Total Lots	Total Number in Assigned Constraint Class		
		High	Moderate	Low
		>12%	8 – 12%	<8%
Shire (Overall)	8,136 (750)	2,308 (93)	692 (69)	5,136 (588)
Alvie Town (Locality)	157 (4)	17 (0)	15 (0)	125 (4)
Barham River (Apollo Bay) Settlement (Locality)	309 (83)	267(18)	20 (21)	22 (44)
Barongarook Settlement (Locality)	260 (2)	15 (1)	48 (0)	197 (1)
Barwon Downs Town (Locality)	252 (8)	49 (0)	20 (2)	183 (6)
Beeac Town (Locality)	628 (14)	0 (0)	0 (0)	628 (14)
Beech Forest Town (Locality)	329 (3)	215 (1)	61 (1)	53 (1)
Carlisle River Town (Locality)	245 (1)	119 (1)	32 (0)	94 (0)
Coragulac Town (Locality)	175 (13)	1 (0)	1 (0)	173 (13)
Cororooke Town (Locality)	254 (31)	0 (0)	0 (0)	254 (31)
Forrest Town (Locality)	344 (5)	84 (0)	63 (0)	197 (5)
Gellibrand Town (Locality)	260 (5)	82 (2)	24 (0)	154 (3)
Kawarren Settlement (Locality)	212 (3)	58 (0)	74 (0)	80 (3)
Kennett River Town (Locality)	183 (0)	163 (0)	15 (0)	5 (0)
Lavers Hill Town (Locality)	189 (5)	95 (1)	53 (1)	41 (3)
Separation Creek Town (Locality)	129 (0)	111 (0)	5 (0)	13 (0)
Wye River Town (Locality)	376 (13)	362 (13)	7 (0)	7 (0)

Whitehead &amp; Associates Environmental Consultants

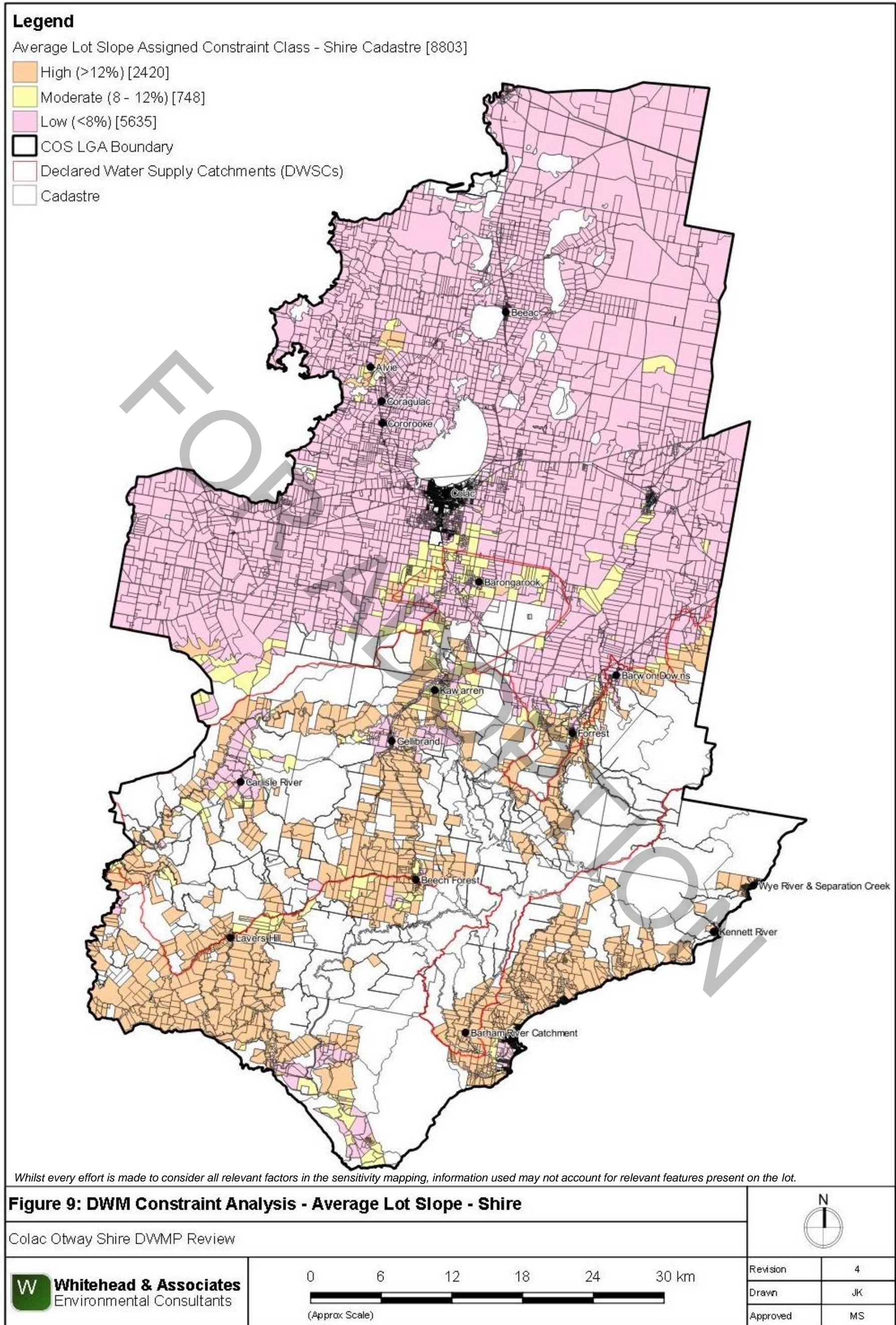


**Figure 8: Surface Elevation Digital Elevation Model - Shire**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS





### 6.2.6 Soil Suitability

Geology was also used as a reference towards the understanding of the soil and landform characteristics of the Shire.

The soil type and its absorption capabilities in this report refer to effluent treatment and what type of wastewater system is suitable. Soil that is not suitable for effluent treatment may be ideal for other uses such as farming and vice versa.

Soils and landform elements, along with associated lithology, play a vital role in the design, operation and performance of DWM systems. Key soil properties can be evaluated to assess a soil's capacity for absorption of wastewater, including soil texture, structure, depth, permeability, drainage characteristics, and depth to limiting layers such as bedrock, hardpans or watertables.

The surface geology of the Shire is shown in Figure 10 and the geological units were based on the 'Surface Geology of Victoria' dataset (1:250,000) that was obtained from GeoSciences Victoria (DEPI, 2011). The Shire is underlain by twenty-three (23) different surface lithological groups, with the northern region and the Otway Ranges underlain primarily by the Newer Volcanic Group and Eumeralla Formation, respectively.

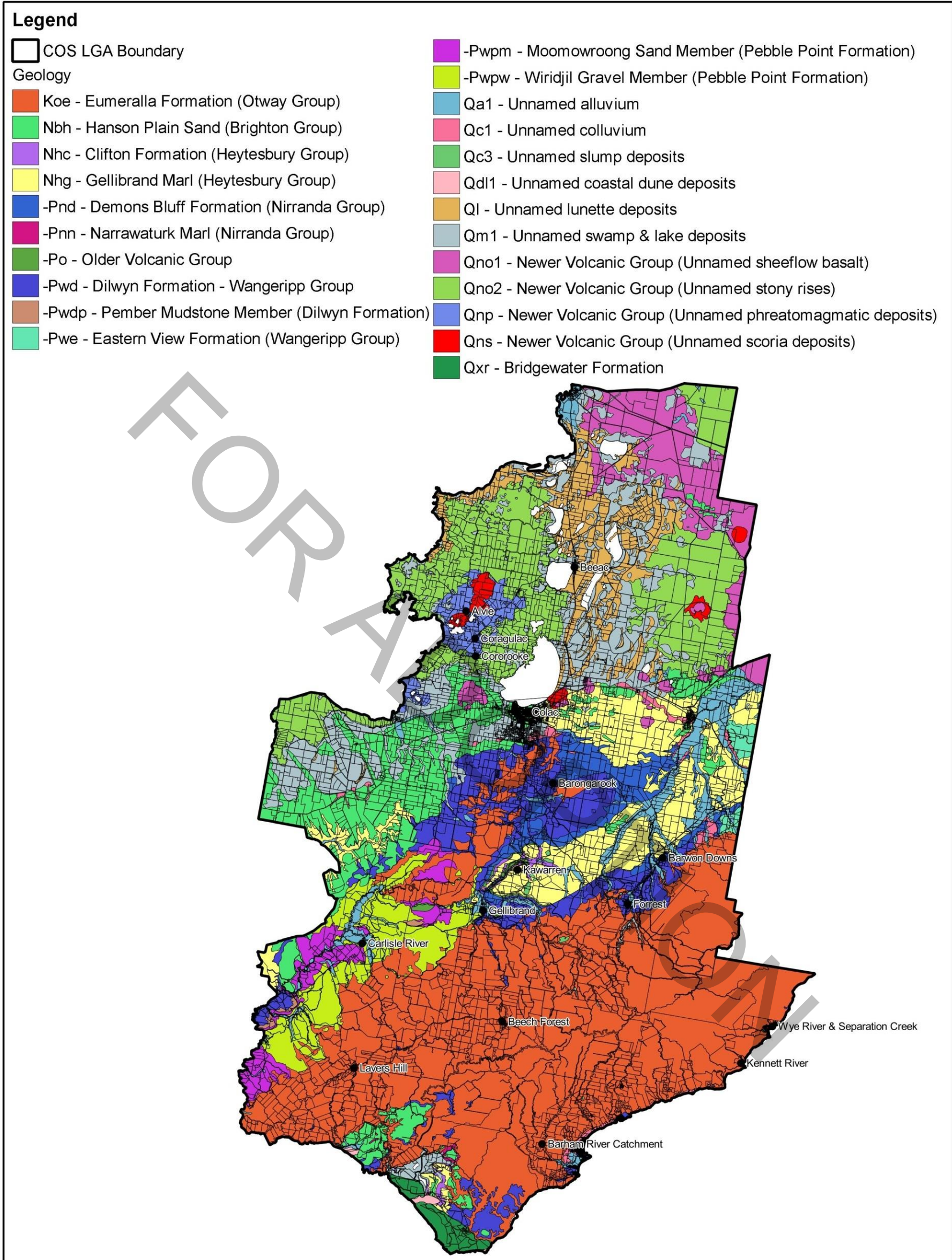
The most current soil-landform unit datasets were obtained from DELWP. The most current dataset, 'A Land Resource Assessment (LRA) of the Corangamite Region' (Robinson *et al.*, 2003), was used as the basis for the determination of soil suitability for DWM. The LRA draws substantially on earlier geology mapping and soil surveys, in particular those of Maher and Martin (1987) and Pitt (1981). Industry specific site investigations for dairying and cropping, a survey on a gas pipeline, and regional extension activities have provided other soil profile data. The purpose for this LRA was to integrate, within a new geomorphic framework for Victoria, map units and boundaries published in the earlier surveys to derive a consistent report and mapping for the region. The data (1:100,000) can only be effectively used as a strategic mapping tool for regional targeting of resources based on the location of susceptibilities in conjunction with other factors.

The LRA dataset provided different information on various soil and landform characteristics of the region; including, landform elements, slope, vegetation, soil description (Australian Soil Classification), topsoil and subsoil texture, depth of soil profile, soil structure, soil chemical characteristics, and many other productivity and land degradation constraints. There were fifty-seven (57) different soil landform units identified within the Shire. Figure 11 thematically identifies the different soil landform units and their associated locations. Refer to the accompanying LCA reports<sup>4</sup> for additional detailed descriptions on each of the soil landform units.

It is important to note that soil landform units are not homogeneous. Importantly, it should be noted that, at this mapping scale, soil attributes are expected to vary within soil landform units. Due to the degree of variance within each soil landform unit (e.g. due to the soil catena), the soil characteristics with the most dominant landform element proportion (e.g. greatest percentage) were used as a representation for that soil landform unit. Refer to the accompanying LCA reports for site specific data. Site specific investigations are required to confirm the broad scale assessment of the soil landform units, as the presence of a minor soil landform component could result in varying attributes to the predominant component used for the soil suitability constraint analysis.

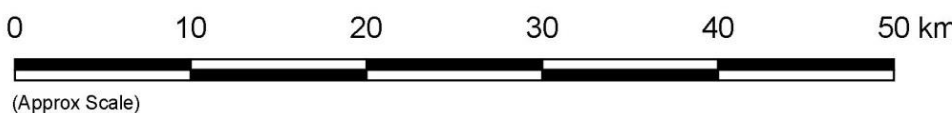
---

<sup>4</sup> <http://vro.depi.vic.gov.au/dpi/vro/vrosite.nsf/pages/soil-home>

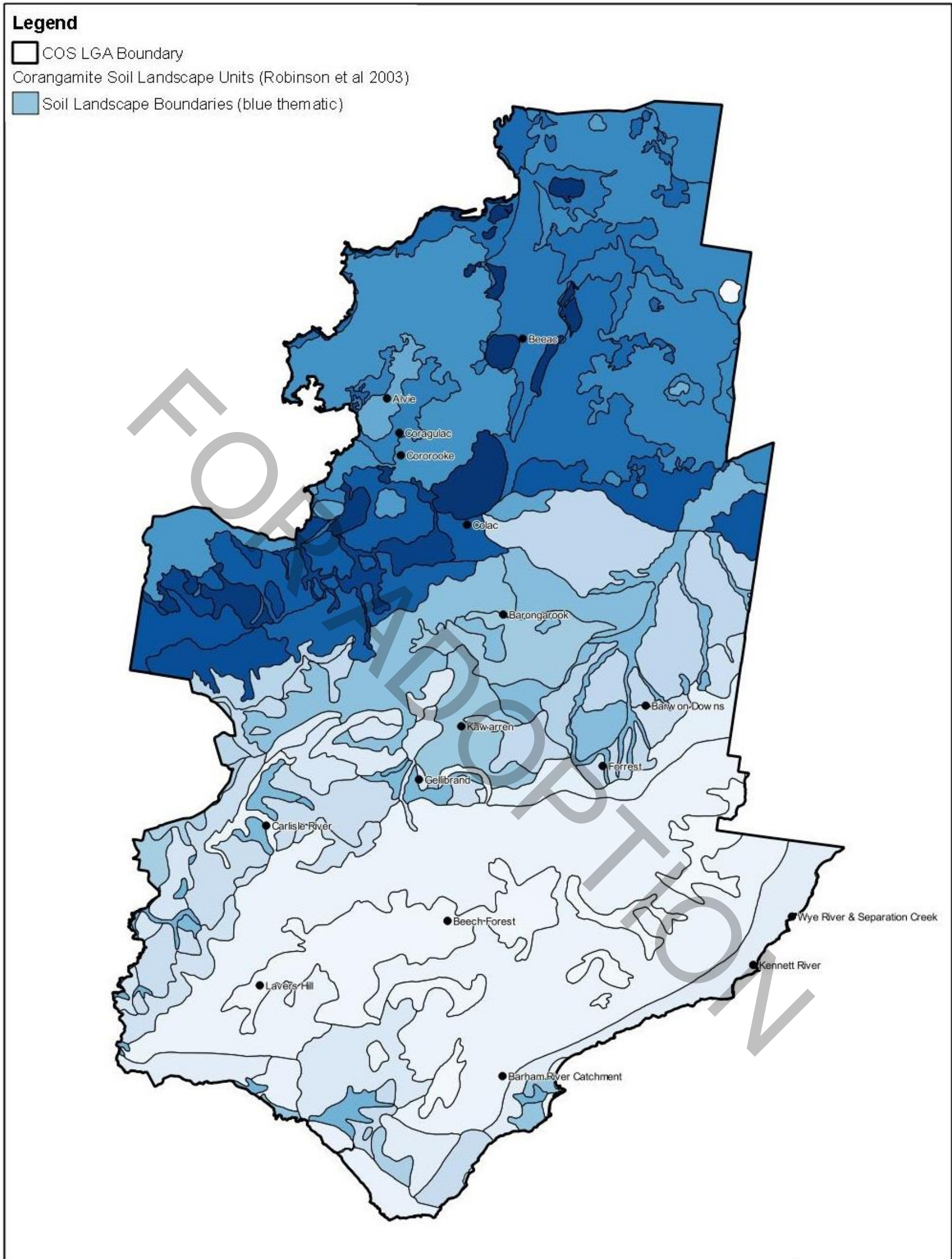


**Figure 10: Geology - Shire**

Colac Otway Shire DWMP Review

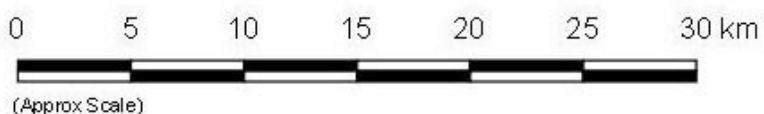


N 	
Revision	3
Drawn	JK
Approved	MS



**Figure 11: Soil Landscape Units - Shire**

1307 Colac-Otway Shire Council DWMP Review



Revision	3
Drawn	JK
Approved	MS

Whitehead & Associates Environmental Consultants

The soil landform unit dataset was analysed to determine the key soil attributes that relate to soil suitability for DWM. There is a significant inter-relationship that exists between various soil attributes, resulting in depth, hydraulic and limitation hazards used to assess the final soil suitability with the Shire. The degree of constraint, or constraint class, was assigned to each soil landform unit within the Shire based on available data and the professional judgement, skills and experience of the project team. Reference was also to the *AS/NZS 1547:2012*, the current EPA Code of Practice, and the experience of the project team in the design and monitoring DWM systems.

Table 8 below outlines each of the hazards and the criteria used for the soil suitability constraint classifications.

The depth constraint of the soil was based on the depth of the soil profile to the limiting horizon, i.e. hardpan, groundwater or bedrock, for each soil landform unit. The depth constraint classes were determined based on the minimum depth requirements for sustainable DWM and taking into account the minimum separation requirements of 600mm (*AS/NZS 1547:2012*) from the base of the land application system to the limiting layer. This benchmark depth was based on the most constraining DWM application system, in terms of depth, absorption systems (trenches and beds). Soil absorption systems require 300 – 600mm depth from the surface for utilisation and also need to adhere to the minimum 600mm separation to the limiting layer requirements. Therefore, the minimum depth required for the sustainable installation of an absorption system is around 1m depth, based on an absorption system at 400mm depth. Greater depths of unsaturated soil provide increased treatment of effluent and reduced potential for lateral water movement.

The hydraulic constraint of the soil was determined based on limiting soil texture, structure and permeability. A DWM system should be sized according to the most limiting soil horizon to ensure that an appropriate effluent loading rate is applied. In most cases, this will be the subsoil horizon as the soils within COS predominantly consist of gradational and texture contrast soils with clay subsoils. The constraint criterion for the hydraulic hazard parameter was based on the soil category of the limiting soil horizon for each soil landform unit (as used in *AS/NZS 1547:2012*). Indicative permeability was taken from the EPA Code of Practice (Table 9, Appendix A), but this can be superseded if in situ permeability testing data can be provided.

A limitation constraint of the soil was also considered, which was based on qualitative descriptions provided within the individual soil landform unit reports. The limitations include both physical and chemical characteristics of the soil. Soil limitation is difficult to quantify, as most limitations can be overcome by amending the soil or introducing a management practice.

The following limitations were considered with regards to DWM; nutrient retention, soil stability and physical retention. Specifically, these limitations refer to whether the soil is any of the following; dispersive, sodic, restricted drainage (waterlogging, seasonally high watertables, mottling), low fertility, low p-sorb, shrink swell (self-mulching), coarse fragments (including hardpans), very acidic (aluminium toxicity) or hardsetting.

	Consequence for DWM			
	Low		Mod	High
Dispersive				
Sodic				
Restricted Drainage				
Low Fertility				
Low P-sorb				
Shrink Swell				
Coarse Fragments				
Very Acidic				
Hardsetting				

A significance weighting was applied to each of the soil constraint parameters to reflect the influence that each parameter has on the design, construction and operation of DWM systems. The significance weighting was determined through discussion with project team members and coordination with the Stakeholder Working Group. The following significance weightings were applied:

- Depth Hazard: 1.2;
- Texture Parameter: 1.2;
- Structure Parameter: 0.9;
- Indicative Permeability Parameter: 1;
- Limitation Hazard: 0.7.

Where soil landform unit information was not available or was incomplete, the characteristic was conservatively inferred using professional judgement and available information. This was only relevant for soil landform unit 92, as the type soil profile data was unavailable.

Most importantly, some of the soil landform units associated with the targeted localities and towns/settlements were cross referenced with site and soil investigations undertaken by both Whitehead & Associates and Robert Van de Graaff & Associates on two separate occasions. Generally the observed soil characteristics were the same as the literature documented in Robinson *et al.* (2003) LRA. However, where characteristics differed, the soil landform unit for the particular region around the test site was updated with the field specific data.

Although the soil suitability constraint for a particular soil landform unit may be high, it does not necessarily mean that wastewater could not be sustainably managed on-site. It gives guidance to the loading rate and type of system(s) that could be suitable. It is important to note that site specific investigation is still necessary to confirm the regional constraint assessment and to determine the appropriate method for sustainable DWM.

For lots constrained by unfavourable soil, it might be possible to mitigate this constraint by:

- Secondary treatment with an AWTS or sand filter;
- Applying a lower (soil) loading rate; or
- Improving soil by amelioration or importation of good quality soil.

Table 9 details the results of the soil suitability constraint analysis for the Shire. The associated DWM discrete constraint map for the Shire is provided as Figure 12. The soil suitability for lots

within the Shire predominantly resulted in moderate to high constraint ratings due to the presence of clay subsoils derived from the basaltic lithology as mentioned above.

FOR ADOPTION

Table 8: Soil Suitability Constraint Classification Criteria

Hazard Type	Parameter	Class	Description	Significance Weighting (%)
Depth Hazard	Profile Depth	Low (1)	Greater than 2 metres profile depth	Greater depths of unsaturated soil provide increased treatment of effluent (renovation) and reduced potential for lateral water movement.  A significance of 1.2 (120%) is applied to the depth hazard rating for each soil to reflect the substantial influence this parameter has on the design, construction and operation of DWM systems.
		Medium (2)	Greater than 1 metre to less than 2 metres profile depth	
		High (3)	Less than 1 metre profile depth	
Hydraulic Hazard	Texture	Low (1)	Soil Category 2 & 3 (per AS/NZS 1547:2012). Dominant Sandy Loam (SL) to Loam (L) soils.	Used (along with structure) primarily to infer properties of soil permeability, porosity and aeration. Excessively free-draining soils (Cat 1) can be just as problematic as excessively poor-draining soils (Cat 6) for DWM. Soil 'renovation' capacity also linked to textural classification (i.e. OM content, Fe/Al content).  A significance of 1.2 (120%) is applied to the texture rating for each soil to reflect the influence this parameter has on the design, construction and operation of DWM systems.
		Medium - Low (2)	Soil Category 4 (per AS/NZS 1547:2012). Dominant Clay Loam (CL) soils.	
		Medium - High (3)	Soil Category 5 (per AS/NZS 1547:2012). Dominant Light Clay (LC) soils.	
		High (4)	Soil Category 1 or 6 (per AS/NZS 1547:2012). Dominant Gravel (G) or Sand (S) or Medium Clay (MC) to Heavy Clay (HC) soils.	
	Structure	Low (1)	Strongly structured soils (per AS/NZS 1547:2012) in the dominant horizon.	Refers to the general organisation and stability of 'natural' soils. The development and distinctness of individual soil units (peds) and the level of cohesion both within peds and between adjacent peds. Soil structure can be altered by anthropogenic activity (mechanical, chemical inputs etc.). Field assessment required, making quantification subjective. Used as a primary indicator of soil stability and secondary indicator of soil permeability (along with texture).  A significance of 0.9 (90%) is applied to the structure rating for each soil to reflect the variability of reporting and interpretation.
		Medium - Low (2)	Moderately structured soils (per AS/NZS 1547:2012) in the dominant horizon.	
		Medium - High (3)	Weakly structured soils (per AS/NZS 1547:2012) in the dominant horizon.	
		High (4)	Single-grained or Massive structure (apedal) soils (per AS/NZS 1547:2012) in the dominant horizon.	
	Indicative Permeability (K <sub>sat</sub> )	Low (1)	Indicative K <sub>sat</sub> within the range of 1.4m/d to 3.0m/d based on Soil Category 2b & 3a (per CoP 891.3, Table 9).	Initial values inferred from soil texture / structure (per CoP 891.3, Table 9) if no site-specific data available. In-situ permeability (permeameter) testing, per approved methods (i.e. AS/NZS 1547:2012) to be used if dedicated (site-specific) values are to be applied.  A significance of 1.0 (100%) is applied to the indicative permeability rating for each soil.
		Medium (2)	Indicative K <sub>sat</sub> greater than 3.0m/d or within the range of 0.5m/d to 1.4m/d based on Soil Category 1 & 2a or 3b & 4a (per CoP 891.3, Table 9).	
		High (3)	Indicative K <sub>sat</sub> less than 0.5m/d based on Soil Category 4b, 4c, 5a, 5b, 5c, 6a, 6b & 6c (per CoP 891.3, Table 9).	
	Limitation Hazard	Nutrient Retention	Low	Soils with minor limitations; may include minor low fertility (CEC) or acidity.
Soil Stability		Medium	Non-sodic/dispersive soils; with low P-sorb, restricted drainage, shrink swell or coarse fragments; may include minor low fertility (CEC) or acidity.	
		High	Soils with dispersiveness and/or sodicity; may include minor low fertility (CEC), low P-sorb, restricted drainage, shrink swell, coarse fragments or acidity.	

## Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

**Table 9: Soil Suitability Constraint Map Summary**

	Total Lots	Total Number in Assigned Constraint Class		
		High	Moderate	Low
Shire (Overall)	8,136 (750)	2,533 (177)	5,603 (573)	0
Alvie Town (Locality)	157 (4)	15 (0)	142 (4)	0 (0)
Barham River (Apollo Bay) Settlement (Locality)	309 (83)	76 (63)	233 (20)	0 (0)
Barongarook Settlement (Locality)	260 (2)	0 (0)	260 (2)	0 (0)
Barwon Downs Town (Locality)	252 (8)	19 (0)	233 (8)	0 (0)
Beeac Town (Locality)	628 (14)	592 (13)	38 (1)	0 (0)
Beech Forest Town (Locality)	329 (3)	285 (3)	44 (0)	0 (0)
Carlisle River Town (Locality)	245 (1)	42 (1)	203 (0)	0 (0)
Coragulac Town (Locality)	175 (13)	0 (0)	175 (13)	0 (0)
Cororooke Town (Locality)	254 (31)	0 (1)	254 (30)	0 (0)
Forrest Town (Locality)	344 (5)	28 (0)	316 (5)	0 (0)
Gellibrand Town (Locality)	260 (5)	123 (1)	137 (4)	0 (0)
Kawarren Settlement (Locality)	212 (3)	13 (0)	199 (3)	0 (0)
Kennett River Town (Locality)	183 (0)	0 (0)	183 (0)	0 (0)
Lavers Hill Town (Locality)	189 (5)	177 (5)	12 (0)	0 (0)
Separation Creek Town (Locality)	129 (0)	0 (0)	129 (0)	0 (0)
Wye River Town (Locality)	376 (13)	0 (0)	376 (13)	0 (0)



Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

**Legend**

Soil Suitability Assigned Constraint Class - Shire Cadastre [8803]

High [2741]

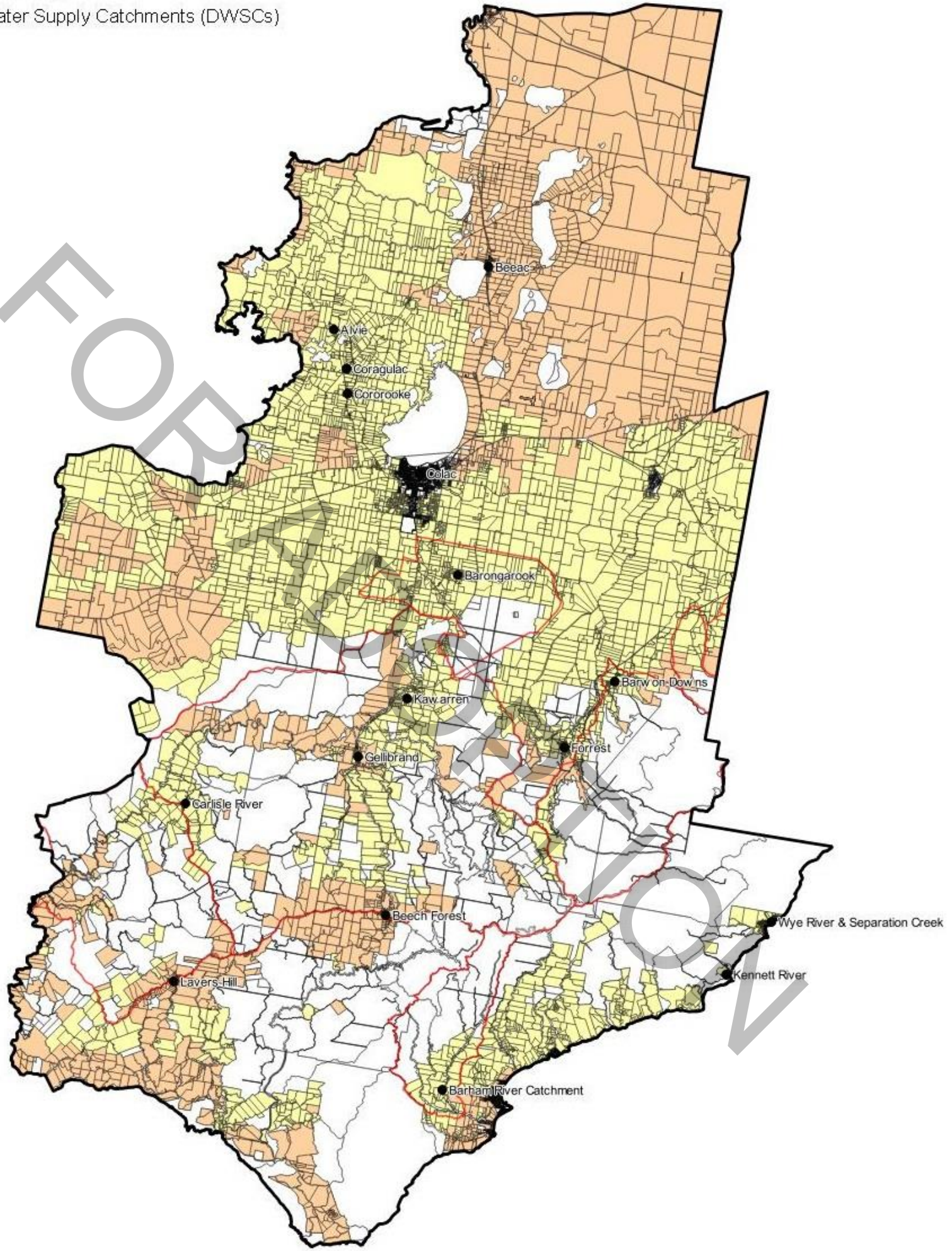
Moderate [6062]

Low [0]

COS LGA Boundary

Declared Water Supply Catchments (DWSCs)

Cadastre



*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

**Figure 12: Soil Suitability - Shire**

Colac Otway Shire DWMP Review



0 6 12 18 24 30 km



(Approx Scale)



Revision	4
Drawn	JK
Approved	MS

Whitehead & Associates Environmental Consultants

## 6.3 Sensitivity Overlay

A sensitivity overlay for landslip hazard and depth to groundwater has been generated for use by Council in conjunction with the final Risk Assessment map to determine if any additional constraints may impact on sustainable DWM at any given location within the Shire. These sensitivity overlays will be applied at Council's discretion upon reviewing any given lot.

### 6.3.1 Landslip Hazard

COS contains areas which are susceptible to landslip, including land throughout the Otway Ranges. The Otway Group, or Eumeralla Formation, is considered to be one of the most landslip prone geological units within the Shire. Landslips occur in both the rock and soil materials, even where the rock is not significantly weathered.

A number of geotechnical studies have been undertaken within COS by various public agencies, including 'Landslip Risk Management in Colac Otway Shire' and 'Landslip Risk Management Related to Wastewater Disposal' both undertaken by Dalhaus Environmental Geology Pty Ltd.

All land included in the Erosion Management Overlay (EMO1 - COS Planning Scheme) has been identified as having a sufficiently high risk of potential instability to warrant specific review of these risks prior to works as detailed in Schedule 1 to the EMO (COS Planning Scheme).

The landslip prone regions are shown in informative Figure A5, attached in Appendix A. The figure shows that the primary regions of landslip are found south of Lavers Hill, Beech Forest, Forrest and Gellibrand towns and along the coastline and hinterlands around the Apollo Bay, Kennett River, Wye River and Separation Creek towns. Council may request additional supporting documentation to be provided with regards to DWM in these regions.

### 6.3.2 Groundwater Depth

If the soil is saturated and the groundwater depth is shallow, then there is a greater possibility of contaminating groundwater and increasing surface water runoff. This is particularly important in selecting the type of DWM system.

The depth to groundwater has direct implications on future development opportunities and can constrain the use of a DWM system. The location and type of land application system that can be installed on an individual lot will be limited by the depth to groundwater at the site. If applied effluent moves into saturated soils, i.e. shallow groundwater located beneath a LAA, then potential contamination of the groundwater, aquifer and/or surface waters could occur. Saturated subsurface conditions are considered to be the most conducive to pathogen transport.

The current EPA Code of Practice states that a minimum depth of 1.5m must remain between the base of the land application system and the seasonal watertable. The greatest depth to groundwater from the natural ground surface would be required for trenches and beds, which are generally built to 600mm depth. Therefore, the minimum required depth to groundwater from the natural ground surface would be 2.1m. If this buffer cannot be maintained, a detailed DWM system design would be required. This calculated minimum depth to groundwater vertical setback distance is conservative; however, soil type would be the defining characteristic. For example, if the soil beneath the base of the LAA is sand, then the associated hydraulic conductivity would be high, with treated effluent reaching the groundwater table at a much quicker rate than if the soil was clay. Therefore, site specific DWM design is required in regions where the depth to groundwater may be an issue, and the appropriateness of the required vertical setback distance to groundwater will need to be assessed.

Groundwater depth within the Shire was inferred from the groundwater bore data from the WMIS Database Interface as managed by DELWP; this is the same dataset used for the proximity to groundwater bores constraint analysis. A total of 294 groundwater bores (as at 2015), located within and around the vicinity of the Shire based on the WMIS DEPI data, were used in the depth to groundwater analysis. The depth of groundwater from the natural surface was time-series monitored for each of these bores as part of the State Observation Bore Network (SOBN). The average reduced water level of the time-series data for the groundwater depth was assigned to each bore. The groundwater bores and associated depths to groundwater were then spatially mapped as point data using GIS. The point data was gridded with no vertical exaggeration (maximum cell size of 20m) to create a Digital Elevation Model (DEM). The groundwater depths are summarised along a thematic colour gradient from surface water (negative values) (deep blue) to 245m (red), with an average depth of 21.5m. Gridded groundwater depth data was derived from the DEM and combined with the cadastre data set for the centroid of each lot. This interpolates an average depth to groundwater for each lot within the Shire which is covered by the extent of the DEM.

The following criteria were used to determine the DWM constraint classification for the depth to groundwater (based on the centroid of each lot):

- Non-Compliant (high risk): lots that have an average groundwater depth less than the minimum vertical separation distance of 2.1m as stipulated by the current EPA Code of Practice; and
- Compliant (low risk): lots that have an average groundwater depth more than the minimum vertical separation distance of 2.1m as stipulated by the current EPA Code of Practice.

The resultant groundwater depth and groundwater depth compliance maps are attached as informative Figures A6 and A7, respectively, in Appendix A. The depth to groundwater compliance mapping showed that there were 4,542 compliant and 1,496 non-compliant lots within COS based on available data.

Due to the limited number of groundwater bores with water level information, there are regions within the Shire that were not able to be included in the analysis, particularly in the southern half of the Shire. There were lots throughout the Shire, primarily in the southern region, that was not covered by the DEM and were excluded from the depth to groundwater analysis due to lack of data. These are shown as white in the respective map. Due to lack of available data, the depth to groundwater compliance is to be used for informative purposes only and site specific investigations will be necessary to determine the depth of groundwater in the regions with no available data or for those lots that are non-compliant.

For lots constrained by groundwater depth (shallow groundwater), it might be possible to mitigate this constraint by:

- Secondary treatment with an AWTS or sand filter; or
- Increasing separation distance between point of land application and watertable by constructing a raised bed or sand mound.

### 6.3.3 Vegetation

The National Parks and State Forests within COS have also been mapped and are presented as an informative map as Figure A7 in Appendix A. The Otway Ranges within the DWSCs is dominated by protected vegetated regions, which are also extensive along the Great Ocean Road extending into the north of the Apollo Bay, Wye River and Separation Creek localities. Great

Otway National Park and Otway Forest Park form the primary classified vegetative areas within this region. The Otway Forest Park includes the mountain and foothill forest of the northern fall of the Otway Ranges, adjacent to the Great Otway National Park. The northern region of COS includes protected lakes of the Western Volcanic Plains.

#### **6.4 Risk Assessment Summary**

It is evident that variability in constraint exists between the targeted localities and towns/settlements within the Shire. Further detailed studies into the performance of existing on-site DWM systems within each of the targeted unsewered localities and towns/settlements is recommended to verify the findings of this broad-scale risk assessment, to provide a more detailed study on maximum lot development density and hence minimum lot size in proposed development areas. This will aid Council in ensuring future development will not adversely impact environmental and public health. The Sensitivity Analysis, which consolidates the individual constraints, is detailed in Section 4.1 of the Operational Plan.

FOR ADOPTION

## 7 Land Application System Sizing Tables (Water Balance)

### 7.1 Overview

Water balance modelling was undertaken to determine the minimum footprint areas for a broad range of effluent land application systems that could be used in unsewered properties in the Shire. The effluent land application systems that have been sized and included in the Sizing Tables include subsurface irrigation, conventional absorption trenches and beds, ETA trenches and beds, LPED irrigation systems, and wick trenches. No Sizing Tables for Mounds are given as they will require site-specific design by a suitably qualified person. Explanations for these land application systems are detailed in Appendix A of the DWMP Operational Document (2015 as amended).

All six of the AS1547:2012 soil categories were used in the modelling, for three household sizes (based on number of bedrooms and likely maximum occupancy rate, for domestic dwellings). The results are provided in the System Sizing Tables (in the Locality Reports in Appendix B), which summarise the minimum basal (or 'wetted') area and the likely minimum total footprint area (including minimum spacing for trenches and beds) for different systems.

The Sizing Tables are suitable for designing land application systems for Low and Moderate Risk properties only. If your locality is not provided as a Locality Report in Appendix B, you can use the System Sizing Tables for the nearest locality (i.e. Colac/Elliminyt can utilise Barongarook).

Where the EPA Code of Practice states that the system type is not suitable for the type of soil, or the soil and climate characteristics of the location render the system type unsuitable, 'not applicable' (NA) is shown in the Sizing Table. 'Impractical' is noted when the system type can be used, but the resultant size of the land application area would not be practical primarily due to associated costs of construction.

### 7.2 Water Balance Methodology

A water balance is a means of incorporating the impact of rainfall, evapotranspiration and plant and soil moisture fluxes into the design of effluent land application systems (from trenches to irrigation systems). Water balance is a critical factor in the effective design and operation of effluent land application systems. This is particularly relevant for the higher rainfall areas in the southern half of the Shire.

A simplistic water balance is expressed by the following equation:

$$\text{Precipitation} + \text{Applied Effluent} = \text{Evapotranspiration} + \text{Percolation} + \text{Runoff}$$

On the left hand side of the equation are the water INPUTS, factors that add to the moisture within an irrigation field. On the right hand side of the equation are the water LOSSES, factors that reduce the moisture content within an irrigation field. For a land application area to be balanced hydraulically the INPUTS should be equal to or less than the LOSSES, otherwise hydraulic overloading and failure may result if the inherent moisture storage capacity of the irrigation field is subsequently exceeded.

Rainfall data can be obtained from the Bureau of Meteorology and commonly water balances are undertaken using conservative monthly rainfall data for a local weather station. Pan evaporation (Class A Pan) is less readily available, and usually is only available for selected weather stations.

Evapotranspiration is the combination of evaporation and transpiration of moisture from the soil through the open pores in the leaves of plants. Evapotranspiration rates vary with changes to soil and air moisture as well as season, but can be estimated by applying appropriate monthly crop factors to pan evaporation data.

Percolation is equivalent to the rate of deep drainage of both rainfall and applied effluent through the soil and is controlled mainly by soil properties, but also in part by slope and other factors. The runoff factor allows for the fact that not all rainfall that falls on a ground surface will actually infiltrate the irrigation field and so contribute to soil moisture. During periods of high rainfall, the soil becomes saturated and excess rainfall runs off as it cannot percolate into the soil.

If all factors in the water balance are expressed in terms of millimetres (mm) per month, then it is possible to solve the equation to determine a minimum land application area (footprint) such that the LOSSES match or exceed the INPUTS. This is usually done using pre-prepared spreadsheets to simplify the numerous calculations involved in running the balance for each month of the year.

The water balance methodology used for the Sizing Tables is the same as that described in the MAV Land Capability Assessment Framework (2014) and the specific inputs are discussed below.

## **7.3 Water Balance Inputs**

### **7.3.1 Daily Wastewater Load**

The daily wastewater load is the product of the design occupancy rate and the wastewater generation in L/person/day.

The current EPA Code of Practice specifies that the design occupancy rate is the number of bedrooms (including any rooms that could be used as a bedroom with a closable door, such as a study or library) plus one (number of bedrooms +1). For example, a four bedroom home is expected to accommodate up to 5 persons in the normal course of events (this does not include accommodation, businesses or holiday homes). This takes into account the future potential occupancy, not just the current occupancy (which may be much smaller).

Table 4 of the EPA Code of Practice (2016) specifies a wastewater generation rate of 180L/person/day for households with standard water fixtures. The water balance uses this figure. However, where it can be demonstrated that full-reduction fixtures have been, or will be, installed in the household and will remain in place, then a design loading rate of 150L/person/day, in accordance with *AS1547:2012* can be adopted for a site-specific DWM design. Alternatively, if tank water is the only water source onsite, then a design loading rate of 120L/person/day, can be used in accordance with *AS1547:2012*, and the results in the System Sizing Tables will not apply.

The design wastewater loads used in water balance modelling are shown in Table 10a-c below.

**Table 10a: 180L/p/day - Design Wastewater Loads for Water Balance Modelling**

No. Bedrooms	Design Occupancy	L/person/day	L/household/day
2	3	180	540
3	4	180	720
4	5	180	900
5	6	180	1,080

**Table 11b: 150L/p/day - Design Wastewater Loads for Water Balance Modelling**

No. Bedrooms	Design Occupancy	L/person/day	L/household/day
2	3	150	450
3	4	150	600
4	5	150	750
5	6	150	900

**Table 12c: 120L/p/day - Design Wastewater Loads for Water Balance Modelling**

No. Bedrooms	Design Occupancy	L/person/day	L/household/day
2	3	120	360
3	4	120	480
4	5	120	600
5	6	120	720

### 7.3.2 Climate Data

For this project, interpolated rainfall and evapotranspiration data for each unsewered locality has been obtained from SILO and BoM databases, as discussed in Section 6.2.2 above. 70th percentile rainfall and average evapotranspiration data were used to create unique water balances for each system type for each locality. The data point closest to the town/settlement was used for the water balance, and in some cases more than one town/settlement shares the same climate data point due to proximity to that data point.

### 7.3.3 Runoff Factor

Conservative annual runoff factors of 10% (90% infiltration of rainfall) have been adopted for soil absorption systems (e.g. trench, bed etc.) and 20% (80% infiltration) for drip and spray irrigation systems in the Shire, which is likely to be an underestimate for the higher rainfall areas on and around the Otways.

### 7.3.4 Soil Type and Design Loading Rate or Design Irrigation Rate (DLR or DIR)

The DLRs and DIRs for the commonly used EPA-accepted methods of land application of effluent (as listed in Appendix A, Table 9, of the EPA Code of Practice, 2013) were used as the basis of water balance modelling and the sizing of the land application areas for all systems. All listed systems except for mounds were modelled, as mounds require a site-specific design which accounts for site factors (including, but not limited to ground slope). For simplicity, every soil

category (and subcategories depending on soil structure), have been modelled, regardless of whether they are observed in the locality. It is noted that most towns will only have two or three soil types, and that the system sizing's provided for the other soil types are irrelevant for that location (unless a significant amount of topsoil is imported for the construction of the land application system, which is not common).

The DLR or DIR should be selected for the most limiting soil layer (usually the heavier-textured subsoil horizons). Where data was absent from the current EPA Code of Practice, average values were selected from *AS1547:2012* (Table 5.2). For instance, the current EPA Code of Practice does not specify DLRs for absorption or evapotranspiration (ETA) beds for gravels, sands or weakly structured sandy loams, but acknowledges that these systems may be appropriate if the soil does not have a high perched or seasonal groundwater table.

#### 7.4 Implications for High Rainfall Areas

The water balance is **highly** sensitive to the Design Loading Rate (DLR) or Design Irrigation Rate (DIR) selected. The DLR and DIR are considered to be conservative or 'safe' deep drainage percolation rates for land application systems that are sustainable for the long term. However, deep drainage percolation in DWM land application areas is not widely understood and the high variability of soil dynamics across regions means that a 'one size fits all' approach may not be the most appropriate method for designing a land application system for a particular site.

If the selected DLR or DIR, taken from the EPA Code of Practice, 2016 (Appendix A: Table 9), is low due to heavy-textured soils and the site is in a high rainfall region, then the required minimum land application area is proportionately large. This can pose difficulties for design and installation, particularly for systems that use gravity dosing (which is far less effective for large systems compared to pumped dosing). LAAs that were deemed as not likely to be practical are highlighted in the Sizing Tables.

Some locations within the Shire feature areas of particularly high rainfall and low winter evapotranspiration, which presents a case whereby the water balance, is unresolvable and therefore cannot produce consequential data. For these areas, Lavers Hill, Beech Forest, and the Barham River catchment (known as 'Paradise'), the water balance method as described above cannot be used to predict the minimum required area for effluent land application, and a site-specific, detailed system design is required. As a result of the water balance, the majority of properties in these localities are likely to be rated as High or Very High Risk, and therefore the Sizing Tables are not applicable. There may be lots in high rainfall areas that also have an unresolvable water balance in addition to the above mentioned localities.

The Bureau of Meteorology (BoM) website shows five rainfall stations on the Otway Ridge; Lavers Hill, Weeaprounah, Barramunga, Beech Forest and Wyelangta, with the latter two still actively recording rainfall. 70<sup>th</sup> percentile monthly rainfall from the active station that is closest to the Otway Ridge location being assessed should be used in any water balance; e.g. for Lavers Hill, the 70<sup>th</sup> percentile monthly rainfall from the Wyelangta BoM rainfall station should be used. The 70<sup>th</sup> percentile monthly rainfall from the Wyelangta and Beech Forest BoM rainfall stations is tabulated in Appendix C.

Furthermore, the water balance and prescribed DLRs and DIRs do not take into consideration the possibility that the soil and/or bedrock in some high rainfall areas may have a natural permeability that is higher than that assumed from its textural category. In such instances, the DLR or DIR could be sustainably increased, thereby allowing for a smaller system footprint. A site-specific water balance would require detailed soil testing (including constant-head permeameter testing)

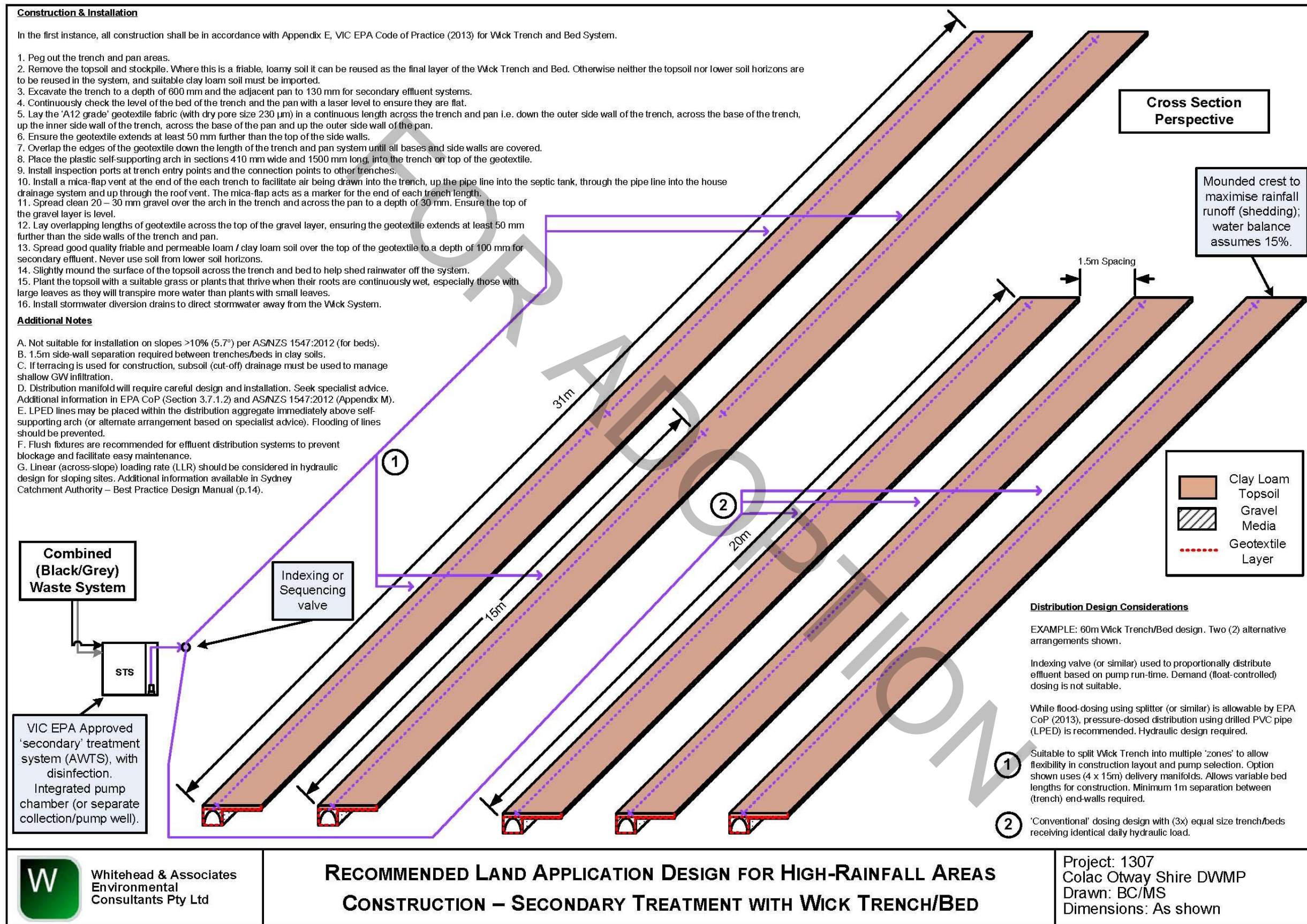


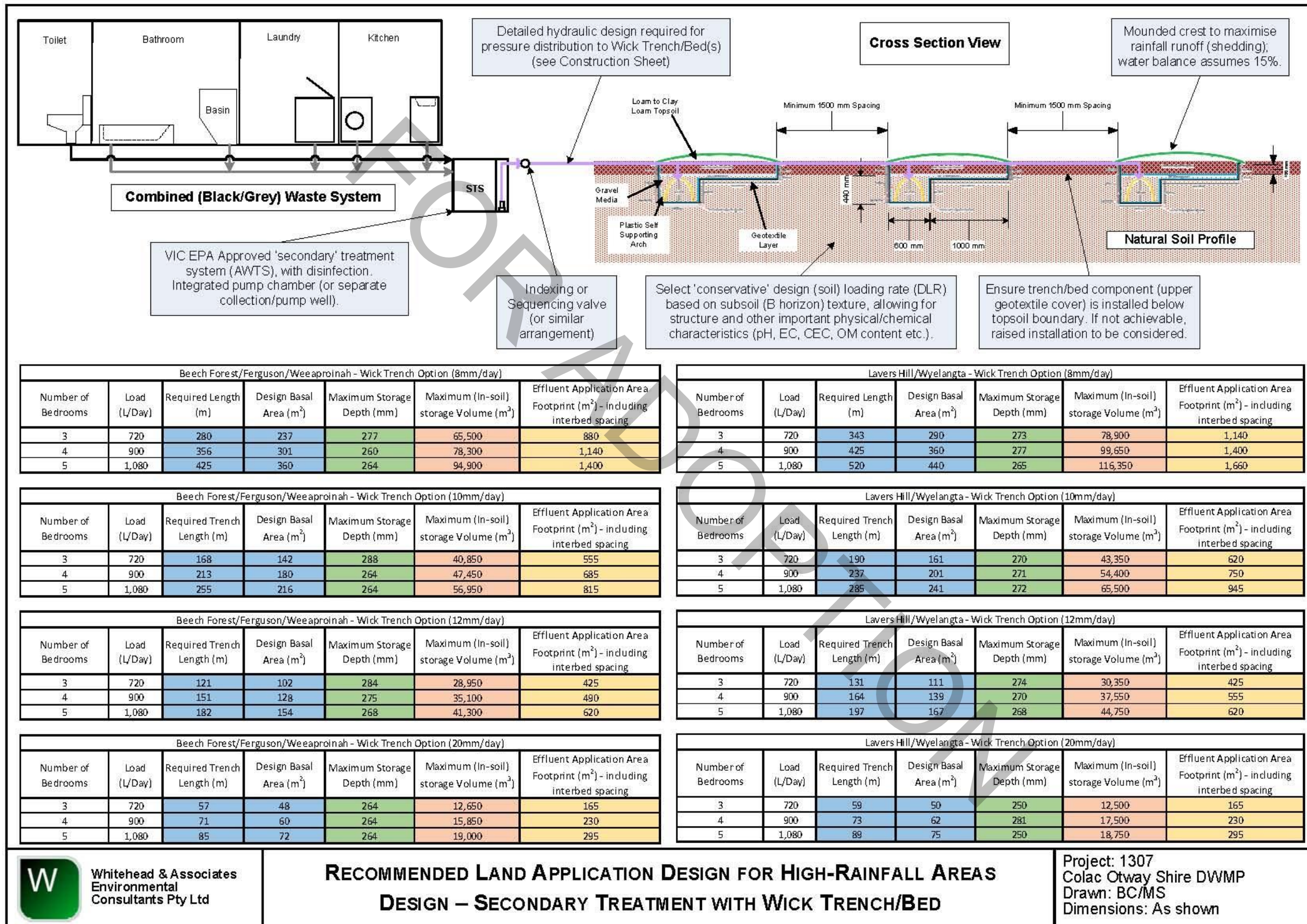
to clearly demonstrate that the soil can sustainably accommodate a higher effluent loading, year-round. This approach is suitable for properties that are rated as Low, Moderate or High Risk.

In these high rainfall areas, site-specific design to select and size an appropriate DWM system and effluent disposal method is required to ensure that DWM is sustainable with no off-lot discharge. Innovative designs may be required and overarching measures to assist in managing the wastewater in these regions may include minimising wastewater generation, increasing reuse and increasing the land application footprint. It should be noted that there may be cases in which an appropriate solution cannot be devised or in which costs are prohibitive.

Council engaged W&A to undertake a detailed design for a recommended alternative LAA design for the high rainfall areas. The following standard drawings and sizing tables can be used for the high rainfall areas.

FOR ADOPTION





## 7.5 Footprint Area of Land Application Systems

The size of a land application system depends not only on the volume of the effluent to be applied, the quality of the soil and on local rainfall, but also on how the system is laid out and on the spacing of components (e.g. trenches) and the width of mandatory setbacks.

In a subsurface irrigation system, the drip-lines are often closely spaced and the land may be considered to have an even loading. Therefore, the total land application area is the required area as specified by the water balance (plus any setbacks which must be maintained). Irrigation systems can be designed to best fit the most suitable area, provided that the pump is capable of delivering effluent evenly throughout the entire system.

For absorption and ETA trenches and beds, wick trenches and Low Pressure Effluent Distribution (LPED) systems, a minimum spacing between trenches or beds must be observed to prevent overloading of the soil between them. The current EPA Code of Practice or *AS1547:2012* specifies minimum spacing's, which have been used to estimate a typical footprint area of the system, on the assumption that the longest acceptable trench or bed length has been used. These values are provided in the individual model spreadsheets for each system type. It is highlighted that the 'typical footprint' is indicative only, and is likely to represent the minimum footprint for a well-laid out system. The final area must be determined by the system designer/installer as part of the final DWM design (for all risk category lots).

## 8 Sub-catchment Analysis

The Minister for Water's (2012) Guidelines for planning permit applications in potable water supply catchments specify that, to avoid the blanket application of a 1 in 40 hectare dwelling density in DWSCs, a DWMP must include consideration of the broader cumulative impact of DWM systems within a catchment. Aggregated 'cumulative' risk is area dependant, therefore it is important to delineate manageable areas for investigation and analysis. The DWSCs were therefore divided into smaller 'sub-catchments' so that the cumulative risk could be identified and to assist in prioritising further assessment and management resources. Sub-catchments are delineated based on areas of concern; whether that refers to offtake points, water quality sampling points or towns/settlements. The aim is to identify areas of concern that may pose a potential impact on water quality.

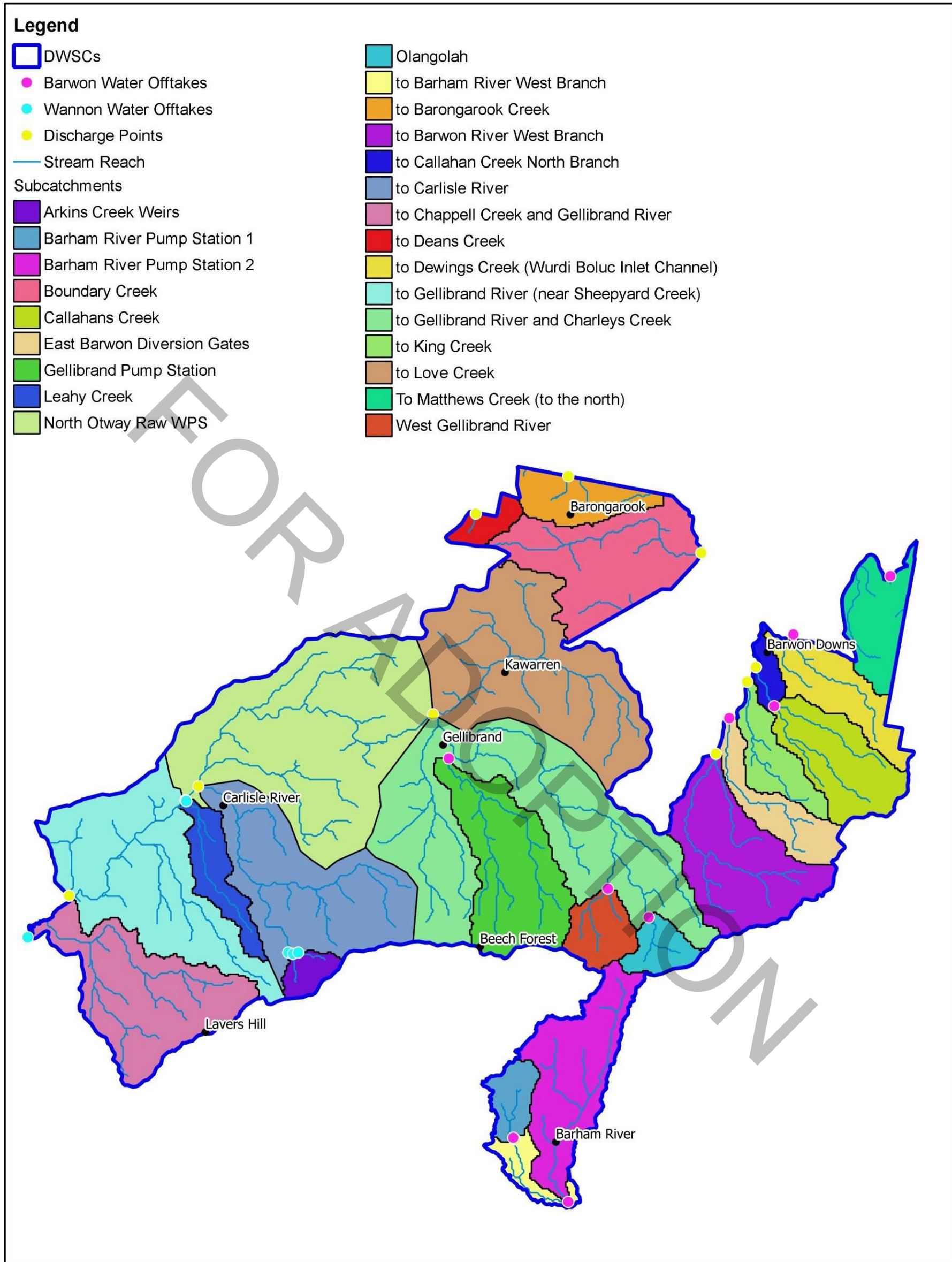
The sub-catchments were delineated using the TauDEM Sub-catchment Delineation tool in QGIS™. The Digital Elevation Model (DEM) developed in Section 6.2.5 and Water Corporation identified offtake and discharge points were used to inform the delineation of the sub-catchment boundaries. There are 9 identified Barwon Water offtakes, 5 identified Wannon Water offtakes and 10 identified discharge points. The Barwon Downs Wellfield Intake offtake points (seven in total) that refer to groundwater and multiple North Otway Wannon Water offtake points that are located in the same locality are not included in the sub-catchment analysis. For the purposes of this analysis, a sub-catchment is an area of terrain with one single outflow point. The residual regions were subdivided into a number of larger sub-catchments based on their discharge points.

Sub-catchment analysis can be applied at a variable scale. In addition to delineating the sub-catchments based on offtake and discharge points, smaller sub-catchments were delineated based on the town/settlement boundaries for the targeted unsewered towns/settlements located within the DWSC. The aim is to prioritise both the towns/settlements and sub-catchments within the DWSCs and to determine the relative contribution of risk of the town/settlement development within the larger sub-catchment.

Figure 13 shows the delineated sub-catchments and towns/settlements within the DWSC and the relative offtake and discharge points. The sub-catchment analysis resulted in the delineation of 24 individual sub-catchments, with 13 of these sub-catchments delineated based on offtake points. There were seven town/settlement sub-catchments identified. It is important to ensure that a high level of environmental health is maintained within these 13 sub-catchments in order to ensure that the drinking water supply is protected.

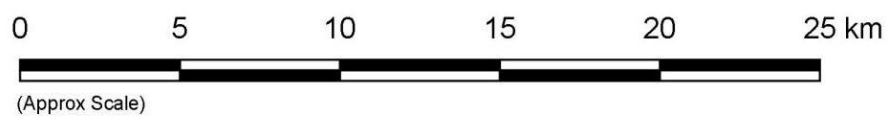
Section 4.4 of the Operational Plan details the prioritisation of both sub-catchments and towns/settlements based on cumulative Sensitivity Ratings. Figure 14 outlines the Sensitivity Rating mapping for the DWSCs.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

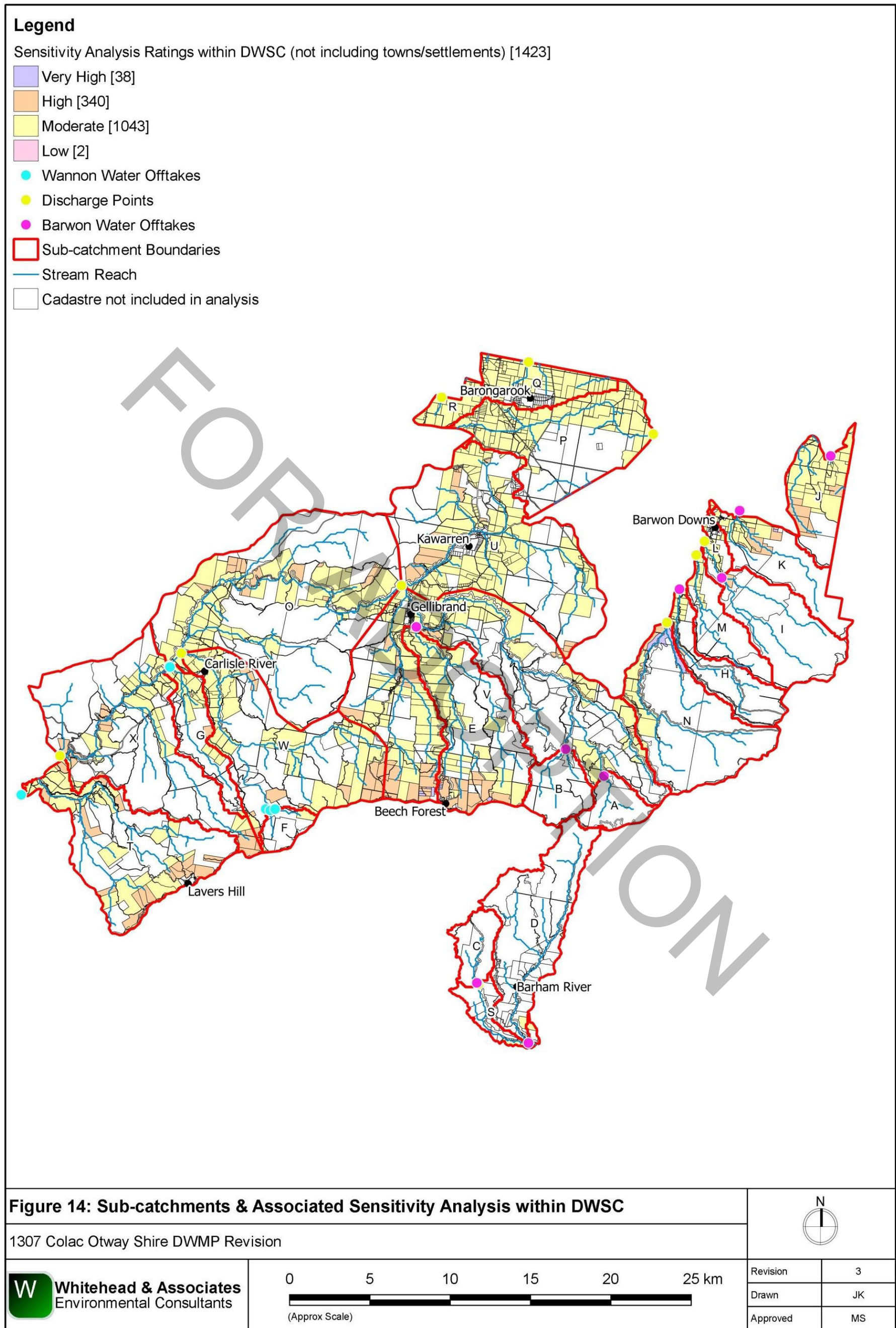


**Figure 13: Subcatchments within DWSC**

1307 Colac Otway Shire DWMP Revision



Revision	3
Drawn	JK
Approved	MS



## 9 Glossary of Terms

Term	Definition
<b>Aerobic treatment</b>	Biological treatment processes that occur in the presence of oxygen (i.e. aerobic bacteria digest wastewater contaminants). Aerobic bacteria are organisms that require oxygen to survive and grow.
<b>Anaerobic treatment</b>	Biological treatment processes that occur in the absence of oxygen.
<b>Blackwater</b>	Wastewater grossly contaminated with faeces (i.e. from a toilet).
<b>Desludging</b>	Removal of the semi solid waste from a tank.
<b>Effluent</b>	Water discharged from a treatment plant.
<b>Evapotranspiration</b>	Transfer of water from the soil to the atmosphere through evaporation and plant transpiration. Calculated using the FAO Penman-Monteith method to derive ( $ET_0$ ).
<b>Organic Matter</b>	Material that comes from the tissues of organisms (plants, animals, or microorganisms) that are currently or were once living.
<b>Greywater</b>	Wastewater from showers, baths, sinks, washing machines, dish washers.
<b>Hardpan</b>	A hardened, compacted and/or cemented horizon.
<b>Locality</b>	The broader locality surrounding a town (place name within mapped boundaries).
<b>Non-Potable</b>	Water not suitable for human consumption.
<b>Parcel</b>	The smallest unit of land able to be transferred within Victoria's cadastral system, usually having one proprietor or owner (land.vic.gov.au). For the purposes of this DWMP, parcel and lot are given to have the same meaning.
<b>Peds</b>	An aggregate of soil particles.
<b>Permeability</b>	The ability of the soil to allow water to pass through.
<b>P-sorb</b>	Phosphorus adsorption capacity of soil.
<b>Property</b>	Land under common occupation (land.vic.gov.au). May include multiple parcels.
<b>Sensitivity</b>	The 'likely' consequence of off-site (DWM) impacts based on the cumulative effect of individual lot constraints (soil suitability, slope, useable lot area, climate and location) and variables affecting the specific land capability and associated limitations of the lot to sustainably manage wastewater in compliance with SEPP objectives.
<b>Settlement</b>	An area of residential development within the Rural Living Zone (Barongarook and Kwararren) or Rural Conservation Zone (Barham River).
<b>Sewage</b>	Solid and liquid wastewater conveyed through sewers.
<b>Sewerage</b>	A system of sewers.
<b>Town</b>	The town servicing a locality, which is predominantly zoned Township Zone. It contains both residential and commercial development.



## 10 References

- Australian Bureau of Statistics (2011). Population and Dwelling Statistics – Colac Otway Shire.
- Centre for Environmental Training (2012). Land Capability Assessment for On-site Wastewater Management Systems Course.
- Department of Environment, Land, Water, Planning (2019) Guidelines for Development in Flood Affected Areas.
- Department of Primary Industries. Declared Water Supply Catchments in Victoria Catchment Management Areas. Retrieved from:  
<http://vro.dpi.vic.gov.au/dpi/vro/vrosite.nsf/pages/catchment>, accessed November 2012.
- Department of Primary Industries (2008). Geomorphological Units for Corangamite CMA. Victoria Resources Online.
- Department of Primary Industries (2012). Geological Units 1:250,000. GeoSciences Victoria. Earth Resources.
- Department of Sustainability and Environment (2012). Planning Permit Applications in Open, Potable Water Supply Catchment Areas. Victoria.
- Environment Protection Authority (2017). Environment Protection Act.
- Environmental Protection Authority (1997). State Environment Protection Policy (Groundwaters of Victoria).
- Environment Protection Authority (1996). Publication 451 Onsite Domestic Wastewater Management.
- Environment Protection Authority (2002). Guidelines for Aerated On-site Wastewater Treatment Systems.
- Environment Protection Authority (2003). State Environment Protection Policy (Waters of Victoria).
- Environment Protection Authority (2003a). Publication 746.1 Land Capability Assessment for Onsite Domestic Wastewater Management.
- Environment Protection Authority (2016). Publication 891.4. Code of Practice – Onsite Wastewater Management.
- Environmental Protection Authority (2018). State Environment Protection Policy (Waters of Victoria).
- Municipal Association of Victoria (2003). Domestic Wastewater Management: A Planning Guide for Local Government.
- Municipal Association of Victoria (2014). Model Land Capability Assessment Report.
- Robinson *et al.* (Department of Primary Industries). (2003). A Land Resource Assessment of the Corangamite Region. Primary Industries Research Victoria. Bendigo.
- Rowan J., Russell L., Ransom S. & Rees D. (Ed). (2000). Land Systems of Victoria. Ed 3:2. Centre for Land Protection Research. Technical Report 56.
- SKM (2014) Wye River and Separation Creek: Quantitative Microbial Risk Assessment and Ecological Risk Assessment, VW07110.

Standards Australia/Standards New Zealand (2003). AS/NZS 3500 Plumbing and Drainage, Part 1: Water Services and Part 2: Sanitary Plumbing and Drainage.

Standards Australia/Standards New Zealand. AS/NZS 1546:1-4 On-site Domestic Wastewater Treatment Units; Part 1: Septic Tanks (2008); Part 2: Waterless Composting Toilets (2008); Part 3: Secondary Treatment Systems (2017); Part 4: Domestic Greywater Treatment Systems (2016).

Standards Australia/Standards New Zealand (2012). AS/NZS 1547:2012 On-site Domestic Wastewater Management.

Wannon Water (2015). *Property Management Plan Guide, (updated) July 2015.*

Wannon Water (2015). *Planning Permit Advice to Applicants, October 2015.*

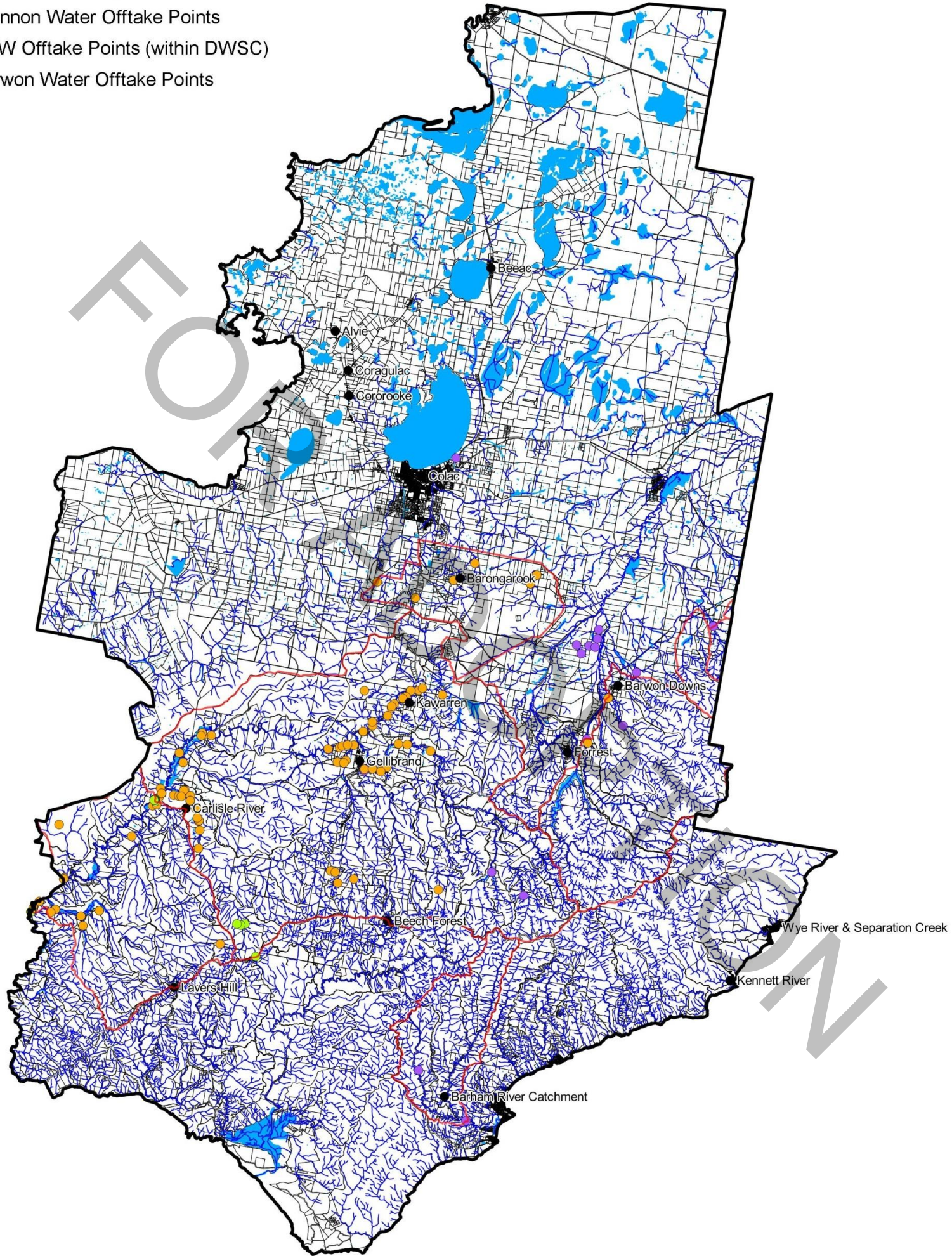
FOR ADOPTION

FOR ADOPTION

**Appendix A**  
**Informative Maps**

**Legend**

- COS LGA Boundary
- Declared Water Supply Catchments (DWSCs)
- Cadastre
- Watercourses
- Surface Waterways
- Wannon Water Offtake Points
- SRW Offtake Points (within DWSC)
- Barwon Water Offtake Points



**Figure A1: Surface Waters & Associated Buffers - Shire**

Colac Otway Shire DWMP Review

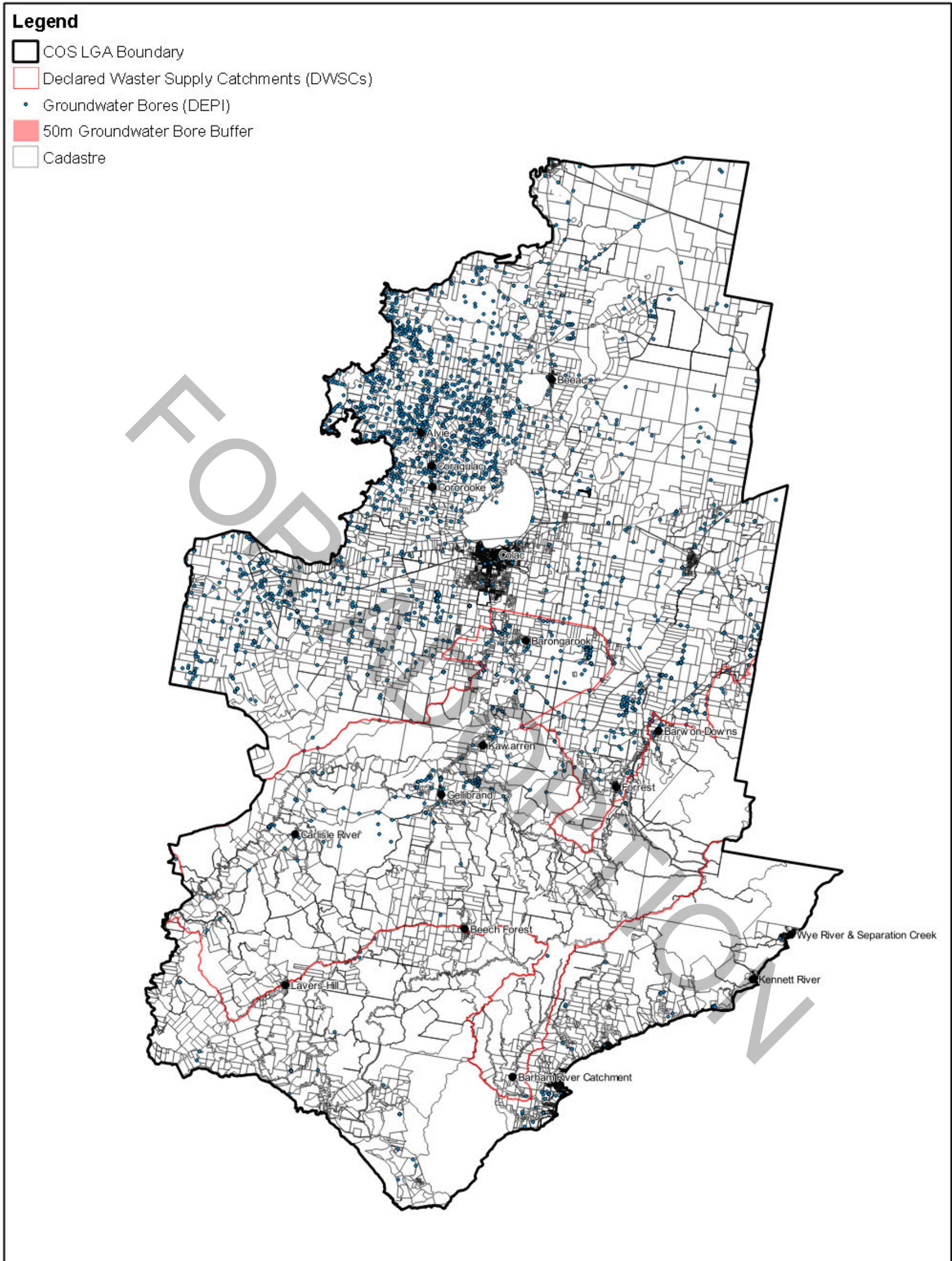


0 6 12 18 24 30 km



(Approx Scale)

Revision	5
Drawn	JK
Approved	MS



**Figure A2: Groundwater Bores & Associated Buffers - Shire**

Colac Otway Shire DWMP Review



0 6 12 18 24 30 km



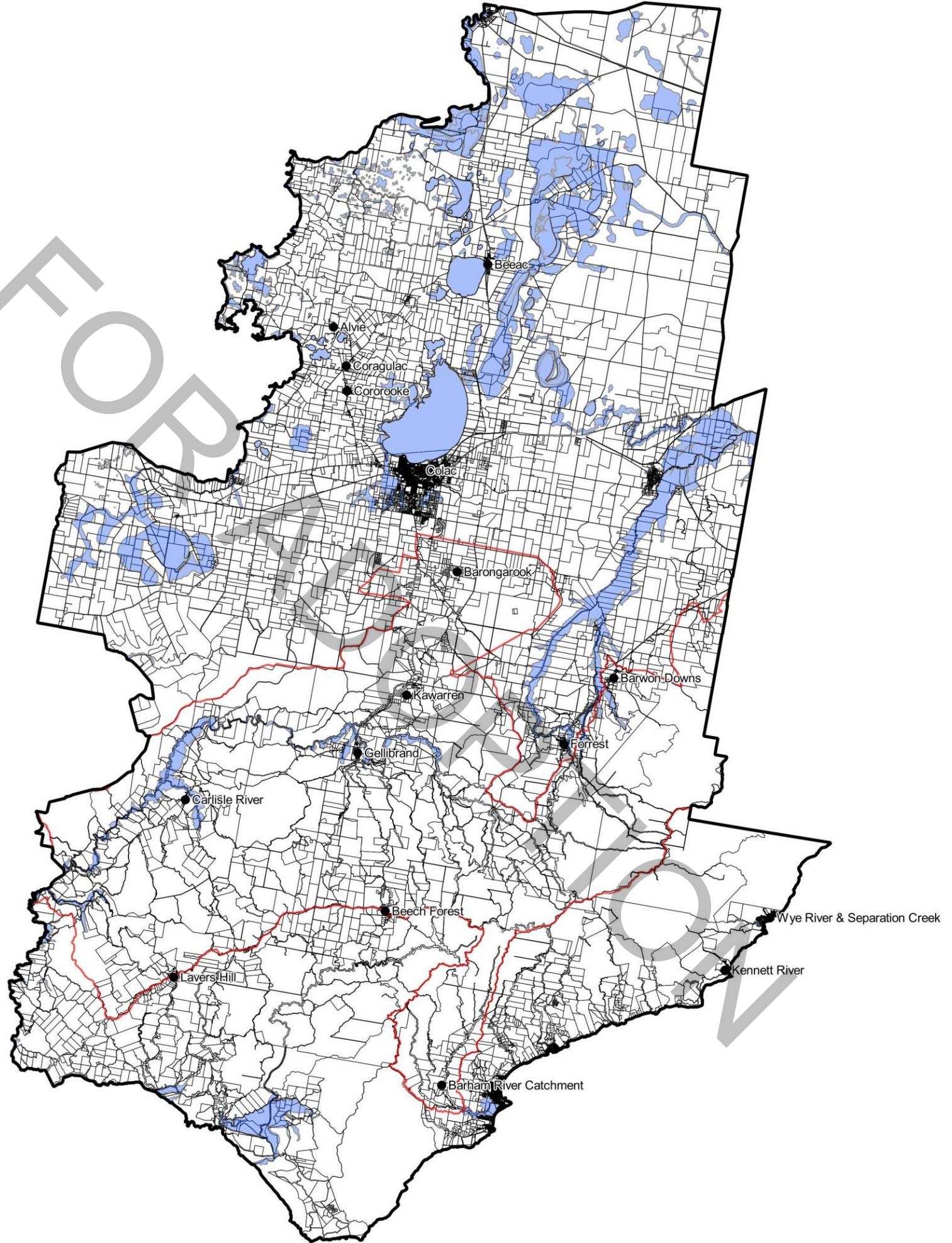
(Approx Scale)



Revision	4
Drawn	JK
Approved	MS

**Legend**

- Land Subject to Inundation Overlay
- COS LGA Boundary
- Declared Water Supply Catchments (DWSCs)
- Cadastre



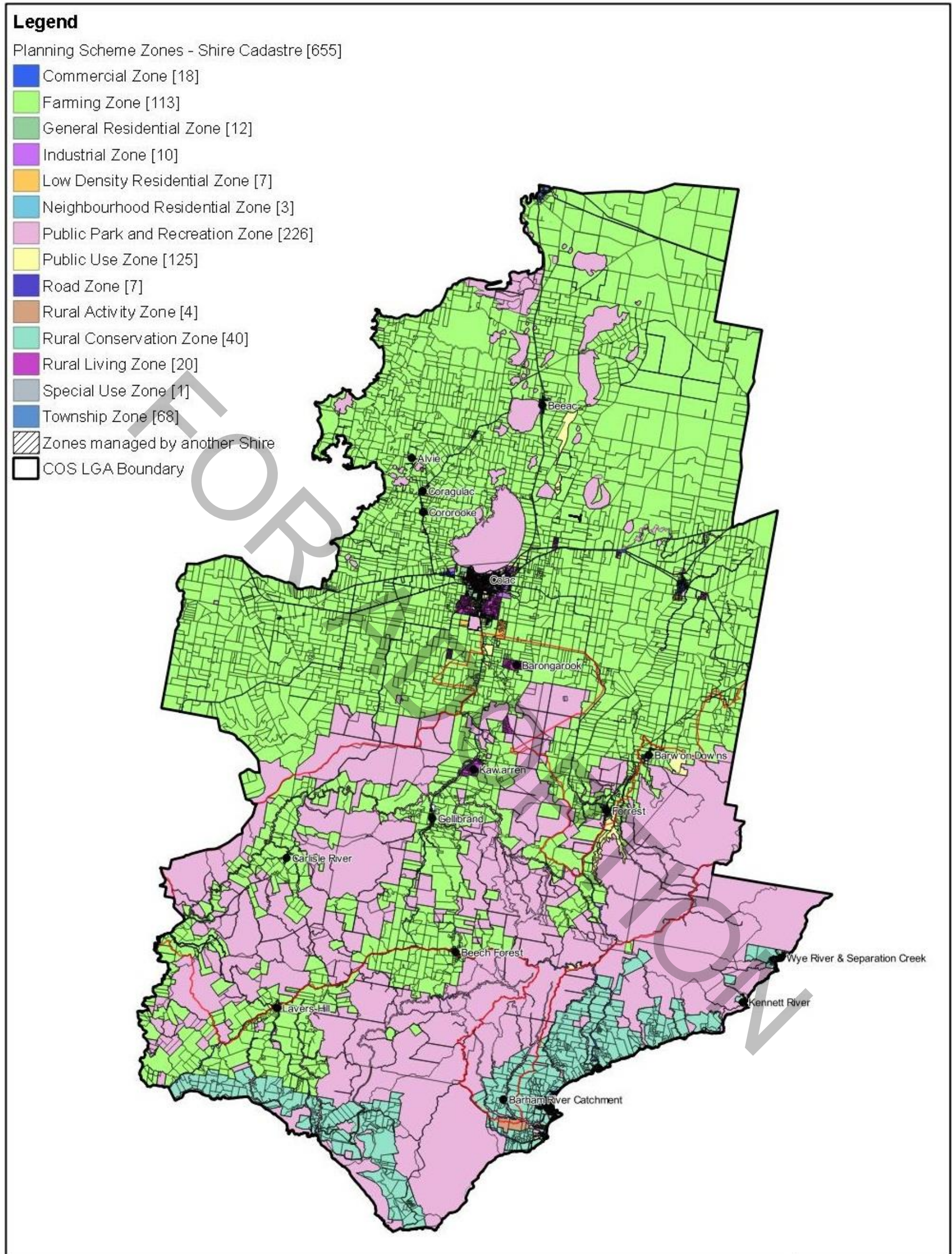
**Figure A3: Land Subject to Inundation - Shire**

Colac Otway Shire DWMP Review



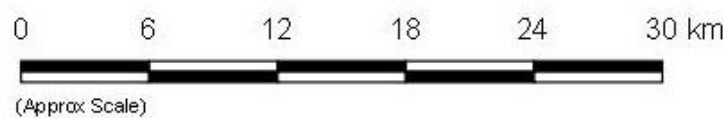
Revision	2
Drawn	JK
Approved	MS

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document



**Figure A4: Planning Scheme Zones - Shire**

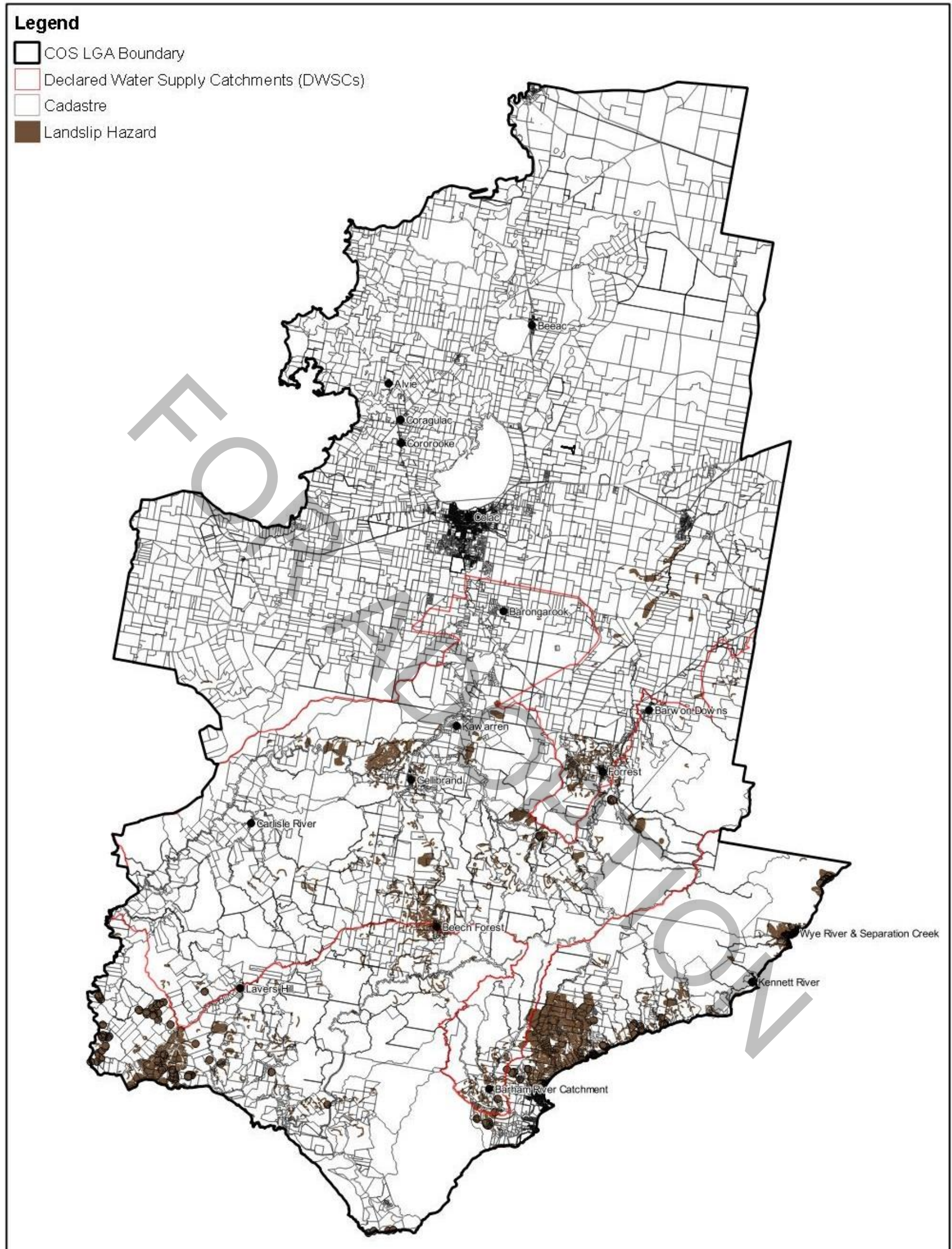
Colac Otway Shire DWMP Review



Revision	3
Drawn	JK
Approved	MS

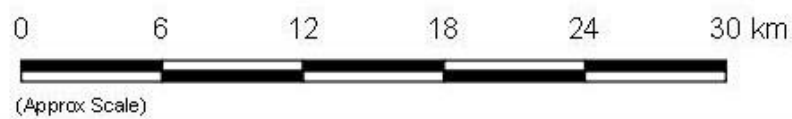
Whitehead & Associates Environmental Consultants

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document



**Figure A5: Sensitivity Overlay - Landslide Hazard - Shire**

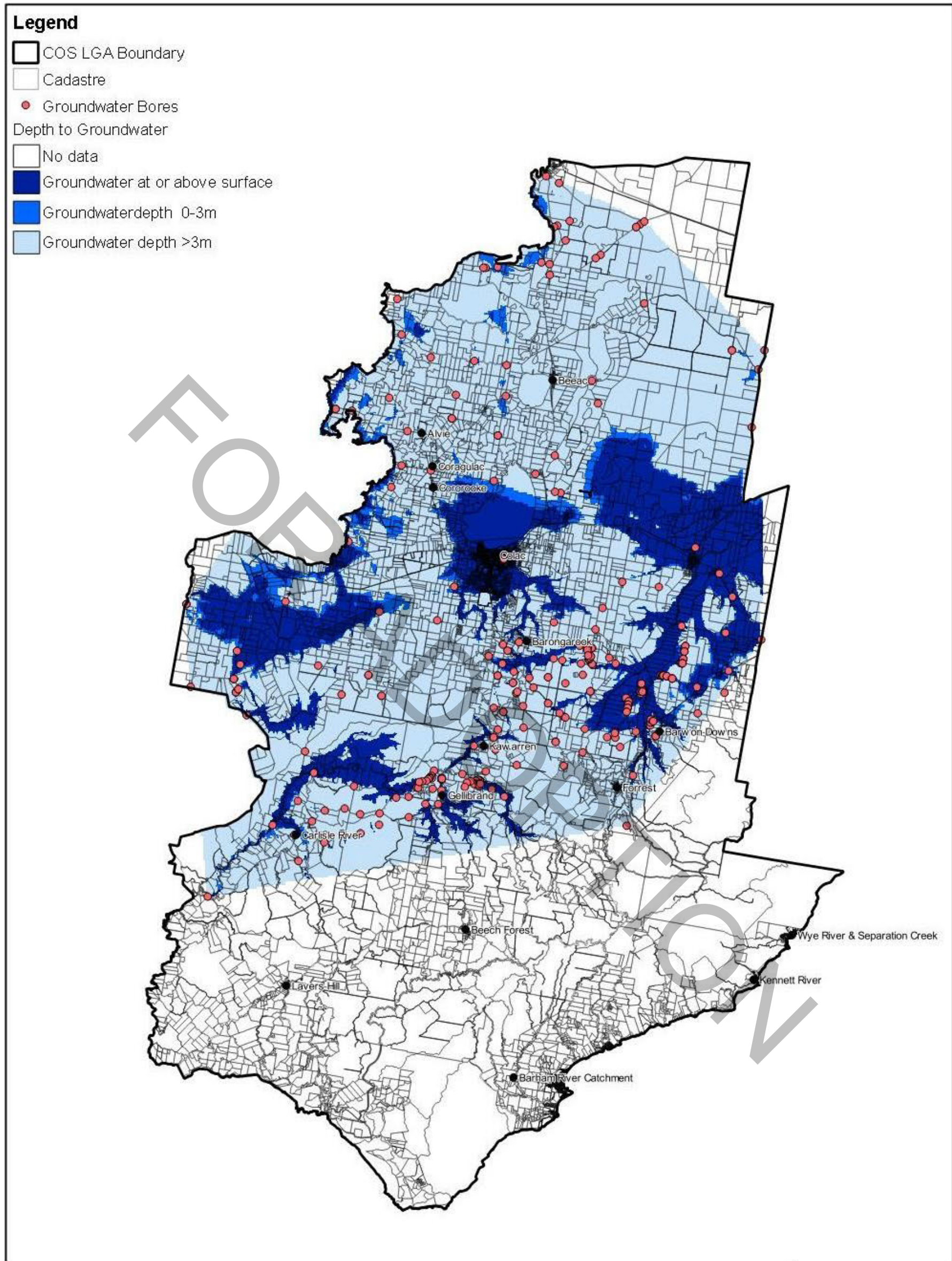
Colac Otway Shire DWMP Review



Revision	3
Drawn	JK
Approved	MS

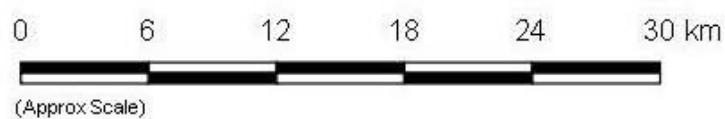
Whitehead & Associates Environmental Consultants



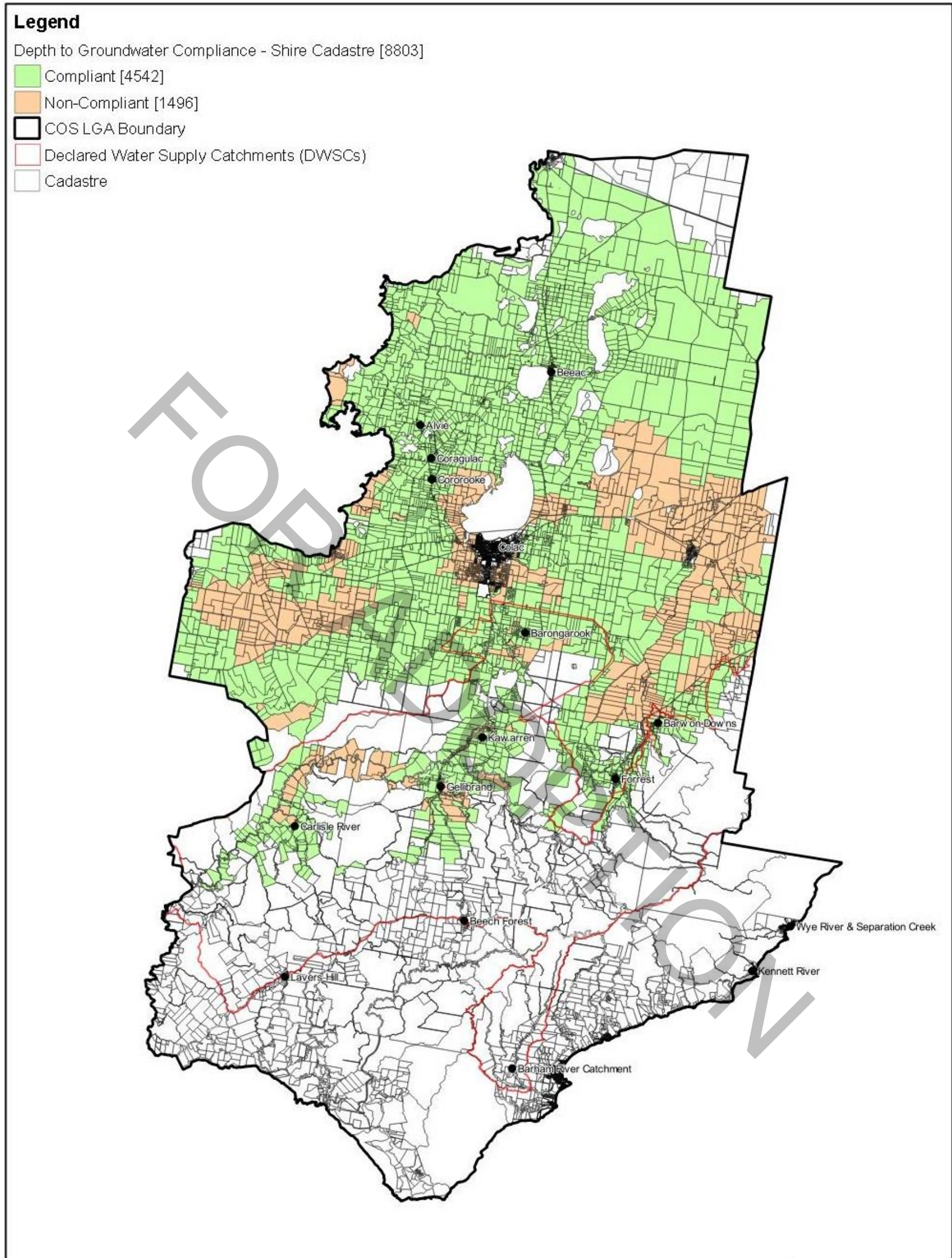


**Figure A6: Depth to Groundwater - Shire**

Colac Otway Shire DWMP Review



Revision	3
Drawn	JK
Approved	MS



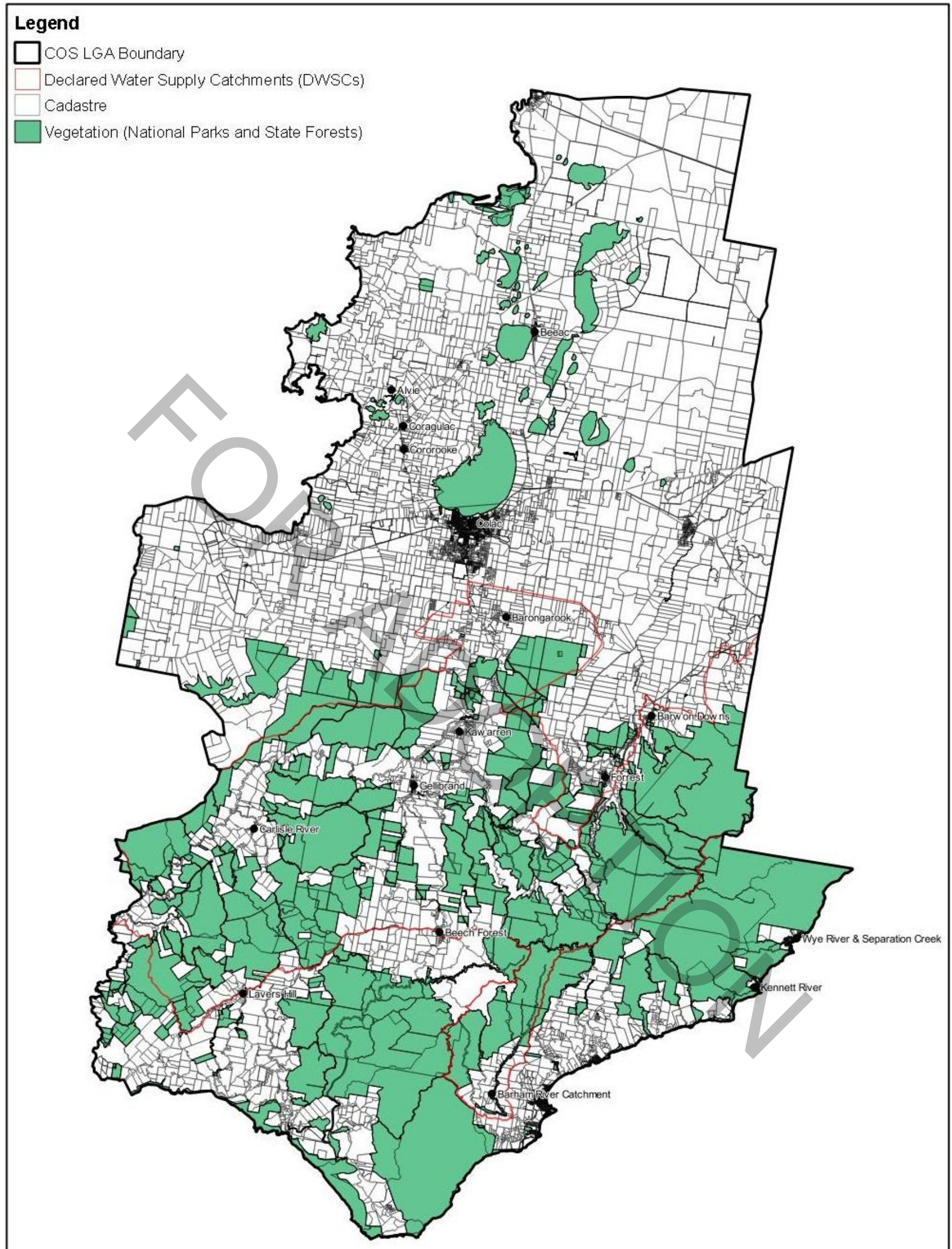
**Figure A7: Depth to Groundwater Compliance - Shire**

Colac Otway Shire DWMP Review

Revision	3
Drawn	JK
Approved	MS

	0      6      12      18      24      30 km 
	(Approx Scale)

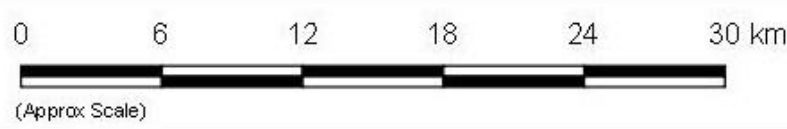
Whitehead & Associates Environmental Consultants



**Figure A8: Sensitivity Overlay - Vegetation - Shire**

Colac Otway Shire DWMP Review

**W Whitehead & Associates**  
Environmental Consultants



Revision	3
Drawn	JK
Approved	MS

## Appendix B

### Locality Reports

*If your locality is not provided as a Locality Report in Appendix B, you can use the System Sizing Tables for the nearest locality (i.e. Colac/Elliminyt can utilise Barongarook).*

Note: words have the following meanings in the DWMP (refer to glossary for further definition):

‘Town’ means the developed area/town which services the wider locality. ‘Towns’, which contain both residential and commercial development, are predominantly zoned Township zone.

‘Settlement’ refers to residential areas in Barham River, Barongarook and Kawarren, which are in the Rural Living Zone and Rural Conservation Zone.

‘Locality’ means the wider geographical area, inclusive of the town/settlement.

The white cadastre regions shown on the locality and town/settlement Sensitivity Rating maps refers to regions excluded from the study. Refer to Section 5 for more detail.

Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.

## A. Alvie Locality Report

### 1a. Introduction

Alvie is a rural locality located approximately 12km northwest of Colac on the western side of Lake Corangamite within the Western Volcanic Plain landscape and Red Rock region. Alvie lies at the foot of the Red Rock Scenic Reserve, an old scoria formation that formed due to violent volcanic eruptions, which is a popular tourist attraction.

The locality has a population of approximately 132 residents (ABS Census, 2016). There are approximately 161 and 33 unsewered lots located within the Alvie locality and town respectively. There were 4 new lots with DWM systems within the locality from June 2015-2021. There are 30 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Alvie locality are summarised as follows:

- 3 AWTs (1 subsurface irrigation, 2 unknown);
- 20 septic tanks (6 trenches and 14 unknown);
- 2 worm farm (1 subsurface irrigation, 1 unknown); and
- 5 unknown (2 trenches and 3 unknown).

No site investigations were conducted within the Alvie locality as part of the 2014 field assessments; however, soil investigations were conducted to confirm the soil type.

### 2a. Background Documentation

Refer to the following documents for additional detail specifically regarding the locality:

- Red Rock Region Community Infrastructure Plan (September, 2013);
- COS Planning Scheme; and
- Rural Living Strategy (2011)

### 3a. Summary of Constraints to DWM

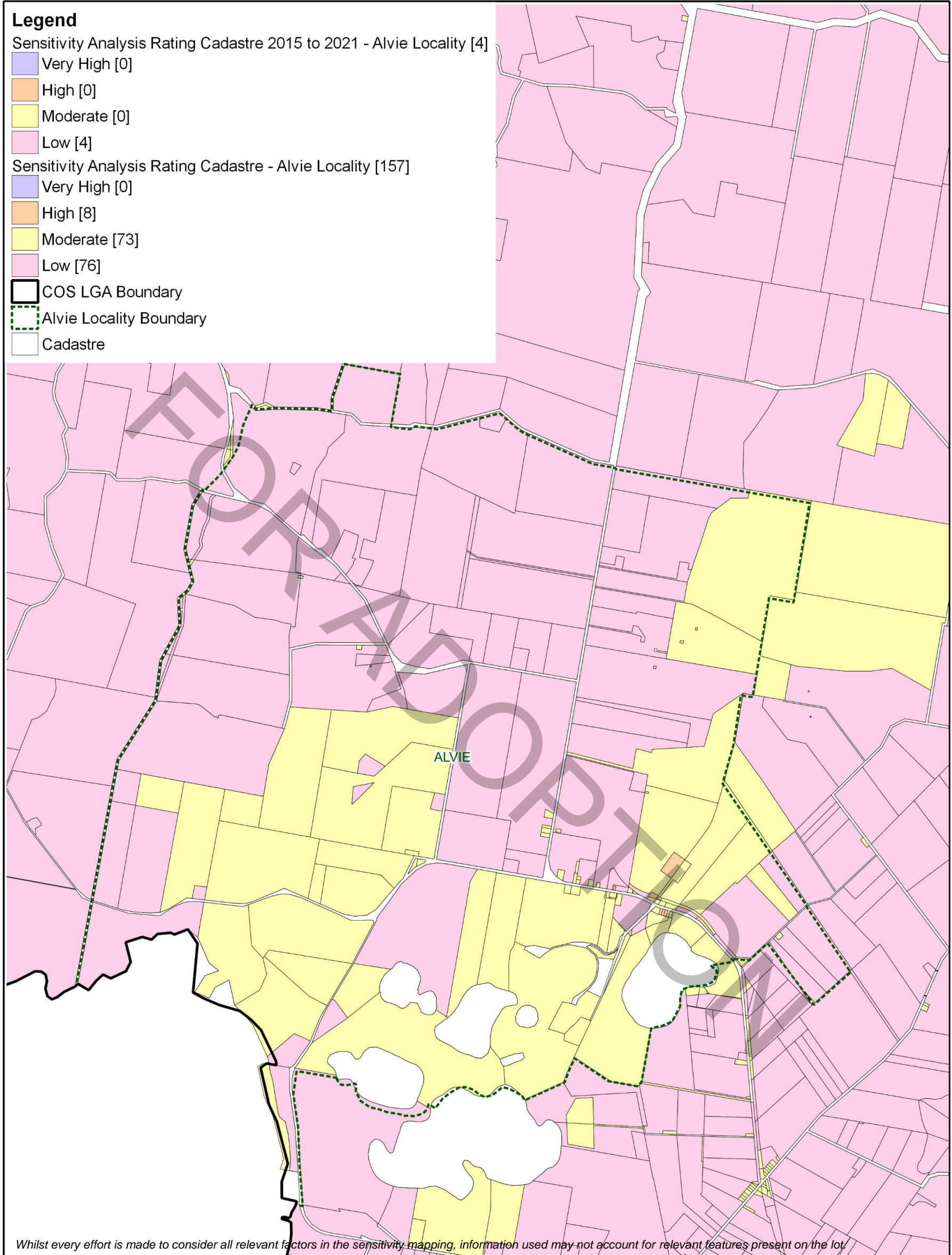
Characteristic	Description
Climate Zone	Zone 2.
Surface waterways & catchments	Alvie contains a number of lakes, predominantly in the region to the south of the locality, that have formed within the Western Volcanic Plains; including Lake Coragulac (southeast near town), Lake Wernwrap, Lake Purdiguluc and Lake Gnalinegurk.
Groundwater	Proximity to groundwater bores: significant throughout the locality with a high density of groundwater bores.
Land subject to inundation	To the south of the town around the lakes.
Useable lot area	High: 12 (22)

## Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Characteristic	Description
<b>Town (Locality)</b>	Moderate: 11 (22) Low: 10 (105) Compliant: 0 (12)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The town is predominantly zoned as Township, with some Public Use Zone. Land in the wider locality area is predominantly in the Farming Zone, with land associated with the lakes in the Public Conservation and Resource Zone.  Compliancy is variable throughout the locality, with the majority of the town compliant.  Compliant: 28 (40) Non-compliant: 5 (121)
<b>Slope Town (Locality)</b>	High: 1 (17) (higher towards Lake Coragulac) Moderate: 7 (15) Low: 25 (129)
<b>Geology</b>	Northwest region – unnamed stony rises of Newer Volcanic Group; Town – unnamed phreatomagmatic deposits (tuff rings) of Newer Volcanic Group;  Eastern and southern regions – unnamed scoria deposits (scoria cones and agglutinated spatter rims) of Newer Volcanic Group; and  Some unnamed non-marine swamp, lake and estuarine deposits.
<b>Soil suitability Town (Locality)</b>	High: 0 (15) Moderate: 33 (146) Low: 0 (0)  The town consists of soil landscape unit '101' (moderate rating) which forms in the undulating low hills of the Western Volcanic Plains and consists of friable mottled black texture contrast soil and neutral black gradational soils to depths less than 1.5m. The soils consist of moderately structured clay loam over strongly structured medium clay to heavy clay. Limitations include restricted drainage.  The western and surrounding regions of the locality consists of soil landscape unit '114' (moderate rating) which forms in the undulating basalt plains and stony rises and consists of gradational and friable mottled textured contrast soils to depths of less than 1.5m. The soils consist of strongly structured clay loam over strongly structured medium clay.  There are some landform depressions to the north of the town.

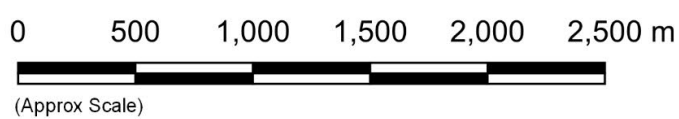
Characteristic	Description
<b>Sensitivity Overlay</b>	Depth to Groundwater Compliance: all compliant. Landslip: Nil. Vegetation: Red Rock Scenic Reserve and lakes to the south (Coragulac, Werowrap, Corangamite, and Gnalinegurk).
<b>Sensitivity Analysis Rating Town (Locality)</b>	Very High: 0 (0) High: 3 (8) Moderate: 22 (73) Low: 8 (76)

#### 4a. Sensitivity Analysis (Maps)



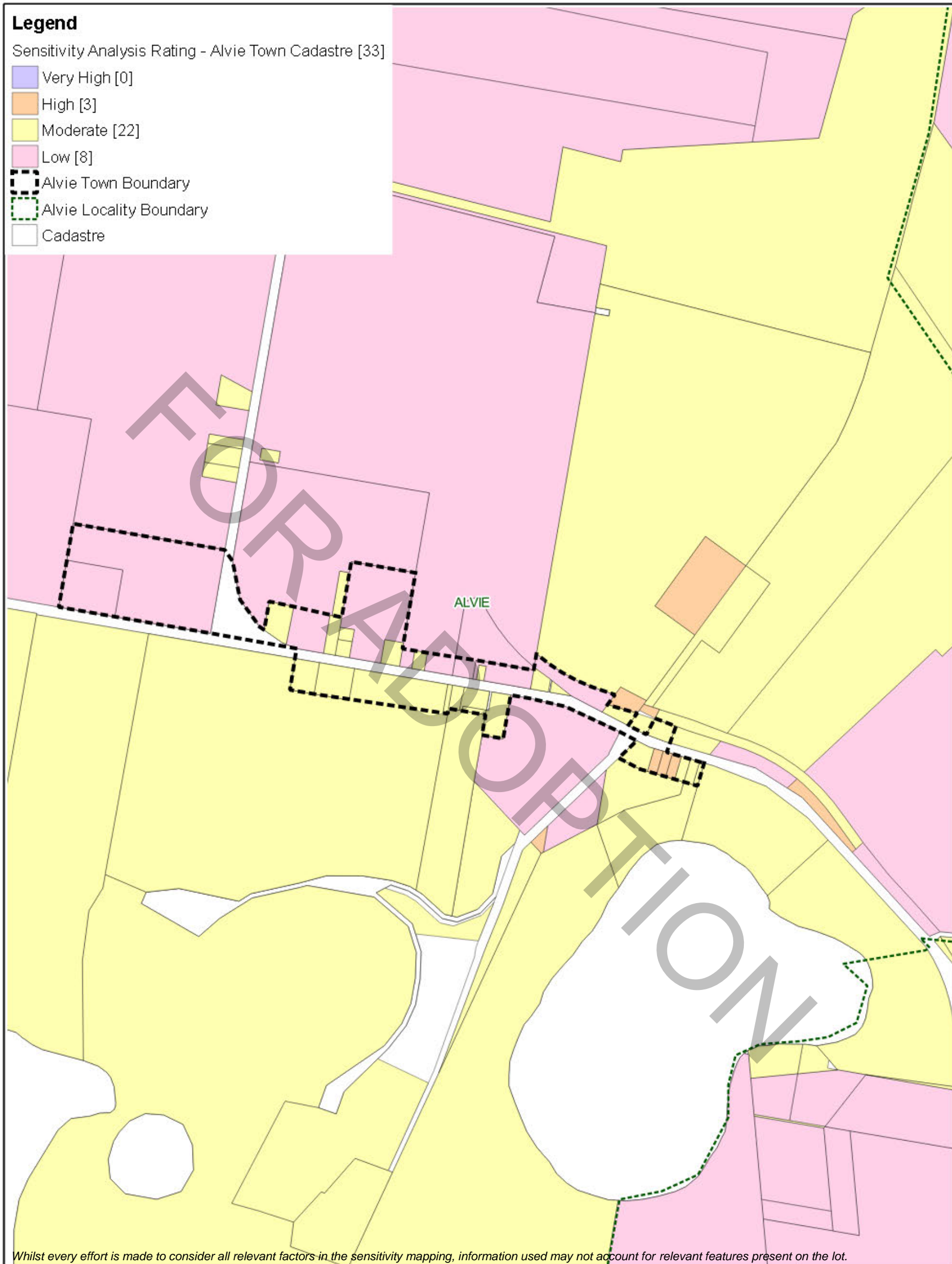
**Figure a1: Sensitivity Analysis - Alvie Locality**

Colac Otway Shire DWMP Review



Revision	6
Drawn	JK
Approved	MS

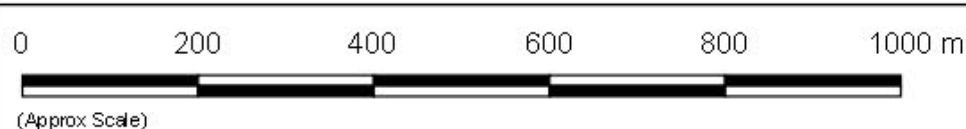




*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

**Figure a2: Sensitivity Analysis - Alvie Town**

Colac Otway Shire DWMP Review



N 	
Revision	3
Drawn	JK
Approved	MS

## 5a. System Selection

Due to the dominance of heavy-textured soils in the Alvie area, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays). The System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 6a. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for Alvie was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as 'Not Applicable' for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as 'Not Applicable' for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed 'Not Applicable' in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Alvie locality are provided below.

## 7a. General Conclusion

The lots within Alvie have been predominantly assigned a Moderate or Low Sensitivity Rating to sustainable DWM. Predominantly, both Standard and Council LCAs will be required, with the use of System Sizing tables deemed appropriate. The constraints within Alvie are quite low in comparison to other localities, with particular attention directed towards ensuring that the quality of the groundwater resources is maintained and the correct decommissioning of groundwater bores occurs where necessary.

Alvie and Beeac									
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	5	5	4	3.5	3	2		
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing and setbacks							
5 + bedroom residence	1,080	268		356	426	530	1,039		
4 bedroom residence	900	223		297	355	442	866		
1-3 bedroom residence	720	127		237	284	353	693		
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012									
Conventional Absorption Trenches and Beds - Primary or Secondary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Massive Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)
	DLR (mm)	Not supported (Alternative Land Application System Required)							
Development Type	Daily (L/day)								
5 + bedroom residence	1,080								
4 bedroom residence	900								
1-3 bedroom residence	720								
Evapotranspiration-Absorption Trenches and Beds - Primary or Secondary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only
	DLR (mm)	20*	20*	15	10	12	8	5	5
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing and setbacks							
5 + bedroom residence	1,080	58		78	123	100	128	281	
4 bedroom residence	900	48		65	102	83	132	234	
1-3 bedroom residence	720	39		52	82	67	106	188	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012									
LPED Irrigation Systems - Primary or Secondary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	N/A (Alternative Land Application System Required)	4	3.5	3	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)		
Development Type	Daily (L/day)		Total min. basal or 'wetted' area required (m <sup>2</sup> )†						
5 + bedroom residence	1,080		379	460	584				
4 bedroom residence	900		316	383	487				
1-3 bedroom residence	720	253	307	390					
† required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks									
Wick Trenches and Beds - Secondary Treated Effluent Only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)
	DLR (mm)	25	30	20	10	12	8	8	5
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing and setbacks							
5 + bedroom residence	1,080	46	38	58	123	100	128	281	
4 bedroom residence	900	38	32	48	102	83	132	234	
1-3 bedroom residence	720	31	25	39	82	67	106	188	

## **B. Barham River Catchment (Apollo Bay) Locality Report**

### **1b. Introduction**

Barham River (also known informally as 'Paradise') is a rural settlement located in the hinterlands of the Apollo Bay locality on the south-eastern coast of COS. On maps, it is officially within the broader Apollo Bay locality, but it is distinguished by low density, unsewered residential properties primarily extending along Barham River Road and other minor roads. Many properties are rural-residential (including hobby farms). The landform consists of dissected low hills and alluvial terraces abutting rivers and streams at the base of the Otway Ranges. The entire Barham River ('Paradise') Catchment settlement is located within the Barham River DWSC as indicated by the surface water informative map A1, Appendix A.

Because it does not fit within specific Census locality boundaries, it is difficult to estimate the residential population of the Barham River Catchment settlement. The broader Apollo Bay locality (which includes the Barham River Catchment settlement) has a population of approximately 1,598 residents (ABS Census, 2016) which reaches up to 15,000 in the peak holiday season.

The settlement of Apollo Bay is sewerred, with approximately 392 and 78 unsewered lots located within the Apollo Bay locality and Barham River Catchment settlement, respectively. There are 83 new lots with DWM systems within the locality from June 2015-2021. There are 161 DWM system permits that have been inspected by COS to date within the Barham River Catchment settlement/ Apollo Bay locality (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method are summarised as follows:

- 62 AWTS (7 subsurface irrigation, 16 drip irrigation, 8 irrigation, 3 trenches and 28 unknown);
- 1 secondary treatment system (1 unknown);
- 2 composting toilets (1 drip irrigation);
- 63 septic tanks (27 trenches and 36 unknown);
- 3 worm farms (2 trenches and 1 unknown);
- 1 sand filter (1 unknown); and
- 30 unknown (11 trenches, 1 reln drain, 1 subsurface irrigation, and 17 unknown).

### **2b. Background Documentation**

Refer to the following documents for additional detail specifically regarding the locality:

- Apollo Bay Structure Plan (April 2007);
- Barham River Confluence Land Management Plan (February 2012);
- COS Planning Scheme; and
- Rural Living Strategy (2011)

### **3b. Site Assessment Results**

The following table summarises the results from the representative audits conducted by Consultant staff in September 2014.

Characteristic	Description
<b>Land use</b>	The Barham River Catchment settlement comprises a range of land uses, including rural living, small farms, and tourism.
<b>Occupancy rates</b>	2 (as per Apollo Bay Gazetted Locality, ABS Census, 2011).
<b>Typical soils</b>	Sandy clays and clay loams over clay or weathered shallow bedrock as determined during field investigations.
<b>AS/NZS 1547:2012 soil categories</b>	4 (Clay Loams), 5 (Light and Sandy Clays) and 6 (Medium to Heavy Clays).
<b>Existing Systems</b>	<p><b>Separate Blackwater and Greywater</b></p> <p>Of the three systems inspected during field investigations, one (33%) was assumed to comprise separate blackwater treatment in a septic tank, with direct greywater diversion within the lot boundary. The septic tank was not accessed, as it could not be found. Time since last pump out was not determined.</p> <p>It was assumed that septic effluent is discharged to conventional absorption trenches; however, the LAA was not identified.</p> <p><b>Combined Blackwater and Greywater</b></p> <p>Two systems (67%) inspected have a combined wastewater treatment system, or were assumed to have based on layout of pipework and age of dwelling. The time since last pump-out was generally unknown (partly due to owner not being home to ascertain).</p> <p>Septic effluent discharged to one or more conventional absorption trenches (or was assumed to if trenches could not be identified). The trench dimensions were generally unclear, and it is likely that they were undersized for the number of bedrooms. The majority of trenches or/and available LAAs were located on land of less than 8% slope and appeared to be parallel with contours.</p>

#### 4b. Summary of Constraints to DWM

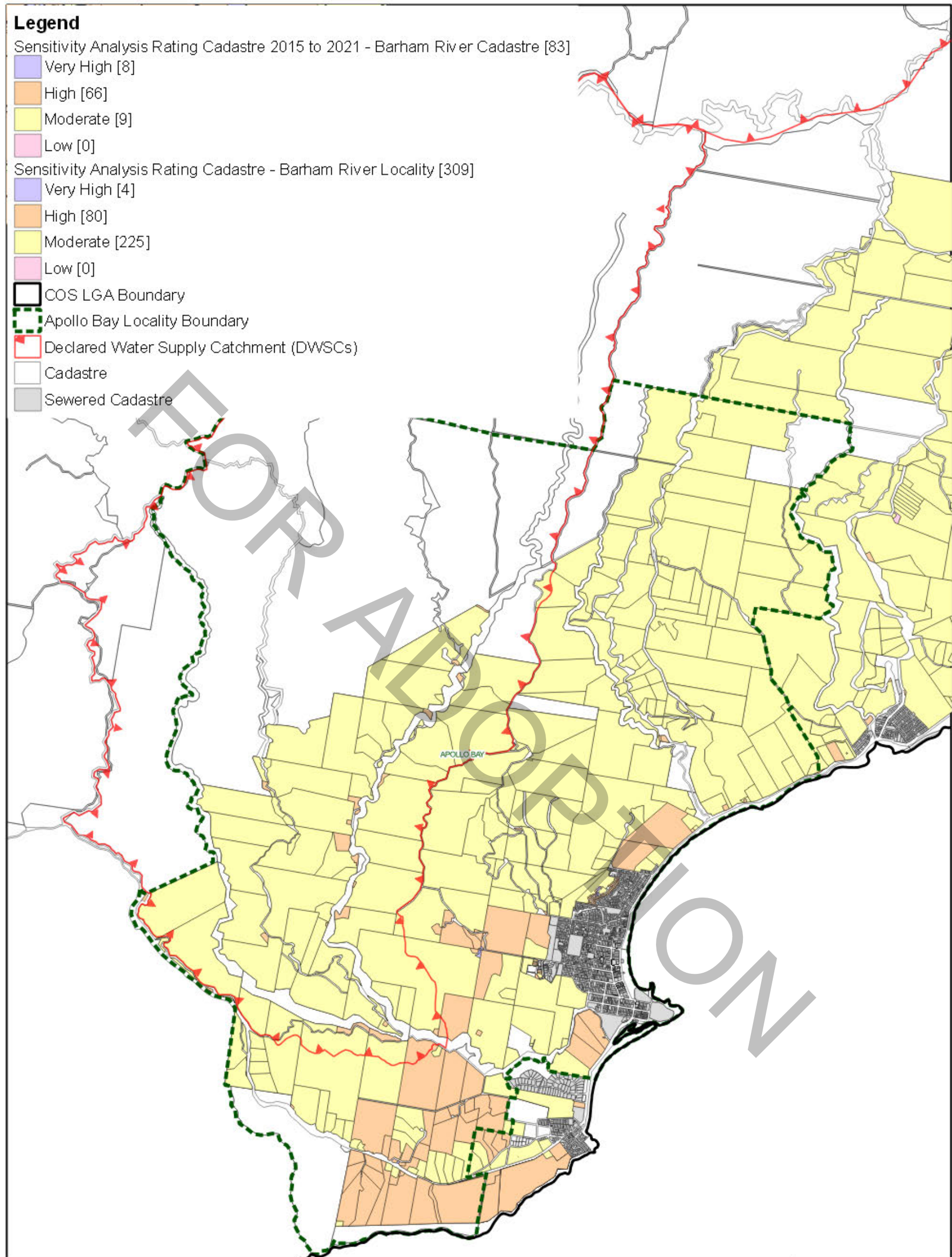
Characteristic	Description
<b>Climate Zone</b>	Zone 3.
<b>Surface waterways &amp; catchments</b>	Approximately half of the broader Apollo Bay locality is within a DWSC. The entirety of the Barham River ('Paradise') Catchment settlement is located in the Barham River DWSC, which is the drinking water supply for connected properties in Apollo Bay. Barham River (east and west branches) is the major watercourse and has tributaries throughout the catchment.

## Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Characteristic	Description
	Barham River confluences with the Southern Ocean between the settlements of Marengo and Apollo Bay.
<b>Groundwater</b>	Proximity to groundwater bores: primarily around semi-rural lots on the outskirts (west and northwest) of Apollo Bay settlement.  No depth to groundwater data.
<b>Land subject to inundation</b>	Along the lower coastal creek reaches, particularly at the Barham River confluence with the Southern Ocean.
<b>Useable lot area Settlement (Locality)</b>	High: 16 (106) Moderate: 7 (22) Low: 54 (258) Compliant: 1 (6)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The Barham River ('Paradise') Catchment settlement is primarily zoned Rural Conservation Zone and is located to the west and northwest of the Apollo Bay town, in the foot slopes of the Otway Ranges.  Compliance is variable throughout the broader Apollo Bay locality, with a greater density of non-compliant lots located to the south, west and north of the Apollo Bay settlement.  Compliant: 21 (128) Non-compliant: 57 (264)
<b>Slope Settlement (Locality)</b>	High: 73 (285) (particularly around the Otway Ranges foot slopes) Moderate: 3 (41) Low: 2 (40)
<b>Geology</b>	Sedimentary Eumeralla Formation (early Cretaceous), fluvial braided stream deposits, unnamed Quaternary sedimentary (non-marine) colluvium and gully alluvium, and alluvial floodplain deposits. It differs along the coastline near the town of Apollo Bay.
<b>Soil suitability Settlement (Locality)</b>	High: 1 (139) Moderate: 77 (253) Low: 0 (0)  Northern region/hinterland region consists of soil landscape unit '61' (moderate rating) which forms in the deeply dissected hills of the Otway Ranges and consists of brown gradational soils to 1.2m depth. The soils consist of moderately structured silty loam over clay loam. Limitations include restricted drainage and very acidic soil.

Characteristic	Description
	<p>The western region of the Apollo Bay locality and extending northeast along the coastline towards Skenes Creek consists of soil landscape unit '64' (moderate rating) which forms in the similar landscape as detailed in '61'. It consists of brown texture contrast soils to 0.9m depth. The soils consist of weakly structured clay sand over strongly structured clay loam.</p> <p>The northern half of the Apollo Bay locality consists of soil landscape unit '62' (high rating) which forms in the alluvium, alluvial terraces, floodplains and coastal plains of the Sedimentary Western Plains and elevated longitudinal coastal dunes at Cape Otway and consists of red-yellow calcareous sand soils to 1.9m depth. The soils consist of apedal loamy sand over weakly structured sandy clay. Limitations include low fertility and coarse fragments.</p> <p>The southern half of the Apollo Bay locality consists of soil landscape unit '91' (high rating) which forms in the deeply dissected and uplifted plains with coastal cliffs and consists of grey sand soils with hardpans to more than 2m depth. The soils consist of weakly structured loamy sand over apedal sand. Limitations include low fertility and coarse fragments.</p> <p>There is a small region in the southwest of the locality that consists of medium clay deep grey gradational soils.</p>
<b>Sensitivity Overlay</b>	<p>No depth to groundwater data</p> <p>Landslip: extensive within the eastern (coastal) section of locality, significant in the foot slopes of the Otway Ranges.</p> <p>Vegetation: Great Otway National Park in the northwest.</p>
<b>Sensitivity Analysis Rating Settlement (Locality)</b>	<p>Very High: 0 (12)</p> <p>High: 21 (146)</p> <p>Moderate: 57 (234)</p> <p>Low: 0 (0)</p>

## 5b. Sensitivity Analysis (Maps)



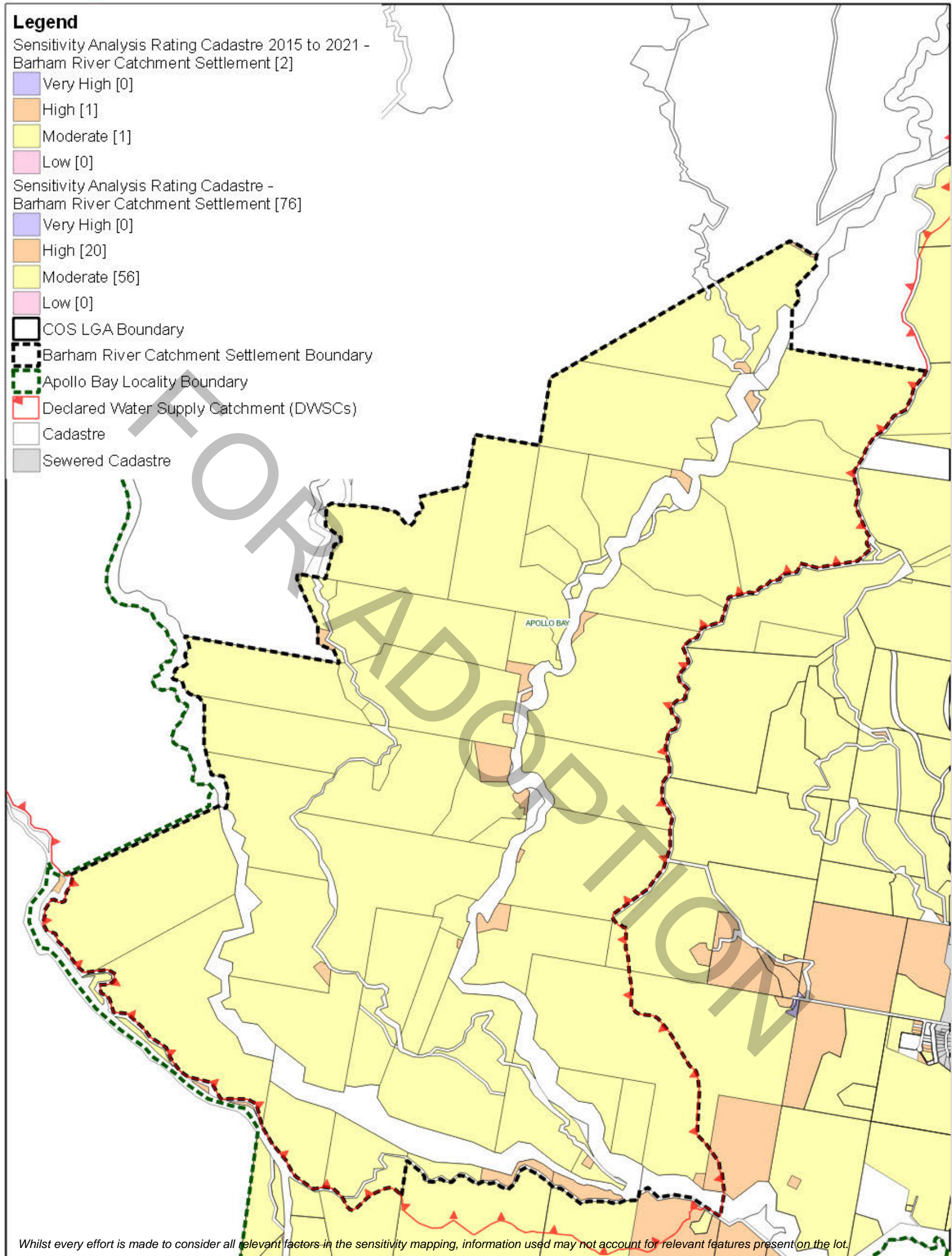
**Figure b1: Sensitivity Analysis - Apollo Bay Locality**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS





**Figure b2: Sensitivity Analysis - Barham River Catchment Settlement**

Colac Otway Shire DWMP Review



0 500 1,000 1,500 2,000 2,500 m



(Approx Scale)



Revision	5
Drawn	JK
Approved	MS

## 6b. System Selection

Due to the dominance of heavy-textured soils in the Barham River Catchment settlement, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays).

The wet climate of the Barham River Catchment settlement makes it a higher risk for DWM and site-specific, detailed design will be required for unsewered lots in this area. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

EPA Code of Practice (2013) (Section 2.2.2) identifies secondary treatment standard (or better) followed by subsurface pressure-compensating irrigation as current best-practice in Victoria for substantially reducing the risk associated with unsewered development. Further, the Code describes a “Wick trench/bed” land application option that may be incorporated with secondary treatment for consideration on sites constrained by climate or lot ‘useable area’, particularly within the DWSCs. Any variation from this best-practice approach must be provided with detailed supporting information to demonstrate suitability.

The Sizing Tables (discussed below) are not applicable for the Barham River Catchment settlement.

## 7b. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA (2014). 70<sup>th</sup> percentile monthly rainfall exceeds average monthly evapotranspiration in eight months of the year in the Barham River area. As a result, there is a month-to-month surplus of hydraulic inputs and subsequently the monthly water balance does not resolve itself and cannot produce meaningful results for land application area sizing.

Site-specific detailed design is required for the Barham River Catchment settlement.

## 8b. General Conclusion

The majority of the lots within the locality have been assigned a Moderate or High Sensitivity Rating to sustainable DWM. Predominantly, both Standard and Detailed LCAs will be required, with site-specific design a necessity due to the higher rainfall associated with this region. System Sizing Tables were not generated and a monthly water balance will need to be generated for system sizing for the Standard LCA. Particular attention needs to be directed towards ensuring that setbacks from surface waterways are maintained and that the systems selected are appropriate for steeper slopes with correct construction.

## C. Barongarook Locality Report

### 1c. Introduction

Barongarook is located in the centre of COS approximately 9km south of Colac. The landform consists of dissected low hills and alluvial terraces abutting a stream on the northern foothills of the Otway Ranges. Notably, the entire settlement and surrounding locality is located within a DWSC, predominantly Barwon Downs Wellfield Intake DWSC and Gellibrand River DWSC in the southwest, as indicated by the surface water informative map, Appendix A.

Barongarook has two main settlement areas; a large one to the north and a smaller rural living settlement to the south. Barongarook locality has a population of approximately 434 residents (ABS Census, 2016). There are approximately 262 and 101 unsewered lots located within the Barongarook locality and settlements, respectively. There are 2 new lots with DWM systems within the locality from June 2015-2021. There are 130 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Barongarook locality are summarised as follows:

- 21 AWTS (5 subsurface irrigation, 4 drip irrigation, 1 irrigation and 10 unknown);
- 2 sand filters (1 subsurface irrigation and 1 drip irrigation);
- 1 secondary treatment system (1 unknown);
- 66 septic tanks (11 trenches, 1 subsurface irrigation and 54 unknown); and
- 40 unknown (12 trenches, 3 subsurface irrigation, 3 irrigation, and 22 unknown).

No field investigations were conducted in the Barongarook locality as part of the 2014 field assessments; however, soil investigations were conducted to confirm the soil type.

### 2c. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Barongarook Covenant Reserve Land Management Plan (February, 2012);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

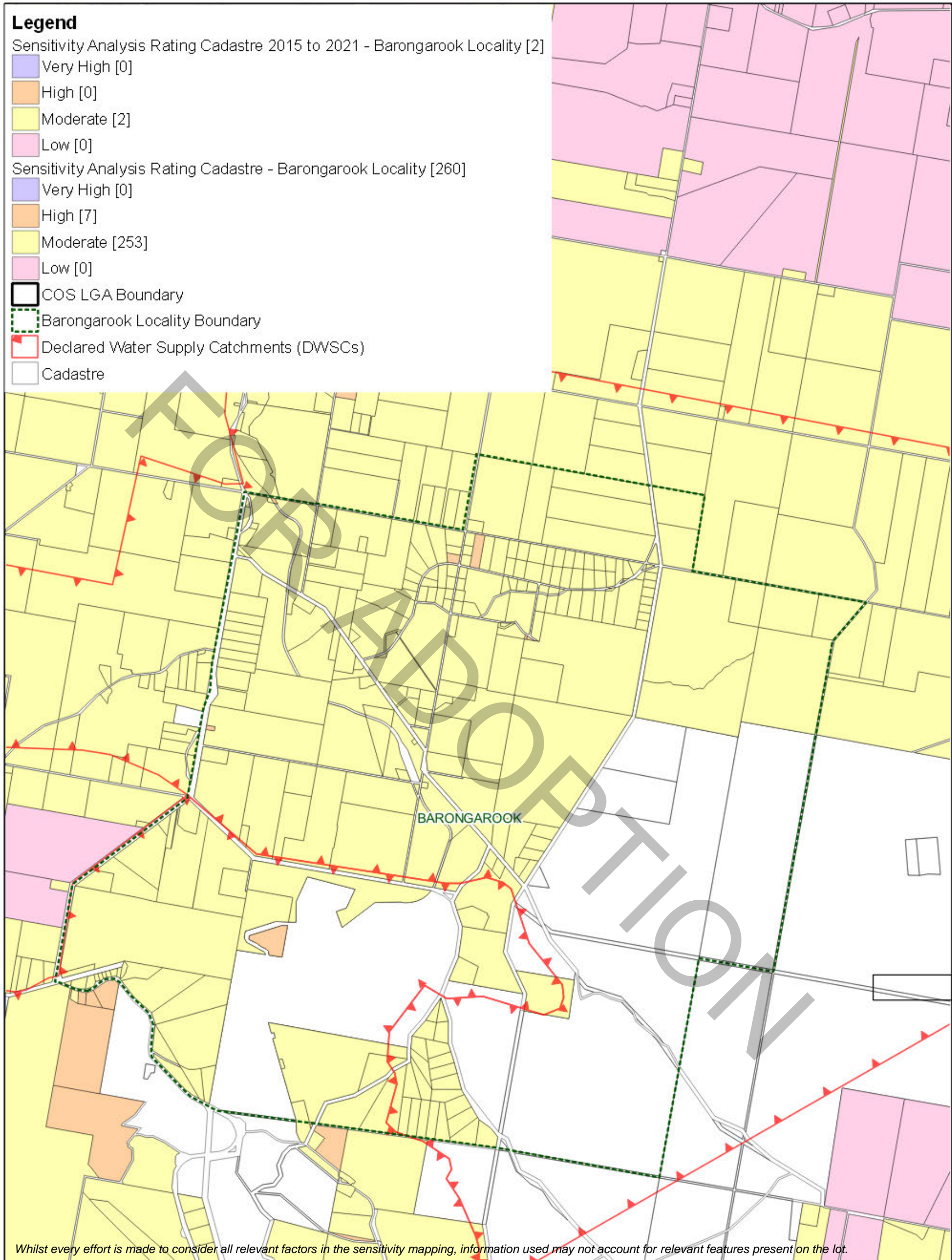
### 3c. Summary of Constraints to DWM

Characteristic	Description
Climate Zone	Zone 3.
Surface waterways & catchments	The locality is located entirely within the Barwon Downs Wellfield Intake (Geelong) DWSC and Gellibrand River DWSC in the south. Boundary Creek is located to the south of the settlement, traversing southwest-northeast. Ten Mile Creek and Dividing Creek are also located to the south of the settlement. Tributaries of the Barongarook Creek West Branch flow into the surrounding region from the north into the settlement.

<b>Characteristic</b>	<b>Description</b>
<b>Groundwater</b>	Proximity to groundwater bores: distributed throughout.
<b>Land subject to inundation</b>	Nil
<b>Useable lot area Settlement (Locality)</b>	High: 18 (26) Moderate: 6 (16) Low: 77 (213) Compliant: 0 (7)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominately in the Farming Zone with some Public Conservation and Resource Zone to the southeast. The settlements (one in the south and the other in the north) are zoned Rural Living. Lots are predominantly non-compliant, including both settlement areas. Compliant: 0 (12) Non-compliant: 101 (250)
<b>Slope Settlement (Locality)</b>	High: 1 (16) Moderate: 16 (48) Low: 84 (198)
<b>Geology</b>	Dilwyn Formation of the Wangeripp Group (Eocene age) which consists of shallow marine, coastal barrier and back beach lagoonal deposits. Intertwined with Demons Bluff formation of the Niranda Group which consists of shallow marine and minor lagoonal deposits, with some alluvial and fluvial deposits associated with the Eumeralla Formation.
<b>Soil suitability Settlement (Locality)</b>	High: 0 (0) Moderate: 101 (262) Low: 0 (0) Variable soil landscapes (four).  The majority of the locality and southern region of the northern settlement area consists of soil landscape unit '88' which forms along the rolling plains in the western part of the Barwon catchment and northern parts of the Gellibrand catchment and consists of grey sand soils to more than 2m depth. The soils consist of apedal sandy loam to sand over weakly structured sandy clay. Limitations include low fertility and coarse fragments.  The northwest region of the locality consists of soil landscape unit '92' (moderate rating) which forms in the undulating plain in the north part of the Gellibrand River Catchment and consist of mottled yellow and red

Characteristic	Description
	<p>gradational soil to more than 2m depth. The soils consist of moderately structured sandy loam over light clay. Limitations include low fertility and low p-sorb.</p> <p>Around Bushbys Road in the northwest consists of soil landscape unit '93' (moderate rating) which forms in the gently undulating plain in the western parts of Barwon Catchment and consist of mottled gradational soil to more than 2m depth. The soils consist of weakly structured loam over moderately structured medium clay. Limitations include low fertility, p-sorb and coarse fragments.</p> <p>The southwest region of the locality consists of soil landscape unit '90' which forms on the rolling hills in the northern upper reaches of the Gellibrand catchment and consists of mottled gradational soil to more than 2m depth. The soil consists of apedal fine sandy loam over weakly structured silty clay loam. Limitations include low p-sorb, low fertility and restricted drainage.</p>
<b>Sensitivity Overlay</b>	<p>Depth to Groundwater Compliance: variable compliancy; predominantly compliant, except for the middle of the locality and a few lots in the northern settlement.</p> <p>Landslip: minimal.</p> <p>Vegetation: Otway Forest Park and Great Otway National Park to the south to southeast.</p>
<b>Sensitivity Analysis Rating Settlement (Locality)</b>	<p>Very High: 0 (0)</p> <p>High: 2 (7)</p> <p>Moderate: 99 (255)</p> <p>Low: 0 (0)</p>

#### 4c. Sensitivity Analysis (Maps)



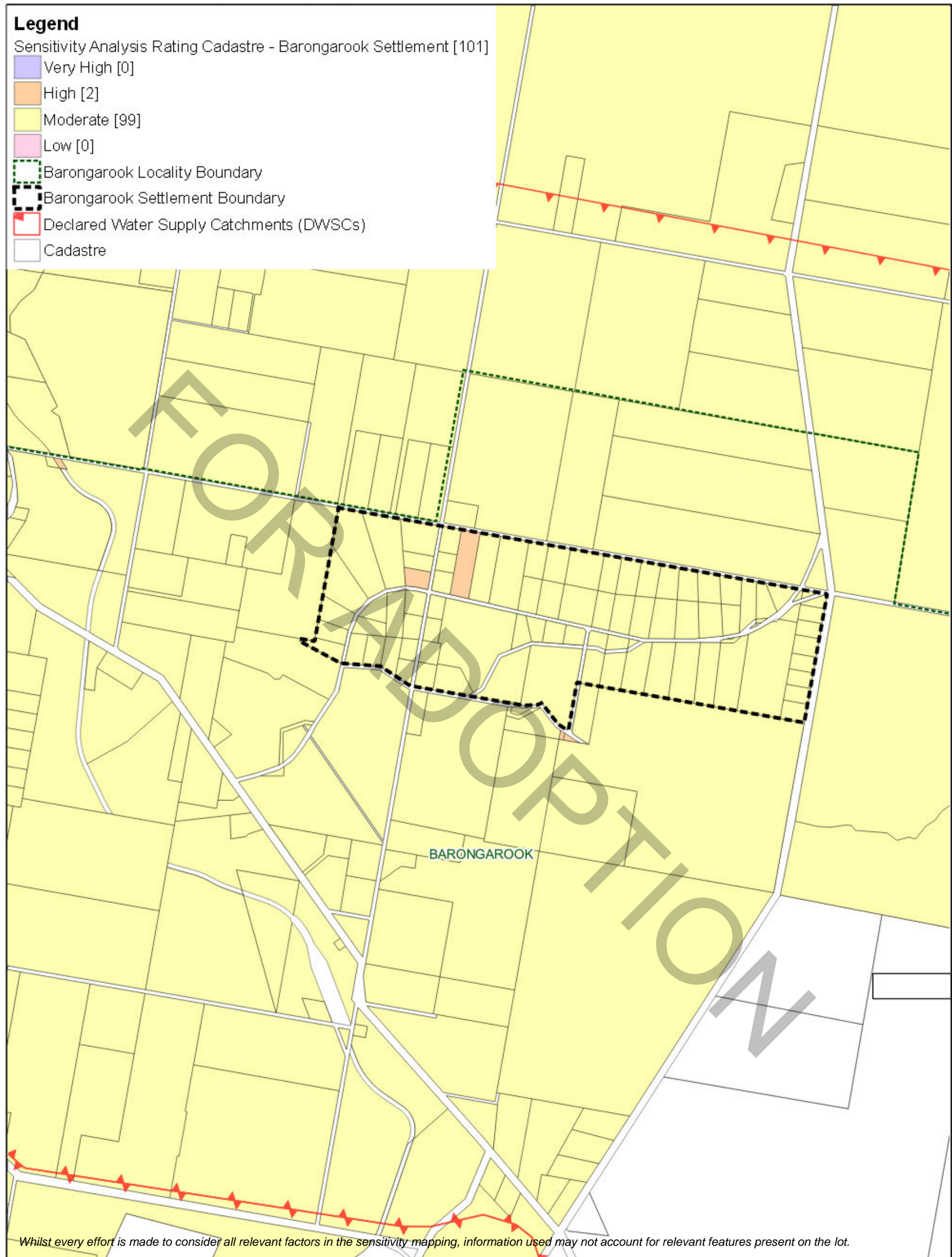
*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

**Figure c1: Sensitivity Analysis - Bargonarook Locality**

Colac Otway Shire DWMP Review



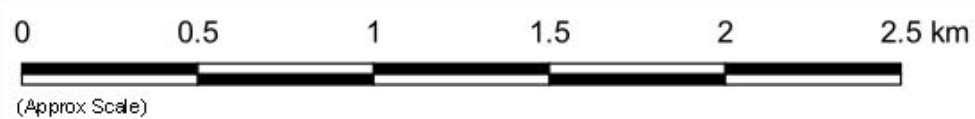
Revision	4
Drawn	JK
Approved	MS



*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

**Figure c2: Sensitivity Analysis - Barongarook Settlement**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS

## 5c. System Selection

Due to the dominance of heavy-textured soils in the Barongarook locality, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays).

EPA Code of Practice (2013) (Section 2.2.2) identifies secondary treatment standard (or better) followed by subsurface pressure-compensating irrigation as current best-practice in Victoria for substantially reducing the risk associated with unsewered development. Further, the Code describes a “Wick trench/bed” land application option that may be incorporated with secondary treatment for consideration on sites constrained by climate or lot ‘useable area’, particularly within the DWSCs. Any variation from this best-practice approach must be provided with detailed supporting information to demonstrate suitability.

The System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 6c. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for Barongarook was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed ‘Not Applicable’ in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for Barongarook are provided below.

## 7c. General Conclusion

The lots within the locality have predominantly been assigned a Moderate Sensitivity to sustainable DWM, with some lots assigned a Low or High Sensitivity Rating. Predominantly, the Standard LCA will be required, with use of the System Sizing tables deemed appropriate. The Low Sensitivity Rating lots within a DWSC are required to complete a Standard LCA as per the current EPA Code of Practice’s requirements. Particular attention needs to be directed towards assessing cumulative impact of DWM systems on the environment to ensure that the DWSCs are protected and that groundwater resources are preserved.



Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Barongarook										
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	5	5	4	3.5	3	2			
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> )†					N/A (Alternative Land Application System Required)			
5 + bedroom residence	1,080	386		600	831	1,350				
4 bedroom residence	900	322		500	693	1,125				
1-3 bedroom residence	720	258		400	554	900				
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012										
† not including spacing and setbacks										
Conventional Absorption Trenches and Beds - Primary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	
	DLR (mm)	Not supported (Alternative Land Application System Required)								
Development Type	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	
	DLR (mm)	20*	20*	15	10	12	8	5	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	62		87	145	115	199		441	
4 bedroom residence	900	52		73	121	96	166		368	
1-3 bedroom residence	720	42		58	97	77	133		294	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012										
LPED Irrigation Systems - Primary or Secondary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	N/A (Alternative Land Application System Required)	4	3.5	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)			
Development Type	Daily (L/day)		Total min. basal or 'wetted area' (m <sup>2</sup> )†							
5 + bedroom residence	1,080		744	1,135						
4 bedroom residence	900		620	946						
1-3 bedroom residence	720	496	757							
† required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks										
Wick Trenches and Beds - Secondary Treated Effluent Only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	
	DLR (mm)	25	30	20	10	12	8	8	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	49	40	62	145	115	199		441	
4 bedroom residence	900	41	33	52	121	96	166		368	
1-3 bedroom residence	720	33	27	42	97	77	133		294	

## D. Barwon Downs Locality Report

### 1d. Introduction

The Barwon Downs locality is located on the northern slopes of the Otway Ranges, with the town located on the northern foothills. The landform consists of dissected hills abutting rivers and streams, and alluvial terraces with relatively flat topography. The majority (approximately 80%) of the region is located within a DWSC, with the town located within the Upper Barwon DWSC. The region to the northeast of the town also falls within the Gosling Creek DWSC.

The locality has a population of approximately 131 residents (ABS Census, 2016). There are approximately 260 and 85 unsewered lots located within the Barwon Downs locality and town, respectively. There are 8 new lots with DWM systems within the locality from June 2015-2021. There are 72 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Barwon Downs region are summarised as follows:

- 11 AWTS (4 subsurface irrigation, 1 trench and 6 unknown);
- 1 composting toilet (1 unknown);
- 3 secondary treatment system (3 unknown);
- 10 sand filters (10 subsurface irrigation);
- 33 septic tank (6 trenches and 27 unknown);
- 5 worm farms (3 trenches and 2 unknown); and
- 9 unknown (3 trenches and 6 unknown).

### 2d. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Barwon Downs Township Master Plan Report (June, 2006);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3d. Site Assessment Results

The following table summarises the results from the representative audits conducted by Consultant staff in September 2014.

Characteristic	Description
Land use	Barwon Downs comprises a range of land uses, including dairy, forestry, rural living and tourism.
Occupancy rates	2.3 (Barwon Downs State Suburb, ABS Census, 2011).
Typical soils	Yellow mottled duplex soil with very deep (60 cm) silt loam grading to silty clay loam surface and subsurface over strongly mottled clay

Characteristic	Description
	subsoil; between 25-60 cm the subsurface was saturated (25 July 2014). Drainage is generally poor and permeability is generally low.
<b>AS/NZS 1547:2012 soil categories</b>	5 (Light Clays) and 6 (Medium to Heavy Clays)
<b>Existing Systems</b>	<p><b>Separate Blackwater and Greywater</b></p> <p>Of the eight systems inspected during field investigations, seven systems (88%) comprised separate blackwater treatment in a septic tank or composting toilet, with direct greywater diversion to an adjacent paddock, street drain, trench or AWTS. Where discharged to paddocks or neighbouring vacant lots, greywater was typically ponded near the diversion outlet pipe, and often in areas trampled by livestock (cattle and sheep).</p> <p>The blackwater septic tanks were typically 40+ years old and the time since last pump-out was unknown for the majority (due to owners not being home to ascertain). Septic effluent discharged to one or more conventional absorption trenches (or was assumed to if trenches could not be identified). The trench dimensions were generally unclear, and it is likely that most trenches were undersized for the number of bedrooms. The majority of trenches or/and available LAAs were located on land of less than 4% slope and appeared to be parallel with contours.</p> <p>One greywater diversion system was pumped with a home-made pump-well, with moveable sprinklers around fruit trees. The AWTS had not been serviced since installation approximately 4 years ago and the sprinkler heads periodically become blocked. Setback distances from boundaries were inadequate for this system.</p> <p><b>Combined Blackwater and Greywater</b></p> <p>One of the eight systems (13%) inspected was assumed to have a combined wastewater treatment system, based on layout of pipework and age of dwelling. Septic effluent discharged to a series of conventional absorption trenches which appeared to be working well and were adequately sized.</p>

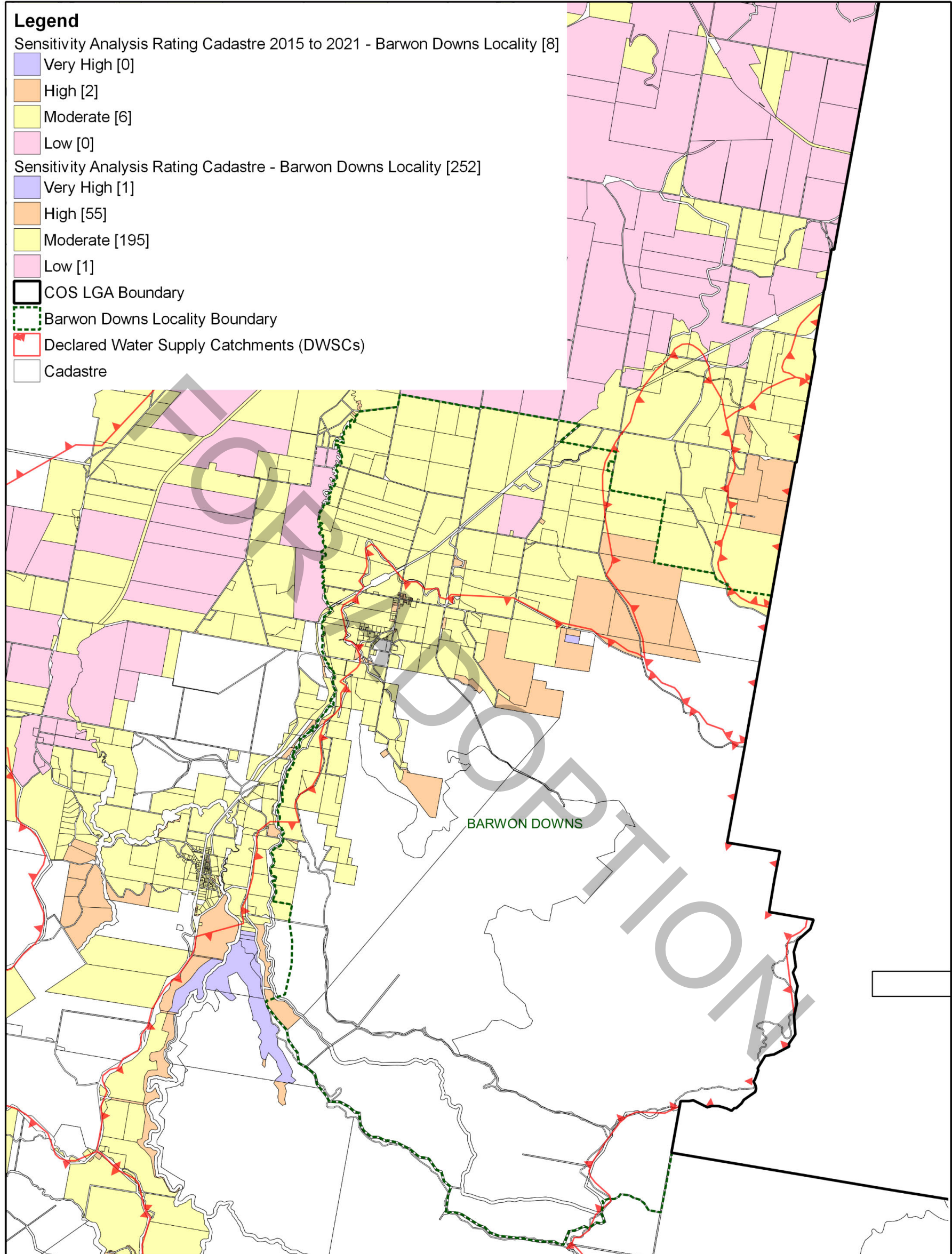
#### 4d. Summary of Constraints to DWM

Characteristic	Description
<b>Climate Zone</b>	Majority within Zone 3.
<b>Surface waterways &amp; catchments</b>	The locality consists of an extensive drainage network. It is located within the DWSCs of Upper Barwon, Gosling Creek and a small part of Matthew Creek in the northeast. The locality is predominantly located within a DWSC, except for approximately 1km north of the most northern extent of the town. The major waterways include: Denn Creek

Characteristic	Description
	to the east of the town, Callahan Creek North and South Branches and Barwon River East Branch to the west and south of the town, Dewing Creek, Seymour Creek, Kind Creek, and Mackie Creek.
<b>Groundwater</b>	Proximity to groundwater bores: primarily located around the town and north-western region of the locality.
<b>Land subject to inundation</b>	Along Barwon River East Branch and Callahan Creek.
<b>Useable lot area Town (Locality)</b>	High: 43 (77) Moderate: 23 (28) Low: 19 (148) Compliant: 0 (7)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominantly zoned Farming Zone to the north and Public Conservation and Resource Zone to the south. The town is zoned as Township Zone. Compliance is variable throughout the locality, with the town predominantly compliant. Compliant: 80 (110) Non-compliant: 5 (150)
<b>Slope Town (Locality)</b>	High: 0 (49) (in southern region) Moderate: 1 (22) Low: 84 (189)
<b>Geology</b>	Eumeralla Formation of the Otway Group is predominant in the east, intertwined with the Dilwyn Formation of the Wangeripp Group (Eocene age) which consists of shallow marine, coastal barrier and back beach lagoonal deposits. Intertwined with Demons Bluff formation of the Niranda Group which consists of shallow marine and minor lagoonal deposits, with some unnamed alluvium flood plain deposits along waterways. The northwest corner is underlain by Gellibrand Marl from the Heytesbury Group continental shelf deposit.
<b>Soil suitability</b>	High: 0 (19) Moderate: 85 (241) Low: 0 (0) Variable soil throughout the locality (7 different units); however, it is noted that the locality is spatially expansive.

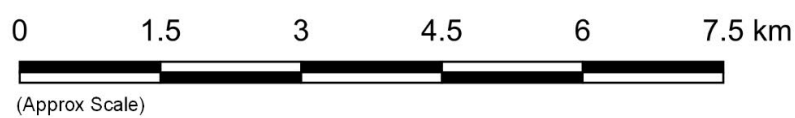
Characteristic	Description
	<p>The town consists of soil landscape units '78' and '73' which form on the undulating plain inland of Otway Range and steep rolling hills on the northern periphery of the Otway Range and consists of texture contrast soils with ironstone to 2m depth. The soils consist of weakly structured sandy loam over strongly structured medium to heavy clay. Limitations include low fertility, low p-sorb, sodic, dispersive, restricted drainage and coarse fragments.</p> <p>The central west region consists of soil landscape unit '76' which form on the undulating plains and consist of grey sand soils to more than 2m depth. The soils consist of weakly structured loamy sand over apedal sand. Limitations include low fertility.</p> <p>The northeast to southwest transversing region consists of soil landscape unit '63' which forms on deeply dissected hills of the Otway Ranges and consists of brown texture contrast soils to 0.9m depth. The soils consist of weakly structured loam over strongly structured heavy clay. Limitations include sodicity and very acidic.</p> <p>The southern region consists of soil landscape unit '61' which also form on the deeply dissected hills of the Otway Ranges and consist of brown gradational soils to 1.2m depth. The soils consist of moderately structured silty loam over clay loam. Limitations include acidity and restricted drainage.</p> <p>The regions adjacent to the river consist of soil landscape unit '95' which forms on the alluvial floodplain of the Barwon River and its tributaries with numerous cut-off meanders. The soil consists of a moderately structured fine sandy clay loam over medium clay to more than 2m depth. Limitations include restricted drainage and dispersive.</p>
<b>Sensitivity Overlay</b>	<p>Depth to Groundwater Compliance: predominantly compliant, except to the north and west of the town along Barwon River East Branch.</p> <p>Landslip: some to the south</p> <p>Vegetation: Great Otway National, Otway Forest Park, and Barwon Downs bushland reserve.</p>
<b>Sensitivity Analysis Rating Town (Locality)</b>	<p>Very High: 0 (1)</p> <p>High: 24 (57)</p> <p>Moderate: 61 (201)</p> <p>Low: 0 (1)</p>

#### 5d. Sensitivity Analysis (Maps)

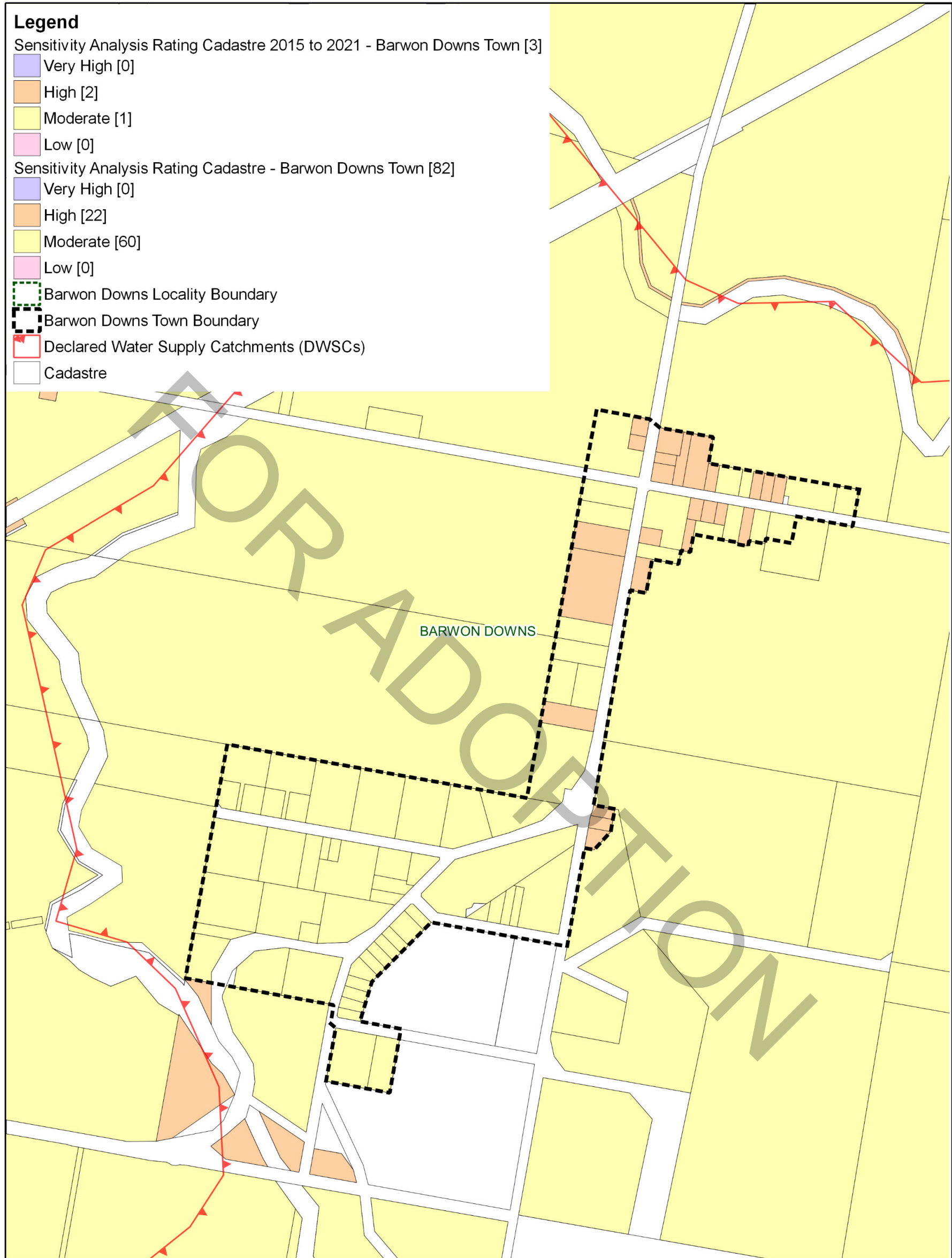


**Figure d1: Sensitivity Analysis - Barwon Downs Locality**

Colac Otway Shire DWMP Review



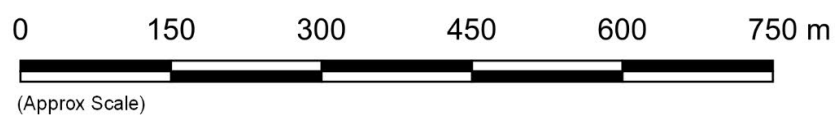
Revision	4
Drawn	JK
Approved	MS



**Figure d2: Sensitivity Assessment - Barwon Downs Town**

Colac Otway Shire DWMP Review

**W** Whitehead & Associates  
Environmental Consultants



Revision	4
Drawn	JK
Approved	MS

## 6d. System Selection

Due to the dominance of heavy-textured soils in the Barwon Downs locality, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays). Current best-practice is for effluent to be treated to a secondary standard or better, particularly within the DWSCs. Any variations to this must be provided with detailed evidence and explanations to demonstrate its suitability.

The System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 7d. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for Barwon Downs was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as 'Not Applicable' for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as 'Not Applicable' for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed 'Not Applicable' in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Barwon Downs locality are provided below.

## 8d. General Conclusion

The lots within Barwon Downs, including the entire town, have predominantly been assigned a Moderate Sensitivity Rating to sustainable DWM. Predominantly, Standard LCAs will be required, with the use of System Sizing Tables deemed appropriate. The Low Sensitivity Rating lots within a DWSC are required to complete a Standard LCA as per the current EPA Code of Practice's requirements. Particular attention needs to be directed towards ensuring that the soil stability and appropriate setbacks to surface waterways and groundwater bores are maintained.



Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Barwon Downs									
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	5	5	4	3.5	3	2		
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing or setbacks							
5 + bedroom residence	1,080	419		684	1,000	1,863	2,556		
4 bedroom residence	900	349		570	834	1,552	2,130		
1-3 bedroom residence	720	280		456	667	1,242	1,704		
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012									
Conventional Absorption Trenches and Beds - Primary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)
	DLR (mm)	Not supported (Alternative Land Application System Required)							
Development Type	Daily (L/day)								
5 + bedroom residence	1,080								
4 bedroom residence	900								
1-3 bedroom residence	720								
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only
	DLR (mm)	20*	20*	15	10	12	8	5	5
Development Type	Daily (L/day)	Total min. basal or 'wettered area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing or setbacks							
5 + bedroom residence	1,080	63		89	150	118	208	488	
4 bedroom residence	900	53		74	125	98	173	407	
1-3 bedroom residence	720	42		59	100	79	139	326	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012									
LPED Irrigation Systems - Primary or Secondary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	N/A	N/A	N/A	N/A	N/A	N/A		
Development Type	Daily (L/day)	(Alternative Land Application System Required)							
5 + bedroom residence	1,080								
4 bedroom residence	900								
1-3 bedroom residence	720								
† required for zero wet weather storage (m <sup>2</sup> ) not including spacing or setbacks									
Wick Trenches and Beds - Secondary Treated Effluent Only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)
	DLR (mm)	25	30	20	10	12	8	8	
Development Type	Daily (L/day)	Total min. basal or 'wettered area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing or setbacks							
5 + bedroom residence	1,080	49	40	63	150	118	208		N/A (Alternative Land Application System Required)
4 bedroom residence	900	41	34	53	125	98	173		
1-3 bedroom residence	720	33	27	42	100	79	139		

## E. Beeac Locality Report

### 1e. Introduction

Beeac is a rural town located on the northern side of Lake Beeac, approximately 19km north of Colac. The landform features undulating agricultural land on the Western Volcanic Plains.

The locality has an estimated permanent population of approximately 370 residents (ABS Census, 2016). There are approximately 642 and 256 unsewered lots located within the Beeac locality and town, respectively. There are 14 new lots with DWM systems within the locality from June 2015-2021. There are 99 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Beeac locality are summarised as follows:

- 25 AWTs (3 subsurface, 1 trench, 5 drip irrigation, 16 unknown);
- 3 sand filters (1 subsurface irrigation and 2 unknown);
- 47 septic tanks (11 trenches, 1 irrigation and 35 unknown); and
- 24 unknown (6 trenches, 1 subsurface irrigation, and 17 unknown).

No field investigations were conducted within Beeac locality as part of the 2014 field assessments; however, soil investigations were conducted to confirm the soil type. There have been noted issues with the earthen stormwater drains; particularly with regards to odour and amenity with standing water which could also contain wastewater in the form of greywater or combined wastewater. These earthen stormwater drains flow into Lake Beeac.

### 2e. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Urban Design Framework Plans for Beeac (2006/2007);
- Lake Beeac Catchment Plan (1998);
- Beeac Cemetery and Grasslands Land Management Plan (February, 2012);
- Colac Otway Domestic Wastewater Management Plan (2007);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

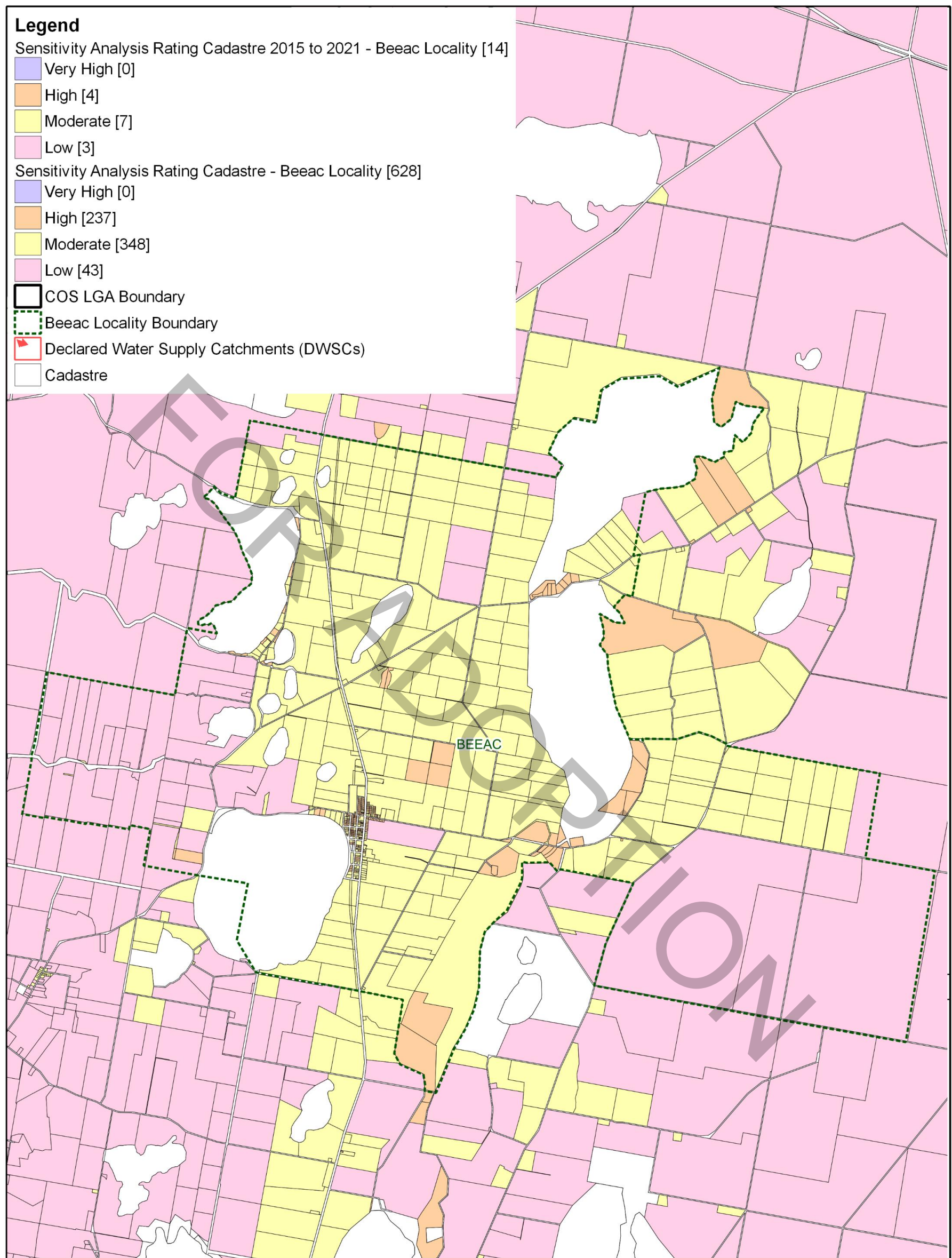
### 3e. Summary of Constraints to DWM

Characteristic	Description
Climate Zone	Zone 2.
Surface waterways & catchments	The locality has an extensive coverage of lakes, with Lake Beeac forming the largest waterbody to the southwest of the town. Other waterbodies include: Lake Cunadare to the northwest, Thomas Lake, Cemetery Lake, Butchers Lake, Calvert Lough and constructed drainage network to the east of the town.

Characteristic	Description
<b>Groundwater</b>	Proximity to groundwater bores: primarily located within the western half of the locality.  Groundwater is seasonally high at some sites but depth hasn't been ascertained.
<b>Land subject to inundation</b>	Extensive, particularly to the east of the town and around Lake Beeac.
<b>Useable Lot Area Town (Locality)</b>	High: 187 (242) Moderate: 60 (83) Low: 9 (303) Compliant: 0 (14)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominantly zoned Farming Zone, with some land around the lakes in the Public Conservation and Resource Zone. The town is zoned as Township Zone.  Compliance is variable throughout the locality; the Farming Zoned lots are generally non-compliant to the east of the town and the town is compliant.  Compliant: 249 (268) Non-compliant: 7 (374)
<b>Slope Town (Locality)</b>	High: 0 (0) Moderate: 0 (0) Low: 256 (642)
<b>Geology</b>	Beeac is underlain by unnamed stony rises and hummocky lava flows of Newer Volcanic Group and unnamed non-marine sediments comprising swamp, lake deposits of clay, silt, sand and humic soil that is moderately sorted and unconsolidated. Northeast section has hills with gentle crests and flat plains located on lunette, lake and beach deposits of clay, quartz sand, coxiella shells and minor swamp deposits.
<b>Soil suitability Town (Locality)</b>	Soil has moderate to poor drainage and consists predominantly of shallow silty loam or sandy grey silt topsoil, followed by moist dark grey to brown silty clay, over moist grey or grey/yellow clay. Soil permeability 0.08-0.06m/day  High: 256 (605) Moderate: 0 (37) Low: 0 (0)

Characteristic	Description
	<p>The town and majority of the locality consists of soil landscape unit '148' which forms on the gently undulating plains with low rises and lunettes, swamps and lakes and consists of texture contrast soils to less than 2m depth. The soil consists of strongly structured medium clay over heavy clay. Limitations include restricted drainage, dispersive, very acidic, coarse fragments and sodic.</p> <p>Surrounding soil landscape '148' and to the east consists of soil landscape unit '153' which forms on gently undulating plains with swamps, lunettes and lakes and consists of textured contrast soils to less than 2m depth. The soils consist of strongly structured fine sandy clay loam over light to heavy clay. Limitations include restricted drainage, dispersive, very acidic, sodic and coarse fragments.</p> <p>The land to the west of the town consists of soil landscape unit '114' which forms on undulating basalt plains and stony rises. The soil consists of strongly structured clay loam to medium clay to less than 1.5m depth. Limitations include restricted drainage and coarse fragments.</p>
<b>Sensitivity Overlay</b>	<p>Depth to Groundwater Compliance: all compliant.</p> <p>Landslip: Nil.</p> <p>Vegetation: Lake Beeac to the south/southwest of town is an internationally important habitat for waterbirds, Lough Calvert Drainage Scheme (central), Lake Cundare, Cockatoo and Cemetery to the north of Lake Beeac.</p>
<b>Sensitivity Analysis Rating Town (Locality)</b>	<p>Very High: 0 (0)</p> <p>High: 187 (241)</p> <p>Moderate: 69 (355)</p> <p>Low: 0 (46)</p>

#### 4e. Sensitivity Analysis (Maps)

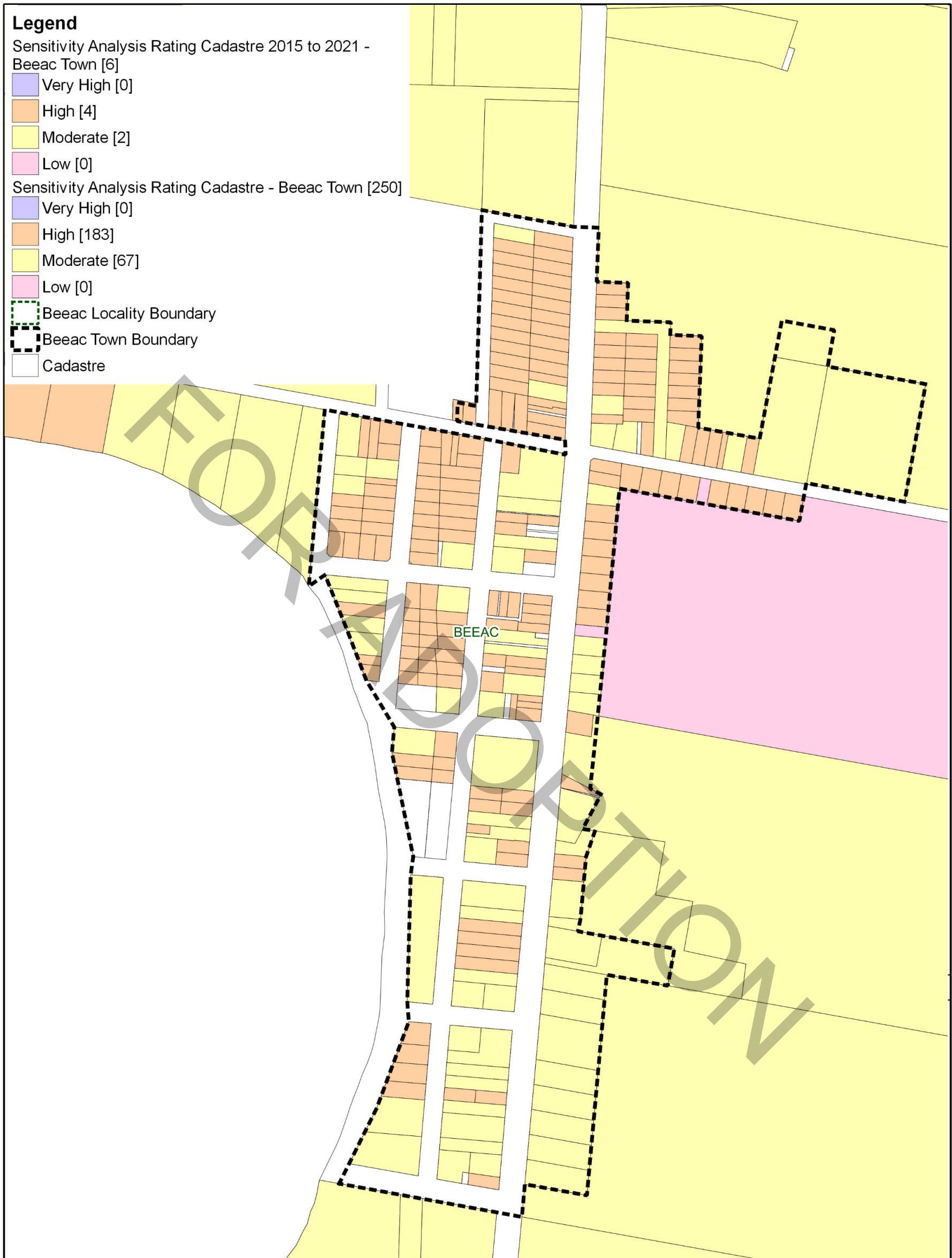


**Figure e1: Sensitivity Analysis - Beeac Locality**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS



**Figure e2: Sensitivity Analysis - Beeac Town**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS

## 5e. System Selection

Due to the dominance of heavy-textured soils in the Beeac locality, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays). The System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 6e. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. The water balances used monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for Alvie, as it was compared with that of Beeac and found to be very similar, with very little size differences in water balance results. The climate data for Alvie was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as 'Not Applicable' for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as 'Not Applicable' for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed 'Not Applicable' in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Beeac locality are provided below.

## 7e. General Conclusion

The Sensitivity Rating with regards to sustainable DWM varied throughout the Beeac locality. Council, Standard and Detailed LCAs will be required, with the use of the Sizing Tables deemed appropriate except for the Detailed LCA which requires site-specific design. Particular attention needs to be directed towards ensuring that systems are sized based on the most limiting soil horizon, that the amenity of the Lakes is maintained, that the minimum depth from the base of the land application area and the watertable are maintained, and that DWM system components and land application areas are constructed above the COS Planning Schemes land subject to inundation overlay.

Alvie and Beeac									
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	5	5	4	3.5	3	2		
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing and setbacks							
5 + bedroom residence	1,080	268		356	426	530	1,039		
4 bedroom residence	900	223		297	355	442	866		
1-3 bedroom residence	720	127		237	284	353	693		
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012									
Conventional Absorption Trenches and Beds - Primary or Secondary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Massive Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)
	DLR (mm)	Not supported (Alternative Land Application System Required)							
Development Type	Daily (L/day)								
5 + bedroom residence	1,080								
4 bedroom residence	900								
1-3 bedroom residence	720								
Evapotranspiration-Absorption Trenches and Beds - Primary or Secondary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only
	DLR (mm)	20*	20*	15	10	12	8	5	5
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing and setbacks							
5 + bedroom residence	1,080	58		78	123	100	128	281	
4 bedroom residence	900	48		65	102	83	132	234	
1-3 bedroom residence	720	39		52	82	67	106	188	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012									
LPED Irrigation Systems - Primary or Secondary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	N/A (Alternative Land Application System Required)	4	3.5	3	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)		
Development Type	Daily (L/day)		Total min. basal or 'wetted' area required (m <sup>2</sup> )†						
5 + bedroom residence	1,080		379	460	584				
4 bedroom residence	900		316	383	487				
1-3 bedroom residence	720	253	307	390					
† required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks									
Wick Trenches and Beds - Secondary Treated Effluent Only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)
	DLR (mm)	25	30	20	10	12	8	8	5
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing and setbacks							
5 + bedroom residence	1,080	46	38	58	123	100	128	281	
4 bedroom residence	900	38	32	48	102	83	132	234	
1-3 bedroom residence	720	31	25	39	82	67	106	188	



## F. Beech Forest Locality Report

### 1f. Introduction

Beech Forest is located approximately 43km south of Colac on the northern edge of the Otway Ranges. The landform consists of rolling hills and crests of the Otway Ranges. Approximately half of the locality is located within a DWSC; with the northern region located within Gellibrand River DWSC and the southeast region located within Barham River DWSC. The main road through the town runs along a ridgeline that forms the DWSC boundary as indicated by the surface water informative map A1, Appendix A.

The locality has an estimated permanent population of approximately 82 residents (ABS Census, 2016). There are approximately 332 and 142 unsewered lots located within the Beech Forest locality and town, respectively. There are 3 new lots with DWM systems within the locality from June 2015-2021. There are 41 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Beech Forest locality are summarised as follows:

- 14 AWTs (1 irrigation, 3 drip irrigation, 2 trenches, and 8 unknown);
- 1 sand filter (1 drip irrigation);
- 12 septic tanks (4 trenches, 8 unknown);
- 1 worm farm (1 trench); and
- 13 unknown (6 trenches, 1 subsurface irrigation and 6 unknown).

### 2f. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Beech Forest Township Master Plan Report (May, 2004);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3f. Site Assessment Results

The following table summarises the results from the representative audits conducted by Consultant staff in September 2014.

Characteristic	Description
Land use	Beech Forest comprises a range of land uses, including dairy, forestry, rural living and tourism.
Occupancy rates	2.3 (Beech Forest State Suburb, ABS Census, 2011).
Typical soils	Gradational profile of dark grey brown sandy clay loam grading to dark brown silty clay loam between 10-25cm, grading to dark brown to dark reddish brown sandy clay loam with excellent structure and fairly common small rock fragments. Drainage and permeability are variable depending on slope and position.

Characteristic	Description
<b>AS/NZS 1547:2012 soil categories</b>	4 (Clay Loams) and 5 (Light Clays)
<b>Existing Systems</b>	<p><b>Separate Blackwater and Greywater</b></p> <p>Of the six systems inspected during field investigations, just one (17%) comprised separate blackwater treatment in a septic tank, with direct greywater diversion to the ground surface within the lot boundary.</p> <p>The blackwater septic tank was 40+ years old and had been pumped out more than 15 years ago. Septic effluent discharged to one conventional absorption trench of approximately 3m length, on land of less than 4% slope and parallel with contours. There was no evidence of blackwater effluent surcharging to the surface. Soils were typically soft or boggy, mainly due to recent high rainfall.</p> <p><b>Combined Blackwater and Greywater</b></p> <p>Five of the six systems (83%) inspected had combined wastewater treatment systems or were assumed to have combined systems, based on layout of pipework and/or age of dwelling. One of these five systems is an Aerated Wastewater Treatment System (AWTS), for a commercial property. It is likely that the proportion of combined systems in Beech Forest is likely to be less than this; however, this should be confirmed by ongoing inspections by Council.</p> <p>Septic tank effluent discharged to one or more conventional absorption trenches, or was assumed to when the LAA could not be identified. Generally, trenches were undersized for the number of bedrooms or there was inadequate suitable space for an appropriately sized LAA.</p> <p>The AWTS effluent discharged to a subsurface irrigation system of approximately 480m<sup>2</sup>.</p>

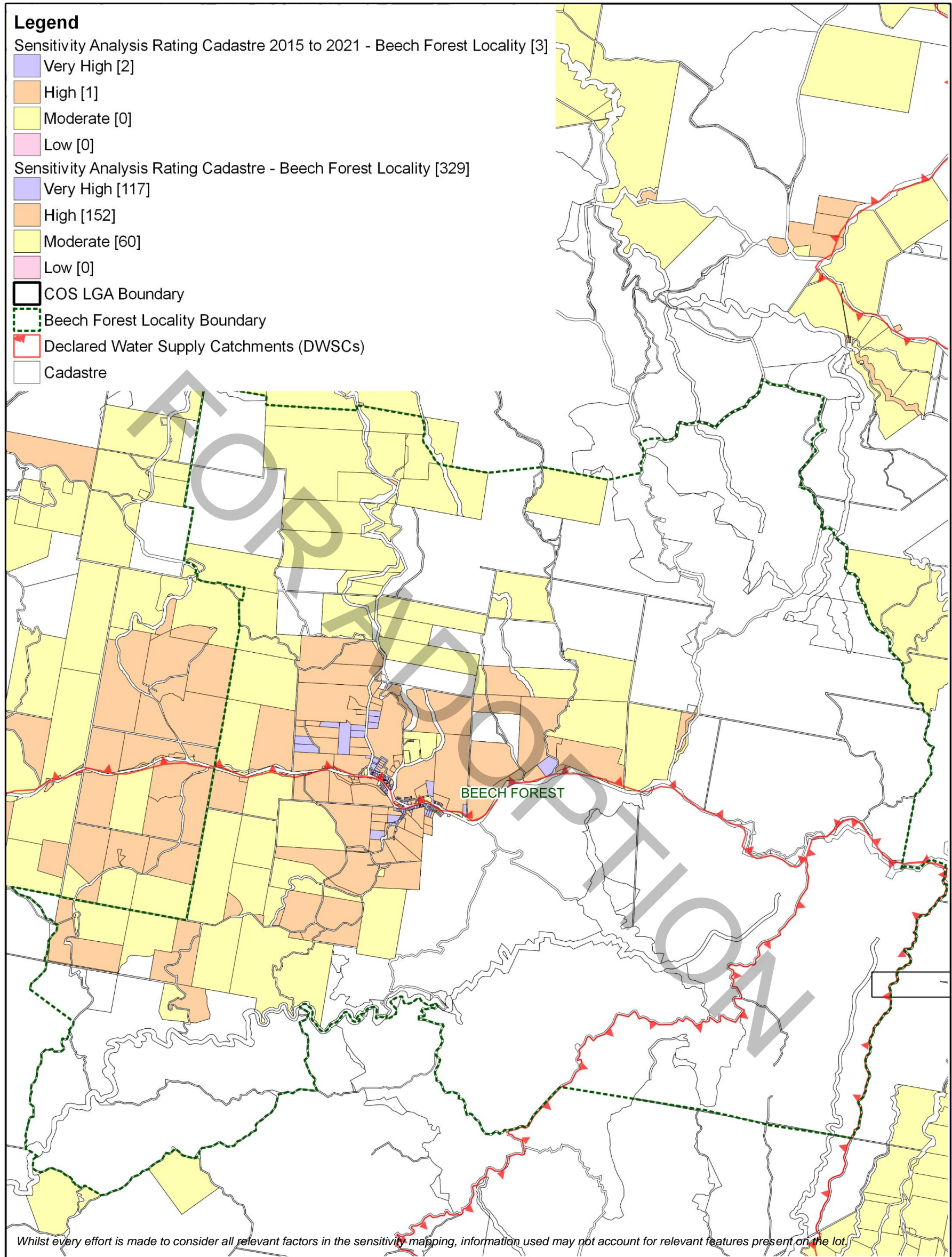
#### 4f. Summary of Constraints to DWM

Characteristic	Description
<b>Climate Zone</b>	The town is included within Zone 4 and part of the surrounding locality is located within Zone 3.
<b>Surface waterways &amp; catchments</b>	<p>The northern half and the south-eastern corner of the locality are located within the Gellibrand River DWSC and Barham River DWSC, respectively. The DWSC boundary runs along the ridgeline, which forms the major road running through the middle of the town. The drainage network is extensive, with West Gellibrand Dam located in the northeast of the locality along the Gellibrand River.</p> <p>Waterways located within the DWSC are: Asplin Creek, Larder Creek East and West Branches, Little Larder Creek, McDonald Creek,</p>

<b>Characteristic</b>	<b>Description</b>
	Charleys Creek, Barham River East Branch, Falls Creek, and Seaview Creek.  Waterways located outside of the DWSC are: Aire River, Little Aire Creek, Youngs Creek, Corgram Creek, Farrell Creek, Beech Creek, and Deppeler Creek.
<b>Groundwater</b>	Proximity to groundwater bores: minimal (only 3).
<b>Land subject to inundation</b>	Nil.
<b>Useable Lot Area Town (Locality)</b>	High: 91 (114) Moderate: 39 (62) Low: 12 (140) Compliant: 0 (16)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominantly zoned Farming Zone to the west and Public Conservation and Resource Zone to the east. The town is zoned as Township Zone.  Compliance is variable throughout the locality, with the smaller town lots generally compliant and the larger rural lots non-compliant.  Compliant: 138 (175) Non-compliant: 4 (157)
<b>Slope Town (Locality)</b>	High: 92 (216) Moderate: 25 (62) Low: 25 (54)
<b>Geology</b>	Underlain by Eumeralla Formation of Otway Group which consist of fluvial and braided stream sedimentary deposits.
<b>Soil suitability Town (Locality)</b>	High: 142 (288) Moderate: 0 (44) Low: 0 (0)  The central region of the locality, including the town, consists of soil landscape unit '60' which form on rolling hills along the top of the Otway Ranges. The soil consists of brown friable gradational soils with weakly structured clay loam over light clay to 0.9m depth. Limitations include restricted drainage.  The remainder of the locality consists of soil landscape unit '61' which forms on the deeply dissected hills of the Otway Ranges and consists of brown gradational soils to 1.2m depth. The soils consist of

Characteristic	Description
	moderately structured silty loam over clay loam. Limitations include acidity and restricted drainage.
<b>Sensitivity Overlay</b>	No depth to groundwater data. Landslip: extensive around locality Vegetation: both sides of ridgeline.
<b>Sensitivity Analysis Rating Town (Locality)</b>	Very High: 97 (119) High: 42 (153) Moderate: 3 (60) Low: 0 (0)

#### 5f. Sensitivity Analysis (Maps)

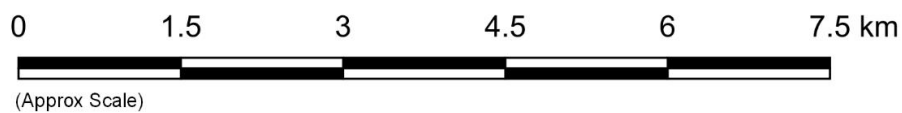


*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

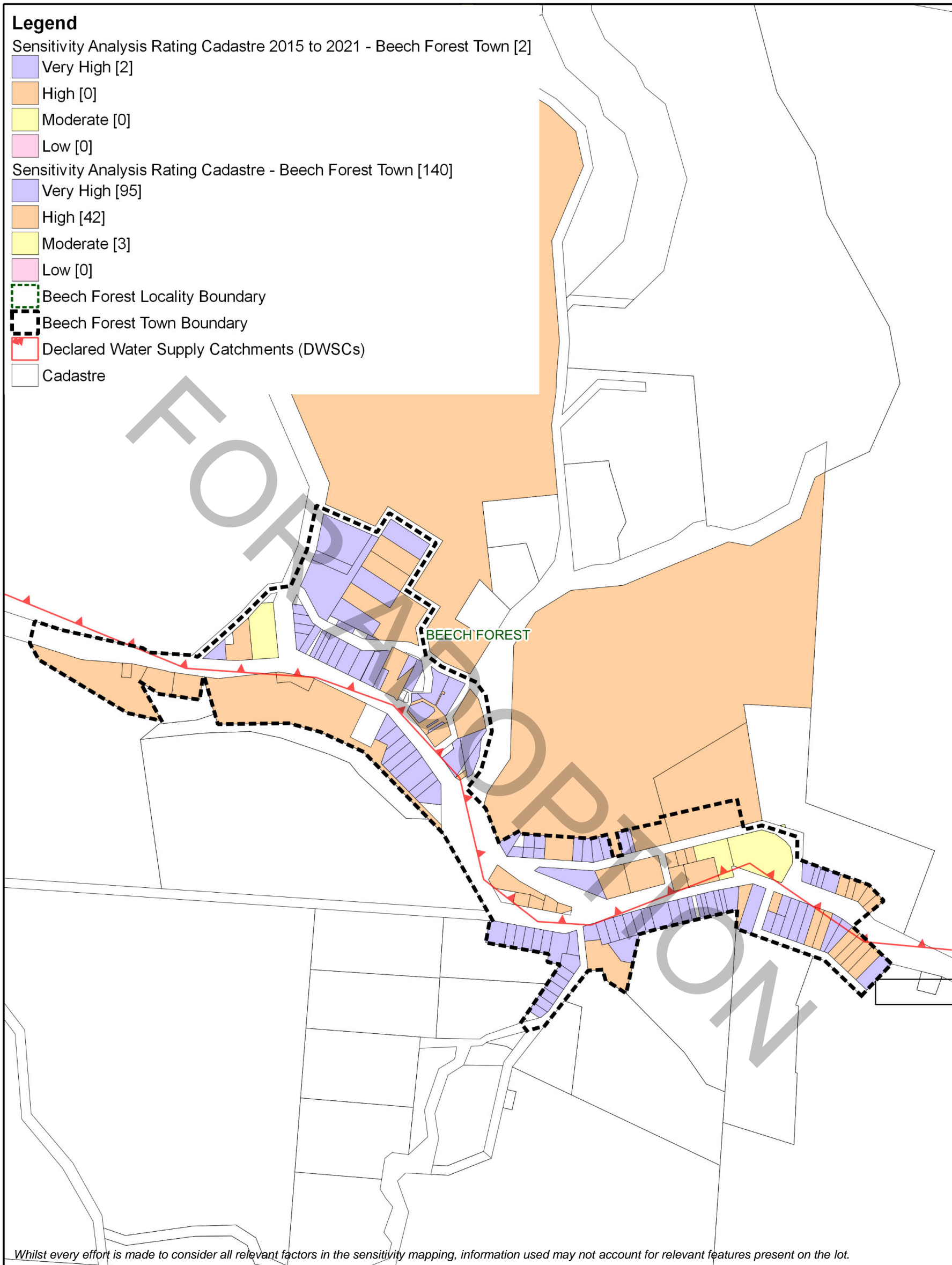
**Figure f1: Sensitivity Analysis - Beech Forest Locality**

Colac Otway Shire DWMP Review

**W Whitehead & Associates**  
Environmental Consultants



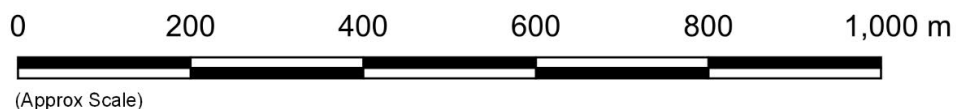
Revision	4
Drawn	JK
Approved	MS



**Figure f2: Sensitivity Analysis - Beech Forest Town**

Colac Otway Shire DWMP Review

**W** Whitehead & Associates  
Environmental Consultants



Revision	4
Drawn	JK
Approved	MS

## 6f. System Selection

Due to the shallow soils and localised steep slopes in the Beech Forest locality, conventional absorption trenches and beds are not likely to be feasible and are discouraged.

The wet climate of the Beech Forest area makes it a high risk for DWM and site-specific, detailed land capability assessment and design will be required for unsewered lots in this area. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

EPA Code of Practice (2013) (Section 2.2.2) identifies secondary treatment standard (or better) followed by subsurface pressure-compensating irrigation as current best-practice in Victoria for substantially reducing the risk associated with unsewered development. Further, the Code describes a “Wick trench/bed” land application option that may be incorporated with secondary treatment for consideration on sites constrained by climate or lot ‘useable area’, particularly within the DWSCs. Any variation from this best-practice approach must be provided with detailed supporting information to demonstrate suitability.

System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 7f. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall was sourced from the Beech Forest BoM station (090006) and average evapotranspiration data for Beech Forest was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the EPA Code of Practice. Where the Code has precluded use of a particular type of system on a certain soil type, it is shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as ‘Not Applicable’ (N/A) for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to justify the feasibility of these systems.

Sizing Tables for the Beech Forest locality are provided below.

## 8f. General Conclusion

The majority of lots within the locality have been assigned a Very High or High Sensitivity Rating to sustainable DWM. Predominantly, Detailed and Comprehensive LCAs will be required; however, all levels of LCA will require site-specific design due to the higher rainfall associated with this region (Climate Zone 4), as per Figure 3 of the DWMP Technical Document. Particular attention needs to be directed towards ensuring that DWM systems are sized based on the limiting soil horizon and that the systems selected are appropriate for steeper slopes with correct construction. The locality is also extensively considered to be prone to landslip; a geotechnical report by a suitably qualified person will need to be conducted to address this constraint.

**Beech Forest (including Ferguson and Weeaprounah)**

Drip and Spray Irrigation Systems* - Secondary Treated Effluent only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
Development Type	DIR (mm)	Not supported (Alternative Land Application System or Extensive/Modified Design Required)								
	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
<b>Notes:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012										
† not including spacing or setbacks										
Conventional Absorption Trenches and Beds - Primary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	
Development Type	DLR (mm)	Not supported (Alternative Land Application System Required)								
	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
Evapotranspiration-Absorption Trenches and Beds† - Primary Treated Effluent (Category 3a to 5a) only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	
Development Type	DLR (mm)	20*	20*	15	10	12	8	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)	
	Daily (L/day)	Total min. basal or 'wetted area' required for water balance (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	Not Supported (not considered best-practice)		131	332	206	862**			
4 bedroom residence	900			110	277	172	719**			
1-3 bedroom residence	720			88	222	138	575**			
<b>Notes:</b> * Gravels, Sands and Sandy loams are generally unsuitable for ETA trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012. ** Will require specialist advice regarding engineering and construction detail for installation.										
† will require detailed hydraulic design for effluent distribution system.										
LPED Irrigation Systems - Primary or Secondary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
Development Type	DIR (mm)	Not supported (Alternative Land Application System Required)								
	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
Wick Trench† - Secondary Treated Effluent Only - as per Section 7.4 design for High Rainfall Areas										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	
Development Type	DLR (mm)	25	30	20	10	12	8	8	N/A (Alternative Land Application System Required)	
	Daily (L/day)	Total effluent application area footprint (m <sup>2</sup> ), including interbed spacing								
5 + bedroom residence	1,080	Not Supported (not considered best-practice)		295	815	620	1,400**			
4 bedroom residence	900			230	685	490	1,140**			
1-3 bedroom residence	720			165	555	425	880**			
<b>Notes:</b> ** Will require specialist advice regarding engineering and construction detail for installation.										
† will require detailed hydraulic design for effluent distribution system.										



## G. Carlisle River Locality Report

### 1g. Introduction

Carlisle River is, spatially, the largest locality and is located approximately 30km southwest of Colac. The landform consists of dissected hills abutting rivers and streams and alluvial terraces with relatively flat topography in the dissected uplands of the Otway Ranges. Notably, the majority of the locality is located within a DWSC.

The locality has an estimated permanent population of approximately 135 residents (ABS Census, 2016). There are approximately 246 and 25 unsewered lots located within Carlisle River locality and town, respectively. There is one (1) new lot with DWM systems within the locality from June 2015-2021. There are 27 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Carlisle River locality are summarised as follows:

- 1 AWTS (1 unknown);
- 18 septic tanks (18 unknown); and
- 8 unknown (3 trenches, 5 unknown).

### 2g. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Carlisle River Township Master Plan Report (February, 2004);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3g. Site Assessment Results

The following table summarises the results from the representative audits conducted by Consultant staff in September 2014.

Characteristic	Description
Land use	Comprises a range of land uses, including dairy, forestry, rural living and tourism.
Occupancy rates	2.3 (Part of Beech Forest State Suburb, ABS Census, 2011).
Typical soils	Duplex soil. Black silt loam with excellent structure to 40cm, very wet below 25cm, abruptly overlies strongly mottled yellow brown and grey light to medium stiff clay to 70+cm. Can include lenses of dark yellow brown and strong brown mottled coffee rock between 40-50cm. Drainage and permeability are variable depending on slope and position.
AS/NZS 1547:2012 soil categories	4 (Clay Loams), 5 (Light Clays) and 6 (Medium to Heavy Clays).

Characteristic	Description
<b>Existing Systems</b>	<p><b>Separate Blackwater and Greywater</b></p> <p>Of the three systems inspected during field investigations, one (33%) comprised separate blackwater treatment in a septic tank, with direct greywater diversion to an adjacent paddock. The septic tank was not accessible, as it was covered by a concrete slab. It had been pumped out within the last two years.</p> <p>Septic effluent discharged to four conventional absorption trenches of 10m each, on slopes of less than 2%. Drainage was poor.</p> <p><b>Combined Blackwater and Greywater</b></p> <p>Two systems (67%) inspected have a combined wastewater treatment system, or were assumed to have based on layout of pipework and age of dwelling. The time since last pump-out was generally unknown (partly due to owner not being home to ascertain).</p> <p>Septic effluent discharged to one or more conventional absorption trenches (or was assumed to if trenches could not be identified). The trench dimensions were generally unclear, and it is likely that they were undersized for the number of bedrooms. The majority of trenches or/and available LAAs were located on land of less than 2% slope and appeared to be parallel with contours.</p>

#### 4g. Summary of Constraints to DWM

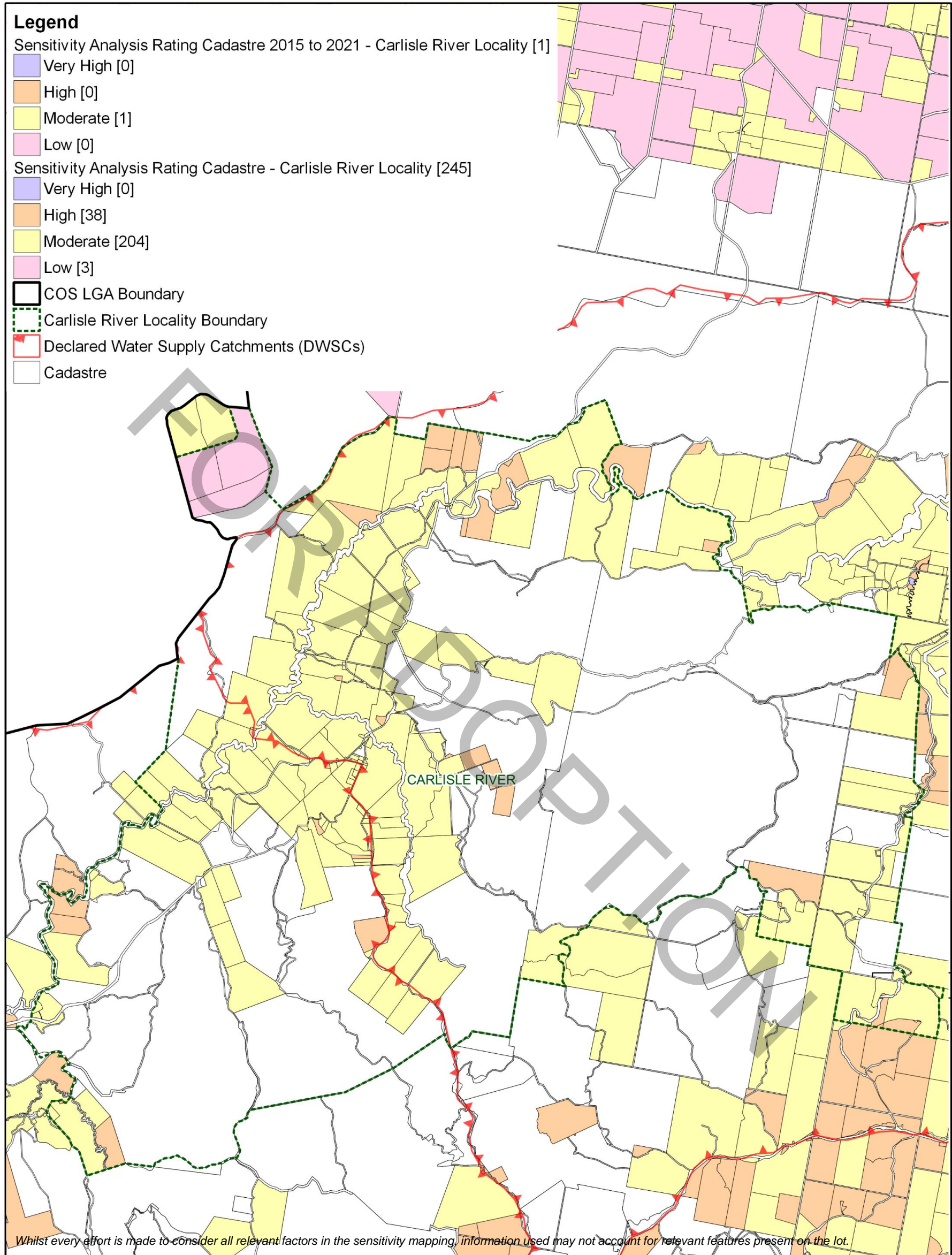
Characteristic	Description
<b>Climate Zone</b>	Predominantly within Zone 3.
<b>Surface waterways &amp; catchments</b>	Located entirely within DWSCs, i.e. Gellibrand River and Gellibrand River (South Otway). Two major rivers transverse the locality; Gellibrand River north to south in the western region of the locality and Carlisle River to the north of the town. Other waterways include: Rusty Creek, Sandy Creek, Crinoline Creek, Leahy Creek, Arkins Creek, Boggy Creek, and Charley Creek.
<b>Groundwater</b>	Proximity to groundwater bores: located within the town and along the Gellibrand River and Carlisle River.
<b>Land subject to inundation</b>	Along northern and western boundaries associated with Gellibrand River and lower reaches of the Carlisle River confluence point.
<b>Useable lot area Town (Locality)</b>	High: 9 (40) Moderate: 6 (16) Low: 10 (167) Compliant: 0 (23)

Characteristic	Description
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	<p>The locality is predominantly zoned Farming Zone and Public Conservation and Resource Zone. The town is zoned Township Zone.</p> <p>Compliance is variable throughout the locality, with all of the lots within the town compliant.</p> <p>Compliant: 25 (98)</p> <p>Non-compliant: 0 (148)</p>
<b>Slope Town (Locality)</b>	<p>High: 0 (120)</p> <p>Moderate: 0 (32)</p> <p>Low: 25 (94)</p>
<b>Geology</b>	<p>Predominately underlain by the Wiridjil Gravel Member of the Pebble Point Formation, which is comprised of fluvial and braided stream deposits.</p> <p>Moomowroong Sand Member of the Pebble Point Formation (marginal marine and beach deposits) is located near the town straddling unnamed alluvial floodplain deposits.</p> <p>East to southeast - Eumeralla Formation of the Otway group which is comprised of fluvial and braided stream deposits.</p>
<b>Soil suitability Town (Locality)</b>	<p>High: 0 (43)</p> <p>Moderate: 25 (203)</p> <p>Low: 0 (0)</p> <p>Variable soil landscapes throughout the locality (7-8 in total).</p> <p>The town consists of soil landscape unit '94' which forms on elevated, and in parts, uplifted and dissected system of ancient cut and depositional terraces of Gellibrand River. The soils consist of grey sand soils with structured clay underneath; strongly structured sandy loam over moderately structured medium clay; to depths of more than 2m. Limitations include low fertility and restricted drainage.</p> <p>The area adjacent to the river consists of soil landscape unit '61' which forms on the deeply dissected hills of the Otway Ranges and consists of brown gradational soils to 1.2m depth. The soils consist of moderately structured silty loam over clay loam. Limitations include acidity and restricted drainage.</p>
<b>Sensitivity Overlay</b>	<p>Depth to Groundwater Compliance: variable compliancy, but generally compliant, except around the Gellibrand River and the confluence of Carlisle River.</p> <p>Landslip: minimal</p>

Characteristic	Description
	Vegetation: significant Great Otway National Park and Otway Forest Park.
<b>Sensitivity Analysis Rating Town (Locality)</b>	Very High: 0 (0) High: 0 (38) Moderate: 25 (205) Low: 0 (3)

### 5g. Sensitivity Analysis (Maps)

FOR ADOPTION



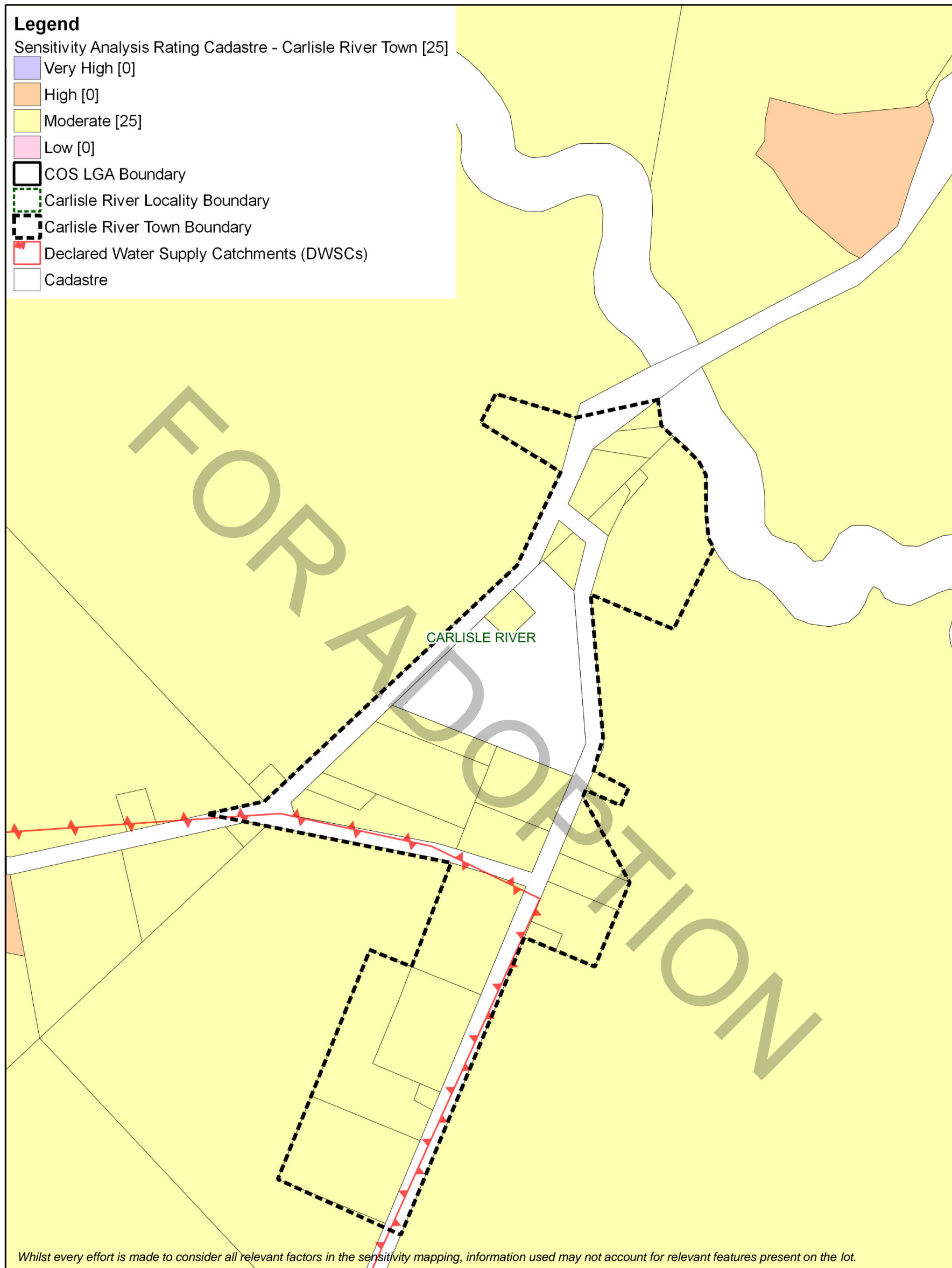
**Figure g1: Sensitivity Analysis - Carlisle River Locality**

Colac Otway Shire DWMP Review

**W** Whitehead & Associates  
Environmental Consultants



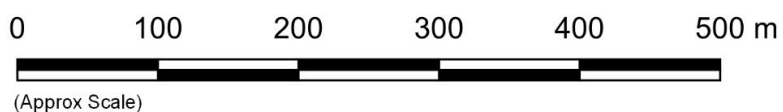
Revision	3
Drawn	JK
Approved	MS



**Figure g2: Sensitivity Analysis - Carlisle River Town**

Colac Otway Shire DWMP Review

**W Whitehead & Associates**  
Environmental Consultants



Revision	4
Drawn	JK
Approved	MS

## 6g. System Selection

Due to the dominance of heavy-textured soils in the Carlisle River locality, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays).

EPA Code of Practice (2013) (Section 2.2.2) identifies secondary treatment standard (or better) followed by subsurface pressure-compensating irrigation as current best-practice in Victoria for substantially reducing the risk associated with unsewered development. Further, the Code describes a “Wick trench/bed” land application option that may be incorporated with secondary treatment for consideration on sites constrained by climate or lot ‘useable area’, particularly within the DWSCs. Any variation from this best-practice approach must be provided with detailed supporting information to demonstrate suitability.

System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 7g. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for Carlisle River was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed ‘Not Applicable’ in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Carlisle River locality are provided below.

## 8g. General Conclusion

The lots within Carlisle River, including the town, have predominantly been assigned a Moderate Sensitivity Rating to sustainable DWM. Predominantly, Standard LCAs will be required, with the use of System Sizing Tables deemed appropriate. The Low Sensitivity Rating lots within a DWSC are required to complete a Standard LCA as per the current EPA Code of Practice’s requirements. Particular attention needs to be directed towards ensuring that appropriate setbacks to surface waterways and groundwater bores are maintained, that the DWM systems are sized based on the limiting soil horizon, and that the degree of slope is taken into consideration when designing the LAA.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Carlisle River									
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	5	5	4	3.5				
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> )†				N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)		
5 + bedroom residence	1,080	509		960	1,726				
4 bedroom residence	900	424		800	1,439				
1-3 bedroom residence	720	339		640	1,151				
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012									
† not including spacing or setbacks									
Conventional Absorption Trenches and Beds - Primary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)
	DLR (mm)	Not supported (Alternative Land Application System Required)							
Development Type	Daily (L/day)								
5 + bedroom residence	1,080								
4 bedroom residence	900								
1-3 bedroom residence	720								
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only
	DLR (mm)	20*	20*	15	10	12	8		
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	65		93	162	125	231	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)
4 bedroom residence	900	54		77	135	104	192		
1-3 bedroom residence	720	44		62	108	83	154		
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012									
LPED Irrigation Systems - Primary or Secondary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	Not supported (Alternative Land Application System Required)							
Development Type	Daily (L/day)								
5 + bedroom residence	1,080								
4 bedroom residence	900								
1-3 bedroom residence	720								
Wick Trenches and Beds - Secondary Treated Effluent Only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)
	DLR (mm)	25	30	20	10	12	8	8	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	50	41	65	162	125	231		N/A (Alternative Land Application System Required)
4 bedroom residence	900	42	34	54	135	104	192		
1-3 bedroom residence	720	34	27	44	108	83	154		



## H. Coragulac Locality Report

### 1h. Introduction

Coragulac is a rural locality located approximately 13km northwest of Colac, in close proximity to the Cororooke and Alvie localities within the Red Rock region. The landform features undulating agricultural land on the Western Volcanic Plains.

Coragulac has a population of approximately 161 residents (ABS Census, 2016). There are approximately 188 and 73 unsewered lots located within the Coragulac locality and town, respectively. There are 13 new lots with DWM systems within the locality from June 2015-2021. There are 43 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Coragulac locality are summarised as follows:

- 1 AWTS (3 subsurface irrigation, 3 drip irrigation, and 1 unknown);
- 1 worm farm (1 unknown);
- 2 sand filter (1 trench and 1 unknown);
- 22 septic tanks (4 trenches and 18 unknown); and
- 11 unknown (2 trenches and 9 unknown).

No field investigations were conducted within the Coragulac locality as part of the 2014 field assessments.

### 2h. Background Documentation

Refer to the following documents for additional detail regarding the locality:

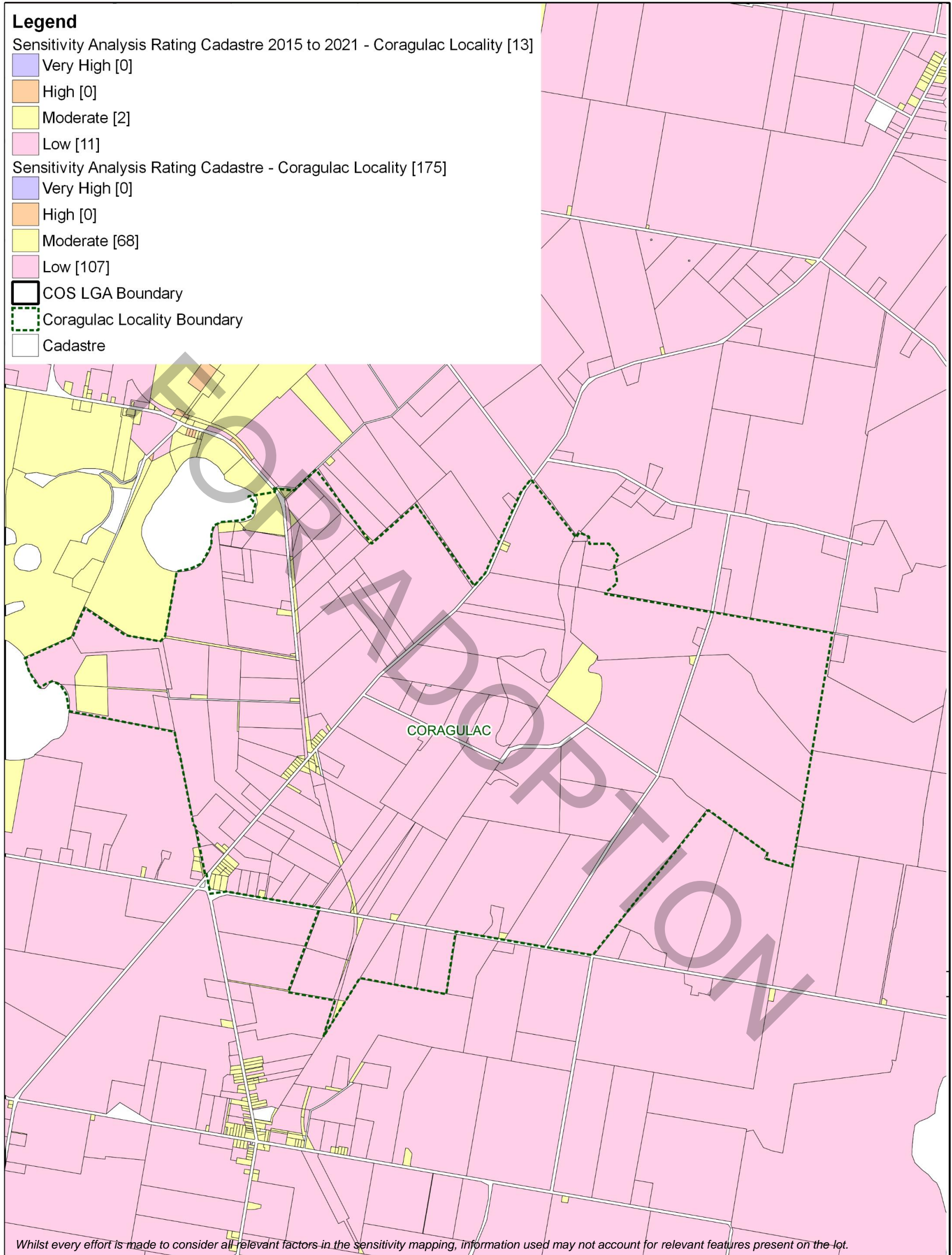
- Red Rock Region Community Infrastructure Plan (September, 2013);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3h. Summary of Constraints to DWM

Characteristic	Description
Climate Zone	Zone 2.
Surface waterways & catchments	Minimal surface waterways, with only Lake Coragulac and Lake Purdiguluc along the north-western locality border. Not located within a DWSC.
Groundwater	Proximity to groundwater bores: distributed throughout the locality, similar to Cororooke.
Land subject to inundation	Minimal; small amount to the west.
Useable lot area	High: 26 (37)

<b>Characteristic</b>	<b>Description</b>
<b>Town (Locality)</b>	Moderate: 16 (30) Low: 31 (119) Compliant: 0 (2)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominantly zoned Farming Zone, with the town zoned Township Zone and Low Density Residential Zone. Compliance is variable throughout the locality, with the rural lots surrounding the town generally non-compliant. Compliant: 57 (55) Non-compliant: 16 (133)
<b>Slope Town (Locality)</b>	High: 0 (1) Moderate: 0 (1) Low: 73 (186)
<b>Geology</b>	Underlain by the Newer Volcanic Group with unnamed phreatomagmatic (tuff ring) deposits in the west (including the town) and unnamed stony rises and hummocky lava flows in the east.
<b>Soil suitability Town (Locality)</b>	High: 0 (0) Moderate: 73 (188) Low: 0 (0) The locality consists of soil landscape units '123' and '114' which form on gently undulating plains and stony rises of the Volcanic Western Plains. Soil type changes significantly with landform, but generally consists of moderately to strongly structured, friable clay loam over strongly structured medium clay to less than 1.5m depth. Limitations include restricted drainage.
<b>Sensitivity Overlay</b>	Depth to Groundwater Compliance: all compliant. Landslip: Nil. Vegetation: locality borders Lake Coragulac to the northwest.
<b>Sensitivity Analysis Rating Town (Locality)</b>	Very High: 0 (0) High: 0 (0) Moderate: 43 (70) Low: 30 (118)

#### 4h. Sensitivity Analysis (Maps)

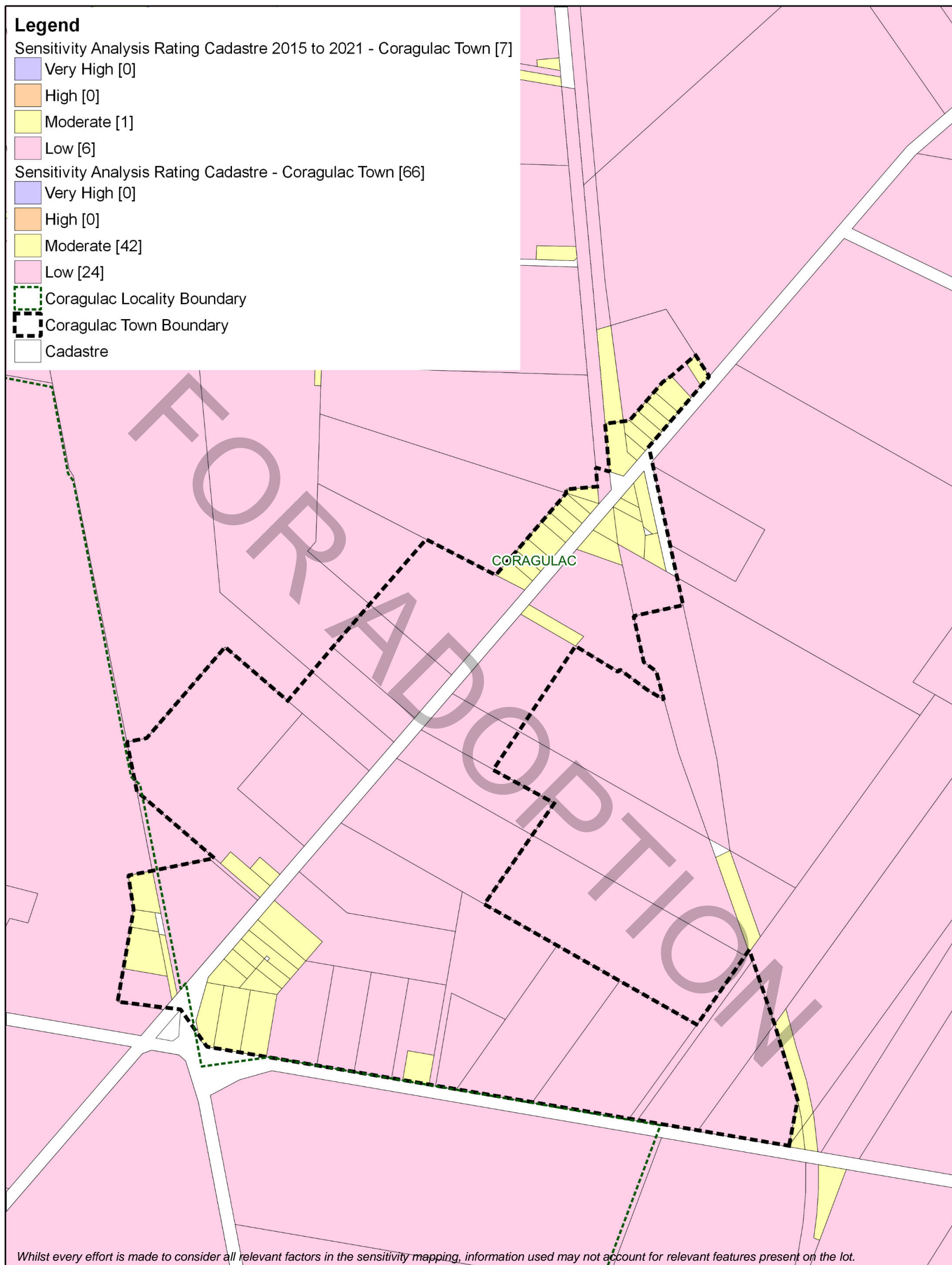


**Figure h1: Sensitivity Analysis - Coragulac Locality**

Colac Otway Shire DWMP Review



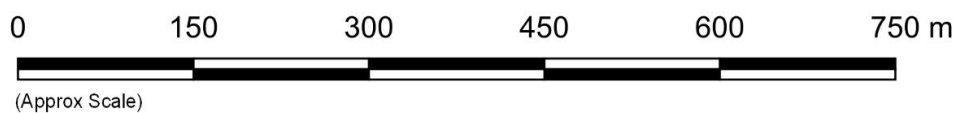
Revision	4
Drawn	JK
Approved	MS



*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

**Figure h2: Sensitivity Analysis - Coragulac Town**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS

## 5h. System Selection

Due to the dominance of heavy-textured soils in the Coragulac locality, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays). The System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 6h. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. The water balances used monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for a single geographic point between Coragulac and Cororooke, due to their proximity. The climate data was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as 'Not Applicable' for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as 'Not Applicable' for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed 'Not Applicable' in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Coragulac locality are provided below.

## 7h. General Conclusion

The lots within Coragulac have been assigned a Moderate or Low Sensitivity Rating to sustainable DWM. Both Standard and Council LCAs will be required, with the use of System Sizing Tables deemed appropriate. The constraints within Coragulac are quite low in comparison to other localities, with particular attention directed towards ensuring that the quality of the groundwater resources is maintained and the correct decommissioning of groundwater bores occurs where necessary.

Coragulac									
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	5	5	4	3.5	3	2		
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	287		390	476	610	1,397		
4 bedroom residence	900	239		325	396	508	1,164		
1-3 bedroom residence	720	191		260	317	407	932		
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012									
Conventional Absorption Trenches and Beds - Primary or Secondary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Massive Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)
	DLR (mm)	<b>Not supported (Alternative Land Application System Required)</b>							
Development Type	Daily (L/day)								
5 + bedroom residence	1,080								
4 bedroom residence	900								
1-3 bedroom residence	720								
Evapotranspiration-Absorption Trenches and Beds - Primary or Secondary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only
	DLR (mm)	20*	20*	15	10	12	8	5	5
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	59		80	127	103	165	305	
4 bedroom residence	900	49		67	106	86	138	254	
1-3 bedroom residence	720	39		54	85	69	110	203	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012									
LPED Irrigation Systems - Primary or Secondary Treated Effluent									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)		
	DIR (mm)	<b>N/A (Alternative Land Application System Required)</b>	4	3.5	3	2.5	<b>N/A (Alternative Land Application System Required)</b>		
Development Type	Daily (L/day)		Total min. basal or 'wetted' area for zero wet weather storage (m <sup>2</sup> )†						
5 + bedroom residence	1,080		424	527	697	1,029			
4 bedroom residence	900		353	440	581	858			
1-3 bedroom residence	720	283	352	465	686				
† not including spacing & setbacks									
Wick Trenches and Beds - Secondary Treated Effluent Only									
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)
	DLR (mm)	25	30	20	10	12	8	8	5
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	46	38	59	127	103	165	305	
4 bedroom residence	900	39	32	49	106	86	138	254	
1-3 bedroom residence	720	31	26	39	85	69	110	203	

## I. Cororooke Locality Report

### 1i. Introduction

Cororooke is a rural locality located approximately 7km northwest of Colac in close proximity to the Coragulac and Alvie localities within the Red Rock region. The landform features undulating agricultural land on the Western Volcanic Plains.

The locality has a population of approximately 310 residents (ABS Census, 2016). There are approximately 285 and 123 unsewered lots located within the Cororooke locality and town, respectively. There are 31 new lots with DWM systems within the locality from June 2015-2021. There are 78 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Cororooke locality are summarised as follows:

- 19 AWTs (5 drip irrigation, 1 irrigation, 1 trench and 12 unknown);
- 1 sand filter (1 drip irrigation);
- 44 septic tanks (3 trenches, 1 irrigation, 1 subsurface irrigation and 39 unknown); and
- 14 unknown (2 trenches and 12 unknown).

No field investigations were conducted in the Cororooke locality as part of the 2014 field assessments.

### 2i. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Red Rock Region Community Infrastructure Plan (September, 2013);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3i. Summary of Constraints to DWM

Characteristic	Description
Climate Zone	Zone 2.
Surface waterways & catchments	Located outside of a DWSC. Minimal drainage features, with Lake Colac to the east.
Groundwater	Proximity to groundwater bores: distributed throughout the locality, similar to Coragulac.
Land subject to inundation	Nil but extensive to the east (associated with Lake Colac).
Useable lot area	High: 82 (102)
Town (Locality)	Moderate: 28 (44)

Characteristic	Description
	<p>Low: 13 (134)</p> <p>Compliant: 0 (5)</p>
<p><b>Minimum lot size compliance with Planning Scheme Zoning</b></p>	<p>The locality is predominantly zoned Farming Zone. The town is zoned Township Zone and Rural Living Zone.</p> <p>Compliance is variable throughout the locality, with the majority of the rural lots non-compliant.</p> <p>Compliant: 79 (87)</p> <p>Non-compliant: 44 (198)</p>
<p><b>Slope Town (Locality)</b></p>	<p>High: 0 (0)</p> <p>Moderate: 0 (0)</p> <p>Low: 123 (285)</p>
<p><b>Geology</b></p>	<p>Variable.</p> <p>The town is predominately underlain by unnamed stony rises and hummocky lava flows of the Newer Volcanic Group Transversing east-west.</p> <p>North of the town – unnamed phreatomagmatic deposits (tuff rings) of Newer Volcanic Group</p> <p>South of the town – Quaternary unnamed swamp, lake and estuarine deposits.</p> <p>Southern region – Hanson Plain sand of the Brighton Group which is comprised of fluvial and minor shallow marine deposits</p> <p>Along southern boundary – unnamed sheet flow basalt of the Newer Volcanic Group.</p>
<p><b>Soil suitability Town (Locality)</b></p>	<p>High: 0 (1)</p> <p>Moderate: 123 (284)</p> <p>Low: 0 (0)</p> <p>Variable throughout locality (6 in total).</p> <p>The dominant soil landscape unit, which also includes the town, is '114' which forms on gently undulating plains and stony rises of the Volcanic Western Plains. Soil type changes significantly with landform, but generally consists of moderately to strongly structured, friable clay loam over strongly structured medium clay to less than 1.5m depth. Limitations include restricted drainage.</p>
<p><b>Sensitivity Overlay</b></p>	<p>Depth to Groundwater Compliance: all compliant, including town, except for the eastern lots around Lake Colac.</p>

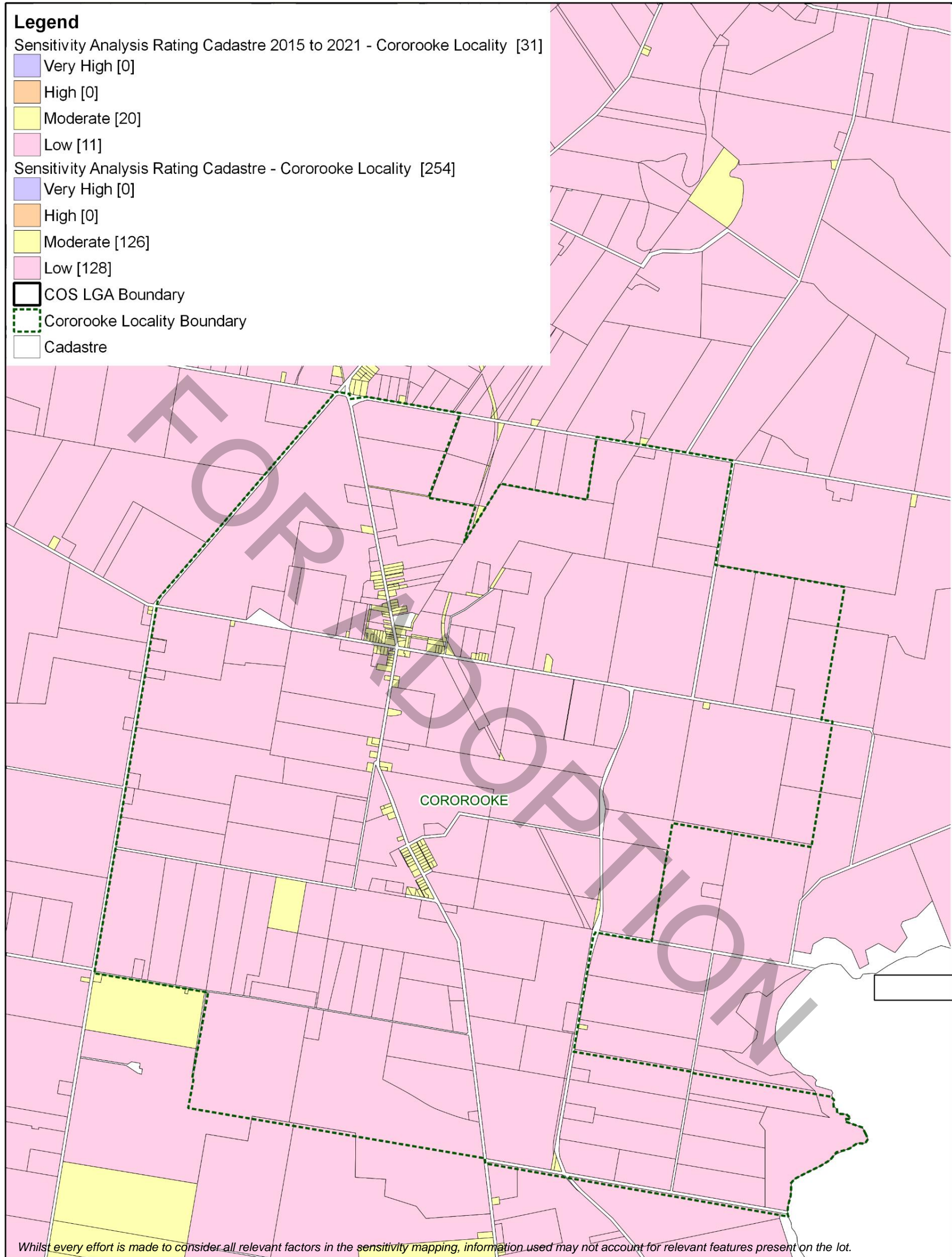


Characteristic	Description
	Landslip: Nil Vegetation: Lake Colac to southeast.
<b>Final Sensitivity Rating Town (Locality)</b>	Very High: 0 (0) High: 0 (0) Moderate: 110 (146) Low: 13 (139)

#### 4i. Sensitivity Analysis (Maps)

FOR ADOPTION

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

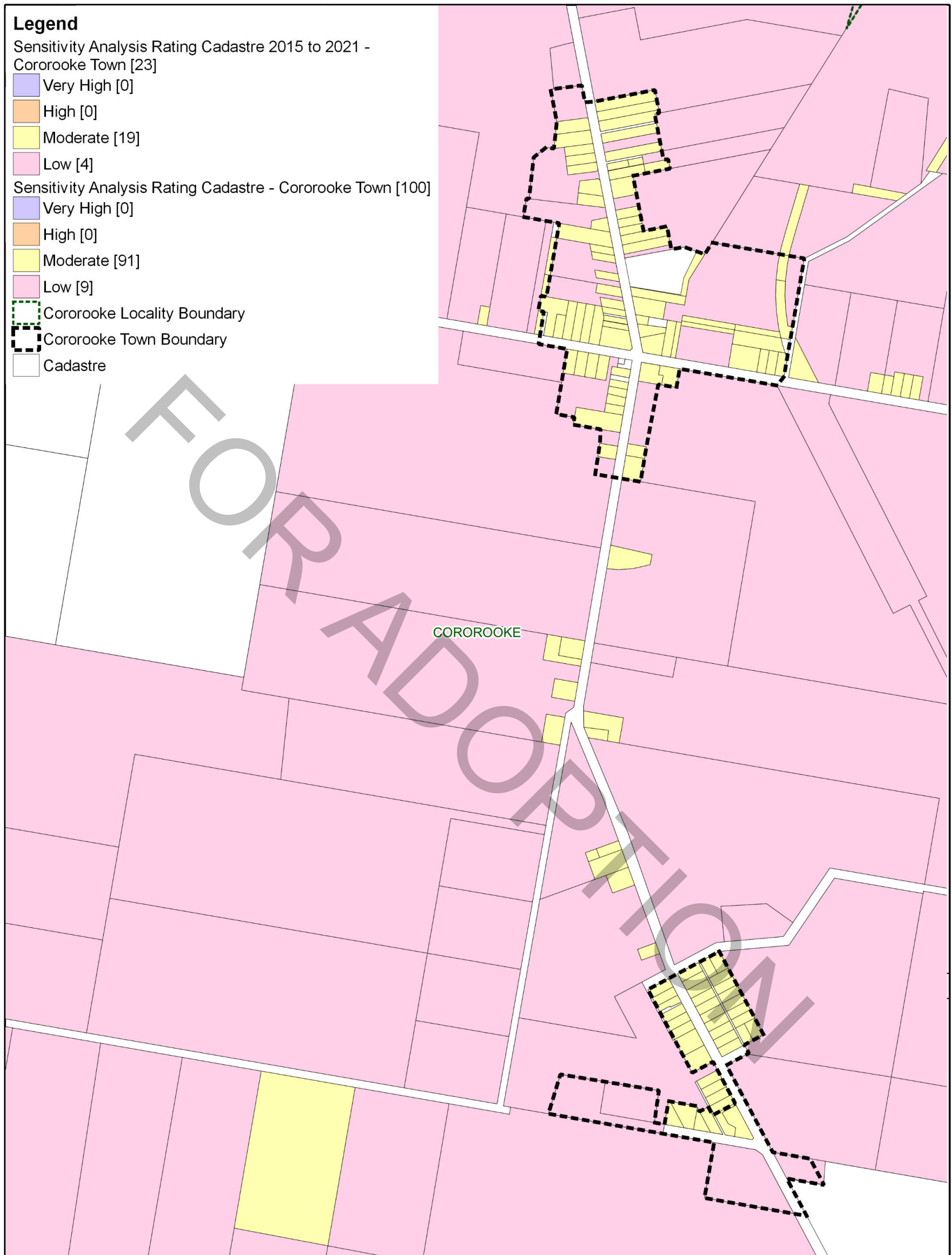


**Figure i1: Sensitivity Analysis - Cororooke Locality**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS



**Figure i2: Sensitivity Analysis - Cororooke Town**

Colac Otway Shire DWMP Review

	<p>(Approx Scale)</p>			
			Revision	4
			Drawn	JK
		Approved	MS	

## 5i. System Selection

Based on soil types and indicative depths, the Cororooke locality has the potential to sustainably accommodate a broad range of system types, depending on the influences of climate. The System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 6i. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. The water balances used monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for a single geographic point between Cororooke and Coragulac, due to their proximity. The climate data was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as 'Not Applicable' for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as 'Not Applicable' for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed 'Not Applicable' in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Cororooke locality are provided below.

## 7i. General Conclusion

The lots within Cororooke have been assigned a Moderate or Low Sensitivity Rating to sustainable DWM. Both Standard and Council LCAs will be required, with the use of System Sizing Tables deemed appropriate. The constraints within Cororooke are quite low in comparison to other localities. Particular attention should be directed towards ensuring that the quality of the groundwater resources is maintained and the correct decommissioning of groundwater bores occurs where necessary.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Cororooke									
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only									
Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	5	5	4	3.5	3	2		
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	287	390	476	610	1,397			
4 bedroom residence	900	239	325	396	508	1,164			
1-3 bedroom residence	720	191	260	317	407	932			
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012									
Conventional Absorption Trenches and Beds - Primary or Secondary Treated Effluent									
Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Massive Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)	N/A (Alternative Land Application System Required)
	DLR (mm)	20*	20*	15	10	6	4	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	59	80	127	238	424	305		
4 bedroom residence	900	49	67	106	198	353	254		
1-3 bedroom residence	720	39	54	85	159	283	203		
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012									
Evapotranspiration-Absorption Trenches and Beds - Primary or Secondary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)									
Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	5
	DLR (mm)	20*	20*	15	10	12	8	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	59	80	127	103	165	305		
4 bedroom residence	900	49	67	106	86	138	254		
1-3 bedroom residence	720	39	54	85	69	110	203		
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012									
LPED Irrigation Systems - Primary or Secondary Treated Effluent									
Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	4	3.5	3	2.5				
Development Type	Daily (L/day)	Total min. basal or 'wetted' area for zero wet weather storage (m <sup>2</sup> )†				N/A (Alternative Land Application System Required)			
5 + bedroom residence	1,080	424	527	697	1,029				
4 bedroom residence	900	353	440	581	858				
1-3 bedroom residence	720	283	352	465	686				
† not including spacing & setbacks									
Wick Trenches and Beds - Secondary Treated Effluent Only									
Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	5
	DLR (mm)	25	30	20	10	12	8	8	
Development Type	Daily (L/day)	Total min. basal or 'wetted' area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing & setbacks							
5 + bedroom residence	1,080	46	38	59	127	103	165	305	
4 bedroom residence	900	39	32	49	106	86	138	254	
1-3 bedroom residence	720	31	26	39	85	69	110	203	

## J. Forrest Locality Report

### 1j. Introduction

Forrest is located approximately 22km southeast of Colac in the northern hinterlands of the Otway Ranges. The town is located along a ridgeline that separates two well defined catchments. The majority of the locality is located outside DWSCs; however, small portions (10%) along the north-western and south-eastern boundaries fall within the Gellibrand River and Upper Barwon DWSCs, respectively.

The locality has a population of approximately 230 residents (ABS Census, 2016). There are approximately 349 and 167 unsewered lots within the Forrest locality and town, respectively. There are 5 new lots with DWM systems within the locality from June 2015-2021. There are 159 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DW permits and their associated treatment system and LAA method within Forrest are summarised as follows:

- 32 AWTS (9 drip irrigation, 2 trenches, 7 subsurface irrigation and 14 unknown);
- 39 sand filters (1 trench, 37 subsurface irrigation and 1 unknown);
- 45 septic tanks (10 trenches, 1 irrigation and 34 unknown);
- 4 worm farms (2 trenches, and 2 unknown); and
- 29 unknown (10 trenches, 1 subsurface irrigation and 18 unknown).

No field investigations were conducted within the Forrest locality as part of the 2014 field assessments.

There have been 21 notified wastewater complaints to Council within the township of Forrest regarding DWM systems and associated land applications that have been registered in Council's Health Manager database from 2015- 2021. The reticulation/sewering of Forrest would be beneficial as wastewater management complaints are received in this township. There are a number of site constraints that are present within these township properties. Protecting the environment and public health through the sewerage of Forrest would be supported.

### 2j. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Forrest Structure Plan (2011);
- Birregurra and Forrest Township Community Infrastructure Plans (2012);
- Colac Otway Domestic Wastewater Management Plan (2007);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3j. Summary of Constraints to DWM

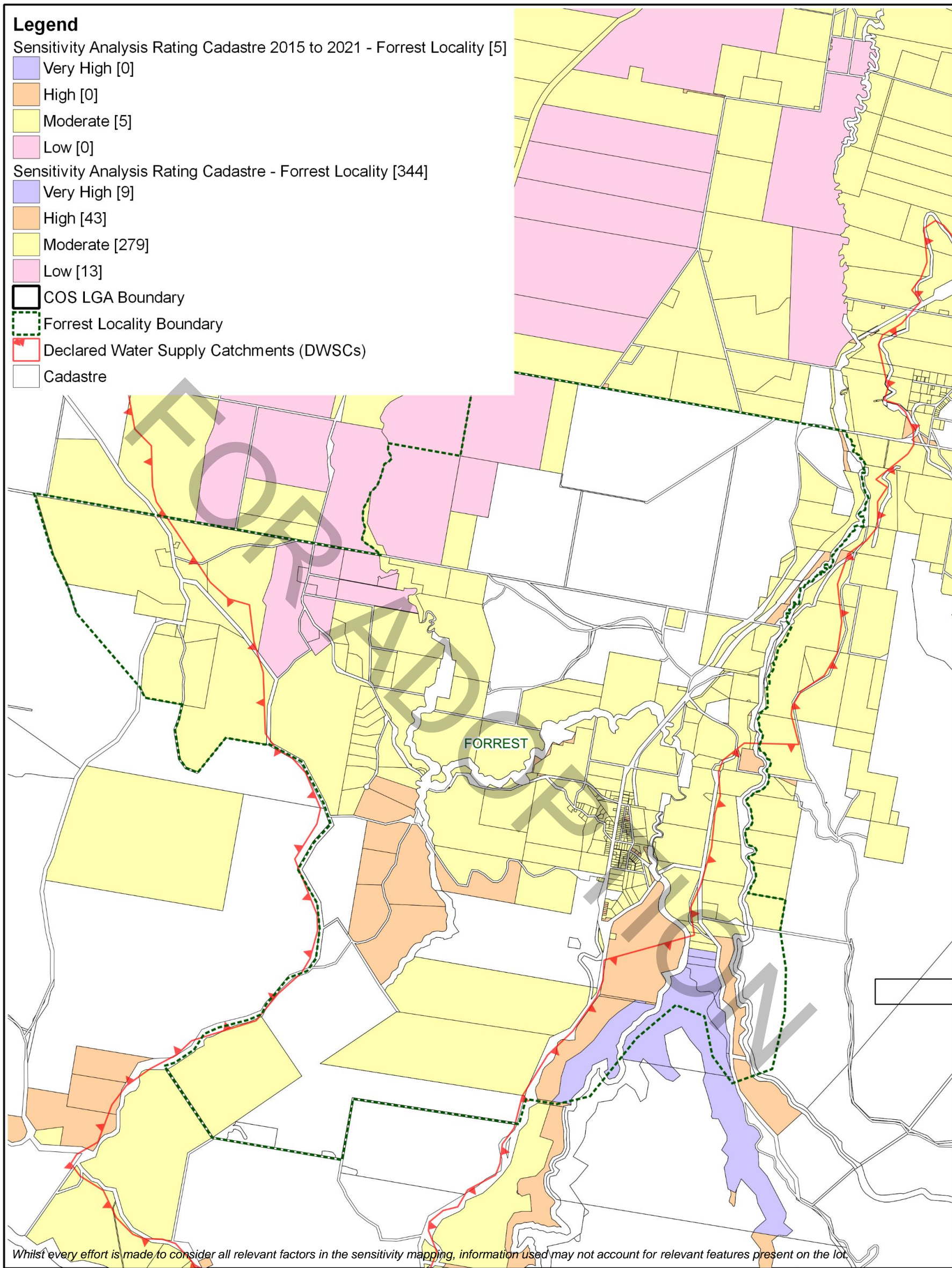
Characteristic	Description
Climate Zone	Zones 2 and 3.

Characteristic	Description
<b>Surface waterways &amp; catchments</b>	A small region of the locality is located with DWSCs, being the Upper Barwon and Gellibrand River, but the town is located outside a DWSC. West Barwon Reservoir is located approximately 8km to the south of the town inside Barwon DWSC. Barwon River West Branch traverses north and east of the town. Other waterways within the locality include: Road Knight Creek, Porcupine Creek, and Barwon River East Branch.  Limited surface water concerns are located along the ridgeline.
<b>Groundwater</b>	Proximity to groundwater bores: distributed throughout the northern region and along the river, but density is less than other localities.
<b>Land subject to inundation</b>	Transverses locality north-south along Barwon River West Branch which runs along the eastern perimeter of the town.
<b>Useable lot area Town (Locality)</b>	High: 8 (125) Moderate: 5 (62) Low: 24 (156) Compliant: 0 (6)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is zoned a variety of different uses, predominantly being zoned Farming Zone, Public Conservation and Resource Zone, and Public Use Zone around the reservoir. The town is zoned as Township Zone, Rural Living Zone and Rural Activity Zone.  Compliance is variable throughout the locality, with the majority of the lots within the town compliant and surrounding lots non-compliant.  Compliant: 148 (170) Non-compliant: 19 (179)
<b>Slope Town (Locality)</b>	High: 6 (84) Moderate: 22 (63) Low: 139 (202)
<b>Geology</b>	Town – Dilwyn Formation of Wangeripp Group (shallow marine, coastal barrier and back beach lagoonal deposit);  North: Gellibrand Marl of Hytesbury Group (continental shelf deposit);  South – Eumeralla Formation of the Otway Group (fluvial and braided stream deposits) with alluvial flood plain deposits along the creek.
<b>Soil suitability Town (Locality)</b>	High: 0 (28) Moderate: 167 (321) Low: 0 (0)

Characteristic	Description
	<p>The town consists of soil landscape unit '73' which form on the steep rolling hills on the northern periphery of the Otway Range and consists of texture contrast soils with ironstone to 2m depth. The soils consist of weakly structured sandy loam over strongly structured medium to heavy clay. Limitations include low fertility, low p-sorb, sodic, dispersive, restricted drainage and coarse fragments.</p> <p>The regions adjacent to the river to the north and west of the town consist of soil landscape unit '95' which forms on the alluvial floodplain of the Barwon River and its tributaries with numerous cut-off meanders. The soil consists of a moderately structured fine sandy clay loam over medium clay to more than 2m depth. Limitations include restricted drainage and dispersive.</p> <p>South and east facing slopes are linear and consist of in situ weathered rock with brown gradational soils covered by loam. North and west facing slopes consist of in situ weathered rock with brown duplex soils covered by loam.</p>
<b>Sensitivity Overlay</b>	<p>Depth to Groundwater Compliance: predominantly compliant, except in the northeast of the locality along Barwon River East Branch.</p> <p>Landslip: extensive around locality and surrounding locality</p> <p>Vegetation: Otway Forest Park surrounds the town, with a small region of Great Otway National Park.</p>
<b>Sensitivity Analysis Rating Town (Locality)</b>	<p>Very High: 0 (9)</p> <p>High: 14 (43)</p> <p>Moderate: 153 (284)</p> <p>Low: 0 (13)</p>

#### 4j. Sensitivity Analysis (Maps)



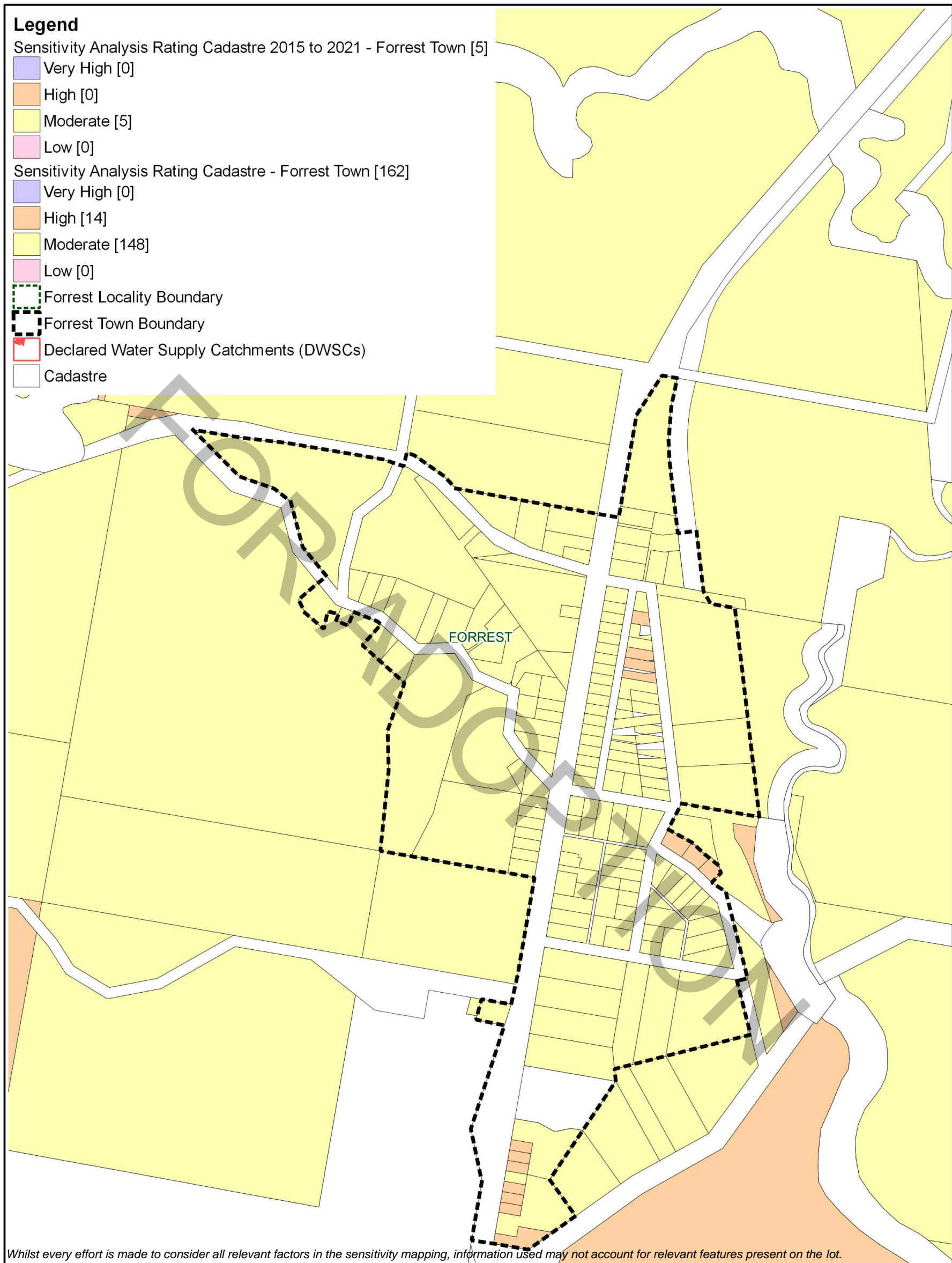


**Figure j1: Sensitivity Analysis - Forrest Locality**

Colac Otway Shire DWMP Review

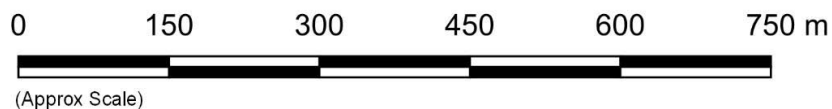


Revision	4
Drawn	JK
Approved	MS



**Figure j2: Sensitivity Analysis - Forrest Town**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS

## 5j. System Selection

Due to the dominance of heavy-textured soils in the Forrest area, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays). The System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 6j. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. The water balances used monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for Gellibrand, as it was compared with that of Forrest and found to be very similar, with very little size differences in water balance results. The climate data for Gellibrand was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as 'Not Applicable' for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as 'Not Applicable' for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed 'Not Applicable' in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Forrest locality are provided below.

## 7j. General Conclusion

The lots within Forrest have been assigned all classes of Sensitivity Rating to sustainable DWM, with the majority of the lots assigned a Moderate Sensitivity Rating. Predominantly, Standard LCAs will be required, with the use of System Sizing Tables deemed appropriate. The Low Sensitivity Rating lots that fall within a DWSC are required to complete a Standard LCA as per the current EPA Code of Practice's requirements. Particular attention needs to be directed towards ensuring that the degree of slope is taken into consideration when designing the LAA. The locality is also extensively considered to be prone to landslip; a geotechnical report by a suitably qualified person will need to be conducted to address this constraint.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Forrest										
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	5	5	4	3.5	3	2			
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> ) not including spacing or setbacks								
5 + bedroom residence	1,080	380		586	804	1,269	1,881			
4 bedroom residence	900	317		489	670	1,068	1,568			
1-3 bedroom residence	720	254		391	536	854	1,254			
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012										
Conventional Absorption Trenches and Beds - Primary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	
	DLR (mm)	Not supported (Alternative Land Application System Required)								
Development Type	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	
	DLR (mm)	20*	20*	15	10	12	8	5	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	62		87	144	114	197		431	
4 bedroom residence	900	52		72	120	95	164		360	
1-3 bedroom residence	720	42		58	96	76	131		288	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012										
LPED Irrigation Systems - Primary or Secondary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	N/A (Alternative Land Application System Required)	4	3.5	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)			
Development Type	Daily (L/day)		Total min. basal or 'wetted area' <sup>†</sup>							
5 + bedroom residence	1,080		717	1,073						
4 bedroom residence	900		598	895						
1-3 bedroom residence	720	478	716							
<sup>†</sup> required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks										
Wick Trenches and Beds - Secondary Treated Effluent Only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	
	DLR (mm)	25	30	20	10	12	8	8	N/A (Alternative Land Application System Required)	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	48	40	62	145	114	197			
4 bedroom residence	900	40	33	52	121	95	164			
1-3 bedroom residence	720	32	27	42	97	76	132			

## K. Gellibrand Locality Report

### 1k. Introduction

Gellibrand is located approximately 21km south of Colac. It is located on elevated and dissected terraces or deeply dissected hills, abutting the Gellibrand River. Gellibrand is located on relatively flat land gently slopes in a northerly direction to the convergence of Charleys Creek and Lardner Creek. Notably, the entire locality is located within the Gellibrand River DWSC.

The locality has an estimated permanent population of approximately 210 residents (ABS Census, 2016). There are approximately 265 and 69 unsewered lots located within the Gellibrand locality and town, respectively. There are 5 new lots with DWM systems within the locality from June 2015-2021. There are 110 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Gellibrand locality are summarised as follows:

- 12 AWTS (5 drip irrigation, 1 trenches, 1 irrigation and 4 unknown);
- 1 constructed reed beds wetland (1 trench);
- 35 sand filters (1 drip irrigation and 34 subsurface irrigation);
- 36 septic tanks (12 trenches, 1 subsurface irrigation and 23 unknown); and
- 26 unknown (10 trenches and 16 unknown).

### 2k. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Gellibrand River Township Master Plan Report (October, 2005); and
- Colac Otway Domestic Wastewater Management Plan (2007);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3k. Site Assessment Results

The following table summarises the results from the representative audits conducted by Consultant staff in September 2014.

Characteristic	Description
Land use	Comprises of a range of land uses, including dairy, forestry, rural living and tourism.
Occupancy rates	2.3 (Gellibrand State Suburb, ABS Census, 2011).
Typical soils	Duplex profile. Very dark grey brown sandy clay loam surface soil overlying abruptly at 35cm a strongly mottled yellow brown, grey, strong brown silty clay, overlying a stratum of white and yellow coarse gravelly sand with rounded quartz pebbles between 140-170cm, overlying strongly mottled clay to at least 200cm. Drainage and permeability are variable depending on slope and position.

Characteristic	Description
<b>AS/NZS 1547:2012 soil categories</b>	5 (Light Clays)
<b>Existing Systems</b>	<p><b>Separate Blackwater and Greywater</b></p> <p>Of the seven systems inspected during field investigations, three systems (43%) comprised separate blackwater treatment in a septic tank, with direct greywater diversion to either an adjacent paddock or street drain. Where discharged to paddocks or neighbouring vacant lots, greywater was typically ponded near the diversion outlet pipe, and often in areas trampled by livestock (cattle and sheep).</p> <p>The blackwater septic tanks were typically 40+ years old and less than half had been pumped out within the last ten years. Septic effluent discharged to one or more conventional absorption trenches, some of which could not be identified without the owner present. The majority of trenches were located on land of less than 8% slope and appeared to be parallel with contours (i.e. running across slope, not down it). There was evidence of blackwater effluent surcharging to the surface on one property (of three with separate blackwater and greywater systems). Soils were typically soft or boggy, mainly due to recent high rainfall.</p> <p><b>Combined Blackwater and Greywater</b></p> <p>Four of the seven systems (57%) inspected had combined wastewater treatment systems or were assumed to have combined systems, based on layout of pipework. It is likely that the proportion of combined systems in Gellibrand is likely to be less than this; however, this should be confirmed by ongoing inspections by Council.</p> <p>Septic effluent discharged to one or more conventional absorption trenches. At least one of the four properties had undersized trenches for the number of bedrooms; and on one property the LAA could not be identified and there was inadequate suitable space for an appropriately sized LAA.</p>

#### 4k. Summary of Constraints to DWM

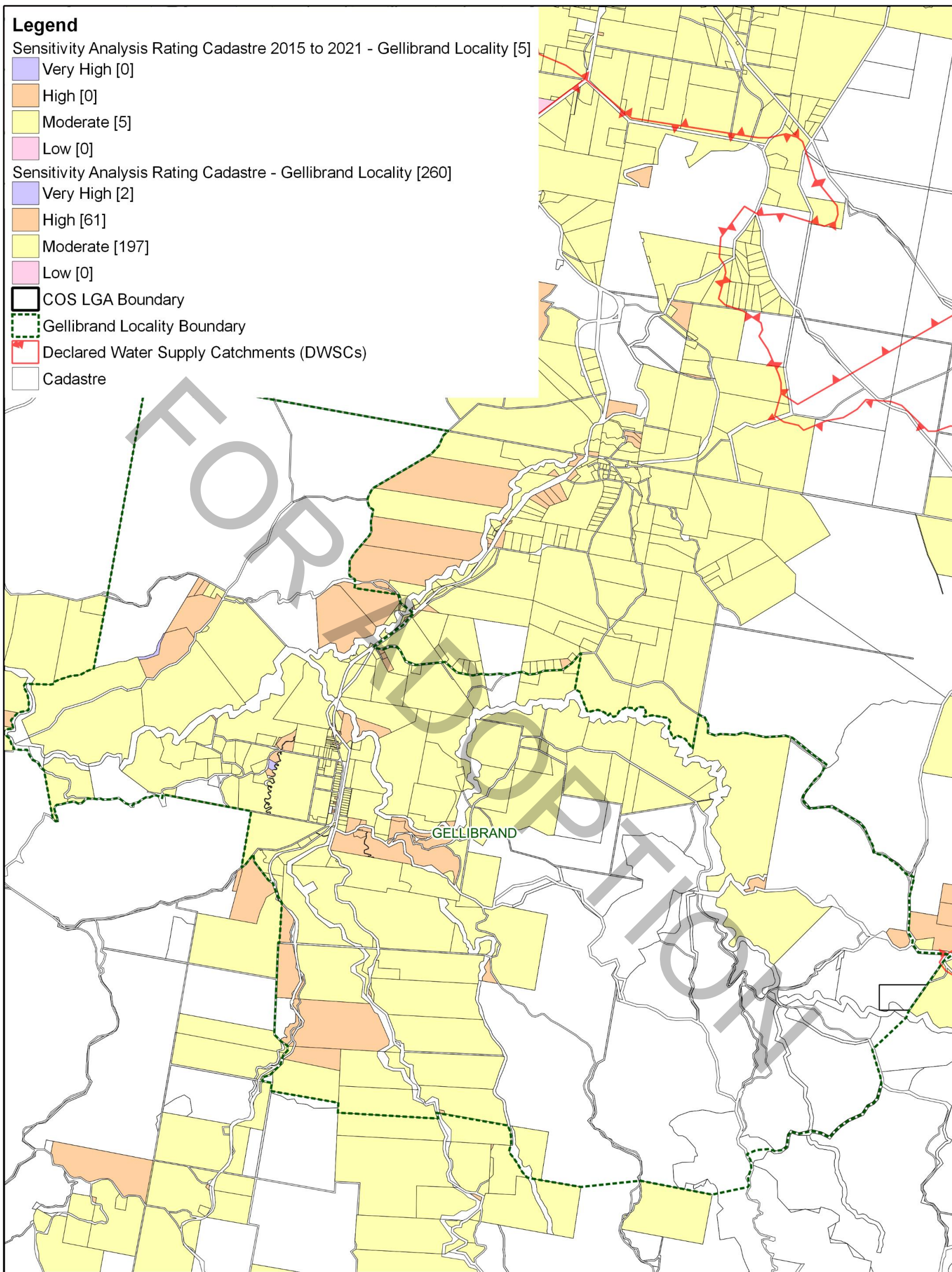
Characteristic	Description
<b>Climate Zone</b>	Zone 3.
<b>Surface waterways &amp; catchments</b>	The locality is located entirely within the Gellibrand River DWSC. There is an extensive drainage network surrounding the town; including Gellibrand River transversing southeast to northwest, Love Creek, Charleys Creek, Lardner Creek and Asplin Creek.
<b>Groundwater</b>	Proximity to groundwater bores: significantly dense distribution throughout the town and along the river, similar to Kawarren.

<b>Characteristic</b>	<b>Description</b>
	Groundwater depth: 1.5 – 2m below surface.
<b>Land subject to inundation</b>	Extensive along Gellibrand River, Charleys Creek, Lardner Creek and Love Creek; envelopes the town.
<b>Useable lot area Town (Locality)</b>	High: 19 (58) Moderate: 32 (46) Low: 18 (148) Compliant: 0 (13)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominantly zoned Farming Zone and Public Conservation and Resource Zone. The town is zoned Township Zone, Public Park and Recreation Zone and Public Use Zone. Compliance is variable throughout the locality, with the majority of the lots within the town compliant. Compliant: 62 (93) Non-compliant: 7 (172)
<b>Slope Town (Locality)</b>	High: 0 (84) Moderate: 0 (24) Low: 69 (157)
<b>Geology</b>	Various underlying geology. Majority of town is a river terrace with clay and sand which is moderately sorted and poorly consolidated. Northern tip is alluvial floodplain with silt, sand, and gravel deposits which are also moderately sorted and poorly consolidated. South – Eumeralla Formation of the Otway Group. Dilwyn Formation of Wangeripp Group is directly south of town. Older Volcanic Group (volcanic plugs, sills, dykes, pillow and pyroclastic deposits) to the east and north of town. Wiridjil Gravel Member of Pebble Point Formation to west of town towards Carlisle River. South eastern edge is a shallow marine deposit with sand, clay and silt.
<b>Soil suitability Town (Locality)</b>	High: 63 (124) Moderate: 6 (141) Low: 0 (0)

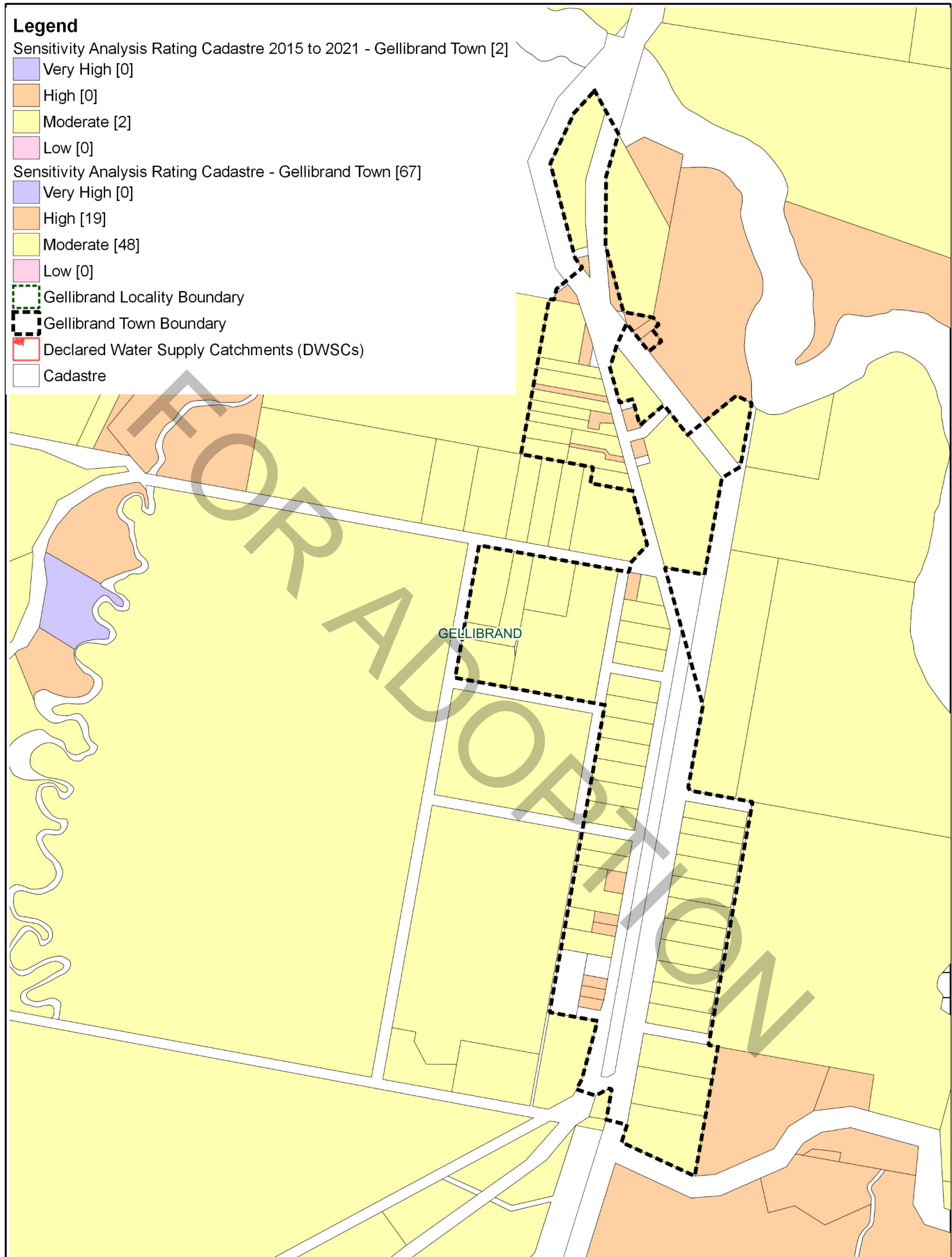
Characteristic	Description
	<p>The majority of the town is classified as having a high soil suitability constraint.</p> <p>The dominant soil landscape unit of the town consists of '67' which forms on deeply dissected hills abutting the Gellibrand River to the west of Love Creek. The soils consist of brown gradational soils, strongly structured sandy clay loam over weakly structured light clay, to 0.9m depth. Limitations include acidity.</p> <p>The western and southern regions of the town consist of soil landscape unit '94' which forms on elevated, and in parts, uplifted and dissected system of ancient cut and depositional terraces of Gellibrand River. The soils consist of grey sand soils with structured clay underneath; strongly structured sandy loam over moderately structured medium clay; to depths of more than 2m. Limitations include low fertility and restricted drainage.</p> <p>The northern region of the locality consists of soil landscape unit '90' which forms on the rolling hills in the northern upper reaches of the Gellibrand catchment and consists of mottled gradational soil to more than 2m depth. The soil consists of apedal fine sandy loam over weakly structured silty clay loam. Limitations include low p-sorb, low fertility and restricted drainage.</p> <p>The southern half of the locality consists of soil landscape unit '61' which forms on the deeply dissected hills of the Otway Ranges and consist of brown gradational soils to 1.2m depth. The soils consist of moderately structured silty loam over clay loam. Limitations include acidity and restricted drainage.</p> <p>Predominant soil is yellow sandy gravel fill over brown clayey sandy silt overlying dark brown silty fine sand.</p> <p>Soil capacity for good drainage but waterlogged during wetter months.</p>
<b>Sensitivity Overlay</b>	<p>Depth to Groundwater Compliance: variable throughout locality. Non-compliant particularly to the southeast of the locality around Gellibrand River and Lardner Creek.</p> <p>Landslip: excessive, particularly to northwest of town.</p> <p>Vegetation: Otway Forest Park in southeast corner.</p>
<b>Sensitivity Analysis Rating Town (Locality)</b>	<p>Very High: 0 (2)</p> <p>High: 19 (61)</p> <p>Moderate: 50 (202)</p> <p>Low: 0 (0)</p>

### 5k. Sensitivity Analysis (Maps)



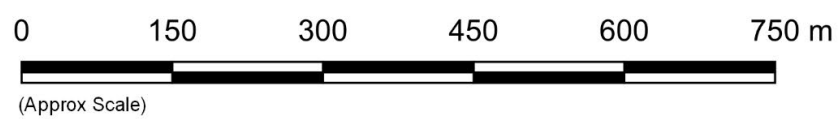


<b>Figure k1: Sensitivity Analysis - Gellibrand Locality</b>		N 	
Colac Otway Shire DWMP Review		Revision	4
<b>Whitehead &amp; Associates</b> Environmental Consultants	0      1.5      3      4.5      6      7.5 km  (Approx Scale)	Drawn	JK
		Approved	MS



**Figure k2: Sensitivity Analysis - Gellibrand Town**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS

## 6k. System Selection

Due to the dominance of heavy-textured soils in the Gellibrand locality, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays).

EPA Code of Practice (2013) (Section 2.2.2) identifies secondary treatment standard (or better) followed by subsurface pressure-compensating irrigation as current best-practice in Victoria for substantially reducing the risk associated with unsewered development. Further, the Code describes a “Wick trench/bed” land application option that may be incorporated with secondary treatment for consideration on sites constrained by climate or lot ‘useable area’, particularly within the DWSCs. Any variation from this best-practice approach must be provided with detailed supporting information to demonstrate suitability. The System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 7k. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for Gellibrand was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed ‘Not Applicable’ in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Gellibrand locality are provided below.

## 8k. General Conclusion

The Rural Living Strategy (2011) identified Gellibrand as having ‘deferred’ growth potential, dependent on water catchment constraints and bushfire hazard being satisfactorily addressed. The Sensitivity Analysis concludes that development is feasible given its predominantly Moderate Sensitivity to DWM, particular within the town. Particular attention needs to be directed towards ensuring that appropriate setbacks to surface waterways, groundwater bores and flood prone areas are maintained, that the DWM systems are sized based on the limiting soil horizon and that the depth to groundwater during site-specific LCAs is ascertained. It is imperative that there is sufficient useable area to sustainably manage wastewater on-site. Some areas within the locality are considered to be extensively prone to landslip; a geotechnical report by a suitably qualified person will need to be conducted to address this constraint. Predominantly, Standard and Detailed LCAs will be required, with the use of System Sizing Tables deemed appropriate for the lots assigned a Moderate Sensitivity Rating. The Low Sensitivity Rating lots within a DWSC are required to complete a Standard LCA as per the current EPA Code of Practice’s requirements.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Gellibrand & Kwarren										
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	5	5	4	3.5	3	2			
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> )†								
5 + bedroom residence	1,080	379		584	800	1,269	2,329			
4 bedroom residence	900	316		487	667	1,058	1,941			
1-3 bedroom residence	720	253		389	533	846	1,553			
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012										
† not including spacing or setbacks										
Conventional Absorption Trenches and Beds - Primary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	
	DLR (mm)	Not supported (Alternative Land Application System Required)								
Development Type	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	
	DLR (mm)	20*	20*	15	10	12	8	5	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	62		87	145	114	197		433	
4 bedroom residence	900	52		73	121	95	164		361	
1-3 bedroom residence	720	42		58	97	76	132		289	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012										
LPED Irrigation Systems - Primary or Secondary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	N/A (Alternative Land Application System Required)	4	3.5	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)			
Development Type	Daily (L/day)		Total min. basal or 'wetted area'†							
5 + bedroom residence	1,080		723	1,086						
4 bedroom residence	900		603	905						
1-3 bedroom residence	720	482	724							
† required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks										
Wick Trenches and Beds - Secondary Treated Effluent Only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	
	DLR (mm)	25	30	20	10	12	8	8	N/A (Alternative Land Application System Required)	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	49	40	62	145	114	197			
4 bedroom residence	900	41	33	52	121	95	164			
1-3 bedroom residence	720	33	27	42	97	76	132			

## L. Kawarren Locality Report

### 1I. Introduction

Kawarren is located approximately 16km south of Colac. It is located on rolling hills or dissected hills abutting rivers and streams or large flood plains with undulating agricultural land. Notably, approximately 90% of the locality is located within a DWSC; predominantly Gellibrand River DWSC and a small portion in the northeast corner located within Barwon Downs Wellfield Intake DWSC.

The locality has an estimated permanent population of approximately 166 residents (ABS Census, 2016). There are approximately 215 and 72 unsewered lots located within the Kawarren locality and settlement, respectively. There are 3 new lots with DWM systems within the locality from June 2015-2021. There are 71 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Kawarren locality are summarised as follows:

- 11 AWTS (1 drip irrigation, 1 trench, 1 irrigation and 7 unknown);
- 1 composting toilet (1 trench);
- 3 sand filter (1 irrigation and 2 subsurface irrigation);
- 40 septic tank (12 trenches and 28 unknown); and
- 16 unknown (10 trenches and 6 unknown).

### 2I. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3I. Site Assessment Results

The following table summarises the results from the representative audits conducted by Consultant staff in September 2014.

Characteristic	Description
Land use	Comprises of a range of land uses, including dairy, forestry, rural living and tourism.
Occupancy rates	2.3 persons (Part of the Gellibrand State Suburb ABS Census, 2011) <sup>5</sup> .
Typical soils	Grey brown fine sandy loam to fine sandy clay loam becoming mottled at 15cm, abrupt change at 30cm to mottled light yellow grown and grey brown silty clay loam, grading to increasing mottling with depth to bright dark yellow brown, strong brown silty clay loam with some black

<sup>5</sup> No separate data for individual small townships and localities.

Characteristic	Description
	small concretions below 80cm depth. Drainage and permeability are variable depending on slope and position.
<b>AS/NZS 1547:2012 soil categories</b>	4 (Clay Loams) to 5 (Light Clays)
<b>Existing Systems</b>	<p><b>Separate Blackwater and Greywater</b></p> <p>Of the 8 systems inspected during field investigations, 75% of systems comprised separate blackwater treatment in a septic tank, with direct greywater diversion to an adjacent paddock (not to street drains, due to blocks generally sloping away from the street frontage). Greywater was typically ponded near the diversion outlet pipe, and often in areas trampled by livestock (cattle and sheep).</p> <p>The blackwater septic tanks were typically 40+ years old and approximately half had been pumped out within the last ten years. Septic effluent discharged to one or more conventional absorption trenches, some of which could not be identified without the owner present. The majority of trenches were located on land of less than 8% slope and appeared to be parallel with contours (i.e. running across slope, not down it). There was no evidence of blackwater effluent surcharging to the surface; however, soils were typically soft or boggy, mainly due to recent high rainfall.</p> <p><b>Combined Blackwater and Greywater</b></p> <p>25% of systems inspected had combined wastewater treatment systems or were assumed to have combined systems, based on layout of pipework. It is likely that the proportion of combined systems in Kawarren is less than this; however, this should be confirmed by ongoing inspections by Council.</p> <p>Septic effluent discharged to one or more conventional absorption trenches, which were all undersized for the number of bedrooms, and/or located in inadequately sized available land application areas (LAAs).</p>

#### 4I. Summary of Constraints to DWM

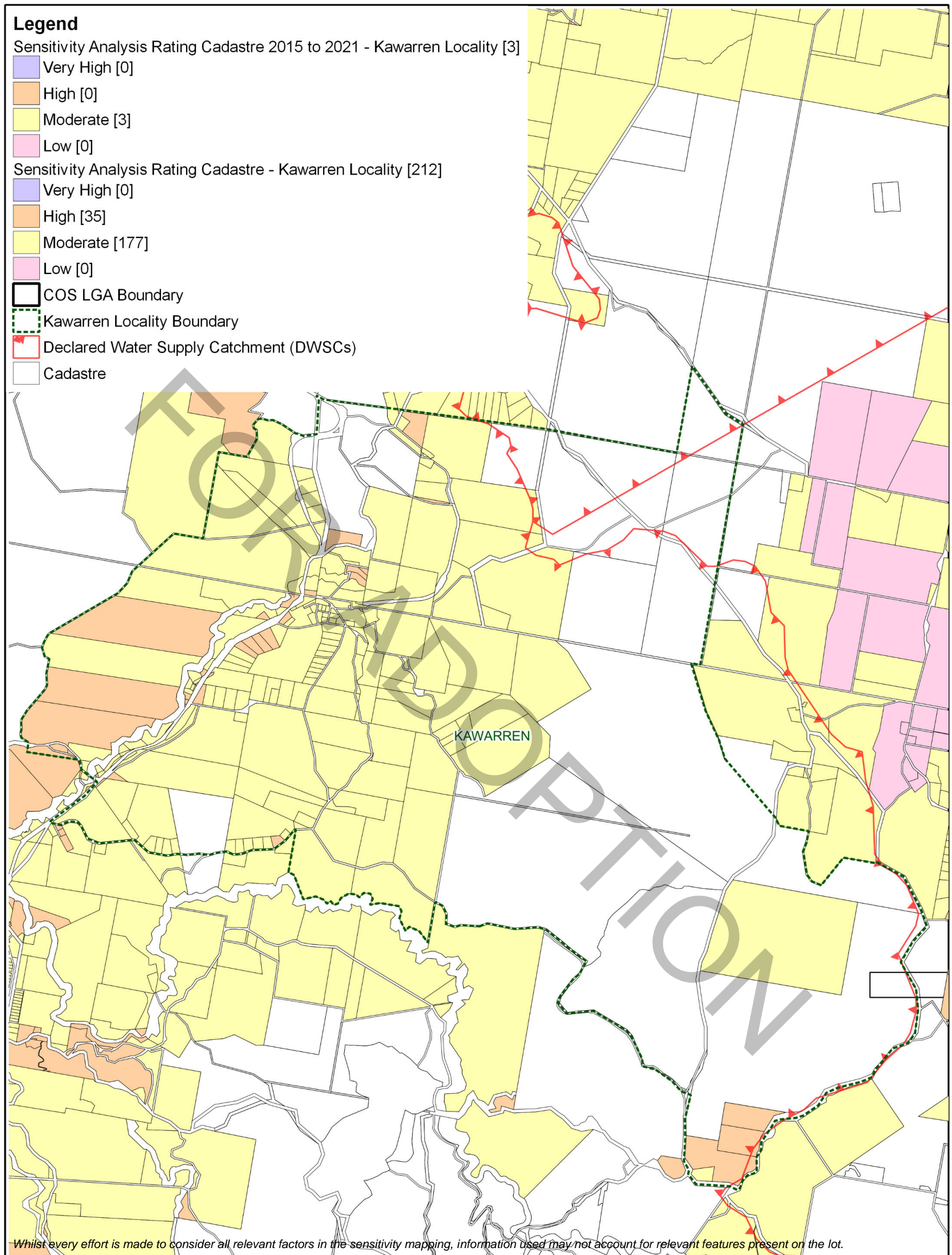
Characteristic	Description
<b>Climate Zone</b>	Zones 2 and 3.
<b>Surface waterways &amp; catchments</b>	The locality is located within the Gellibrand River and Barwon Downs Wellfield Intake DWSCs. The waterways include: Love Creek to the north of the settlement, Yahoo Creek, Ten Mile Creek, and Porcupine Creek which contains an extensive waterbody.

Characteristic	Description
<b>Groundwater</b>	Proximity to groundwater bores: significantly dense distribution throughout the settlement and along the river, similar to Gellibrand.
<b>Land subject to inundation</b>	Nil.
<b>Useable lot area Settlement (Locality)</b>	High: 37 (72) Moderate: 6 (16) Low: 29 (121) Compliant: 0 (6)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominantly zoned Farming Zone and Public Conservation and Resource Zone. The settlement is zoned Rural Living Zone. The majority of lots are non-compliant, particularly within the settlement. Compliant: 1 (24) Non-compliant: 71 (191)
<b>Slope Settlement (Locality)</b>	High: 6 (58) Moderate: 29 (74) Low: 37 (83)
<b>Geology</b>	Gellibrand Marl of Heytesbury Group (continental shelf deposits) is dominant with Older Volcanic Group to the west and north of settlement. The Clifton Formation of Heytesbury Group straddles the Older Volcanic Group and alluvial flood plain deposits. Demons Bluff Formation of the Nirranda Group is to the north of locality.
<b>Soil suitability Settlement (Locality)</b>	High: 0 (13) Moderate: 72 (202) Low: 0 (0) Variable soil landscapes throughout locality (5 in total). The settlement and the majority of the locality consists of soil landscape unit '90' which forms on the rolling hills in the northern upper reaches of the Gellibrand catchment and consists of mottled gradational soil to more than 2m depth. The soil consists of apedal fine sandy loam over weakly structured silty clay loam. Limitations include low p-sorb, low fertility and restricted drainage. The settlement and to the east of the locality consists of soil landscape unit '76' which forms on undulating plains. The soil consists of grey

Characteristic	Description
	sand soils to more than 2m depth with weak loamy sand overlying apedal sand. Limitations include low fertility.
<b>Sensitivity Overlay</b>	<p>Depth to Groundwater Compliance: predominantly compliant, except for along Love Creek which transverses northeast to southwest around the settlement.</p> <p>Landslip: minimal, with a few large regions to the east of the settlement.</p> <p>Vegetation: eastern half of locality consists of Otway Forest Park and Great Otway National Park.</p>
<b>Sensitivity Analysis Rating Settlement (Locality)</b>	<p>Very High: 0 (0)</p> <p>High: 12 (35)</p> <p>Moderate: 60 (180)</p> <p>Low: 0 (0)</p>

## 5I. Sensitivity Analysis (Maps)

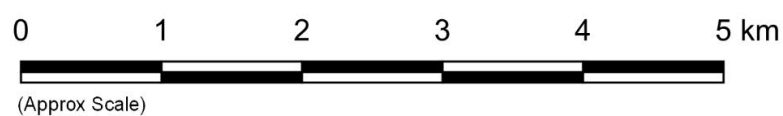




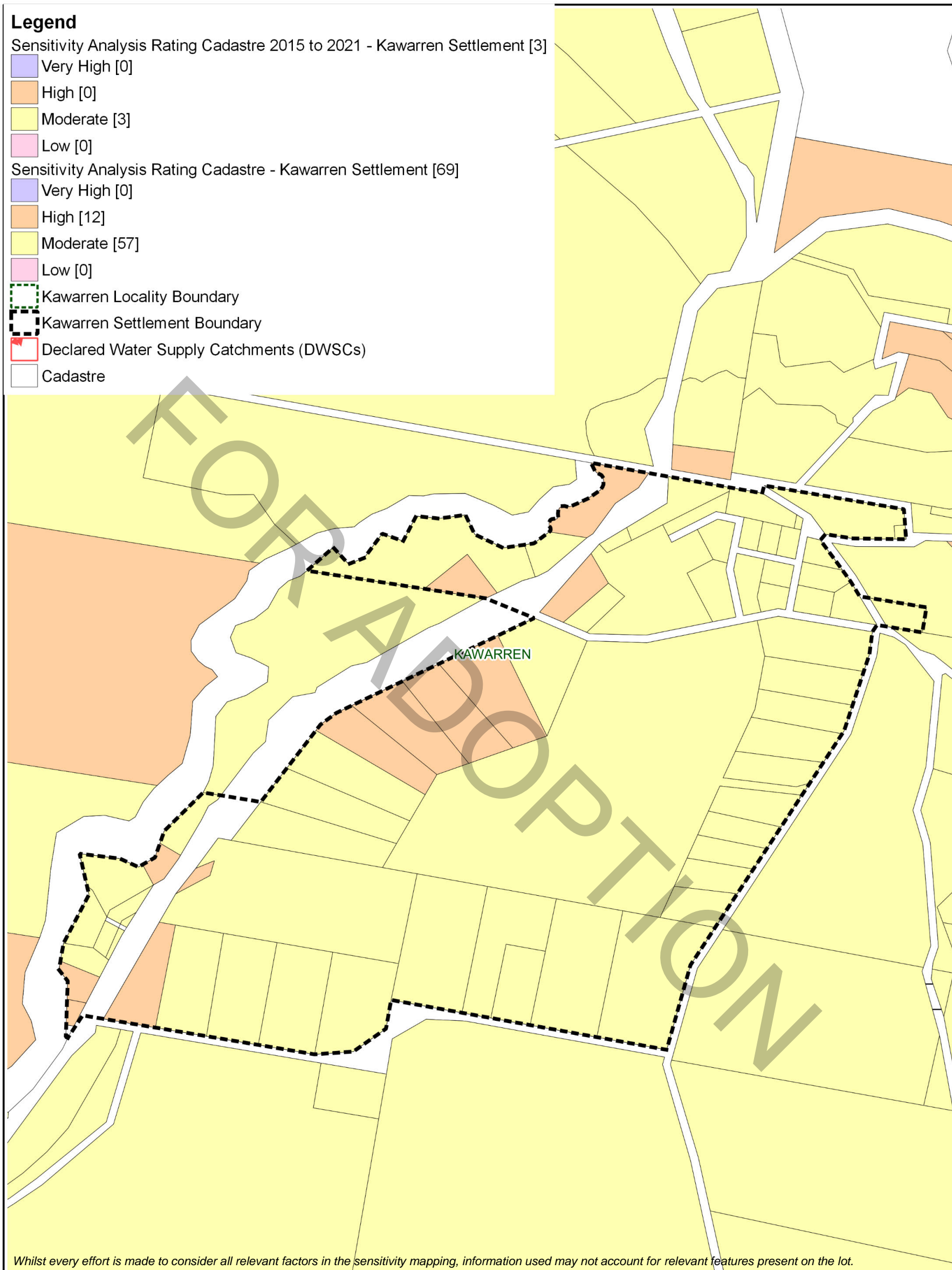
Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.

**Figure I1: Sensitivity Analysis - Kawarren Locality**

Colac Otway Shire DWMP Review



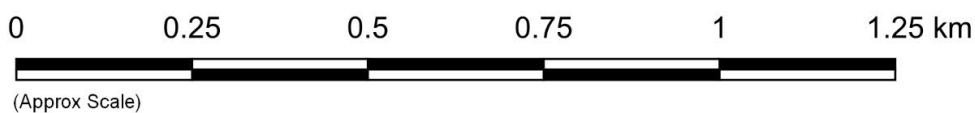
Revision	4
Drawn	JK
Approved	MS



*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

**Figure I2: Sensitivity Analysis - Kawarren Settlement**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS

## 6I. System Selection

Based on soil types and indicative depths, the Kwarren locality has the potential to sustainably accommodate a broad range of system types, depending on the influences of climate.

EPA Code of Practice (2013) (Section 2.2.2) identifies secondary treatment standard (or better) followed by subsurface pressure-compensating irrigation as current best-practice in Victoria for substantially reducing the risk associated with unsewered development. Further, the Code describes a “Wick trench/bed” land application option that may be incorporated with secondary treatment for consideration on sites constrained by climate or lot ‘useable area’, particularly within the DWSCs. Any variation from this best-practice approach must be provided with detailed supporting information to demonstrate suitability.

System Sizing Tables (below) indicate which systems are likely to be the most appropriate for the locality.

## 7I. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for Kwarren was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as ‘Not Applicable’ for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed ‘Not Applicable’ in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Kwarren locality are provided below.

## 8I. General Conclusion

The lots within the locality have predominantly been assigned a Moderate Sensitivity Rating to sustainable DWM; however, some lots, particularly in the settlement, have been assigned a High and Low Sensitivity Rating. Predominantly, Standard LCAs will be required, with the use of System Sizing Tables deemed appropriate. The Low Sensitivity Rating lots within a DWSC are required to complete a Standard LCA as per the current EPA Code of Practice’s requirements. Particular attention needs to be directed towards ensuring that appropriate setbacks to surface waterways, groundwater bores and flood prone areas are maintained. It is imperative that there is sufficient useable area to sustainably manage wastewater on-site.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Gellibrand & Kwarren										
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	5	5	4	3.5	3	2			
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> )†								
5 + bedroom residence	1,080	379		584	800	1,269	2,329			
4 bedroom residence	900	316		487	667	1,058	1,941			
1-3 bedroom residence	720	253		389	533	846	1,553			
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012										
† not including spacing or setbacks										
Conventional Absorption Trenches and Beds - Primary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	
	DLR (mm)	Not supported (Alternative Land Application System Required)								
Development Type	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	
	DLR (mm)	20*	20*	15	10	12	8	5	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	62		87	145	114	197		433	
4 bedroom residence	900	52		73	121	95	164		361	
1-3 bedroom residence	720	42		58	97	76	132		289	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012										
LPED Irrigation Systems - Primary or Secondary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	N/A (Alternative Land Application System Required)	4	3.5	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)			
Development Type	Daily (L/day)		Total min. basal or 'wetted area'†							
5 + bedroom residence	1,080		723	1,086						
4 bedroom residence	900		603	905						
1-3 bedroom residence	720		482	724						
† required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks										
Wick Trenches and Beds - Secondary Treated Effluent Only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	
	DLR (mm)	25	30	20	10	12	8	8	N/A (Alternative Land Application System Required)	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	49	40	62	145	114	197			
4 bedroom residence	900	41	33	52	121	95	164			
1-3 bedroom residence	720	33	27	42	97	76	132			

## M. Kennett River Locality Report

### 1m. Introduction

Kennett River is a coastal locality along the south-eastern coastline of COS, approximately 20km northeast of Apollo Bay, in the heavily vegetated foothills of the south-eastern section of the Otway Ranges. The locality is not located within a DWSC.

The locality has an estimated permanent population of approximately 41 residents (ABS Census, 2016). There are 183 and 180 unsewered lots within the Kennett River locality and town, respectively. There are no new lots with DWM systems within the locality from June 2015-2021. There are 120 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Kennett River locality is summarised as follows:

- 39 AWTS (13 drip irrigation, 3 irrigation, 4 subsurface irrigation, 2 trenches and 17 unknown);
- 52 sand filters (50 subsurface irrigation, 1 trench and 1 unknown)
- 10 septic tanks (2 trenches and 8 unknown)
- 19 unknown (5 trenches, 1 subsurface irrigation and 13 unknown).

No field investigations were conducted in Kennett River as part of the 2014 field assessments.

### 2m. Background Documentation

Refer to the following documents for additional detail regarding the locality.

- Colac Otway Shire Coastal Community Revitalisation Project (April 2003);
- Colac Otway Shire, Three Towns Stormwater Management Strategy, Concept Study (October 2004);
- Concept Design for Wye River Separation Creek and Kennett River, (June 2006);
- Kennett River, Wye River and Separation Creek Structure Plans (February 2008);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3m. Summary of Constraints to DWM

Characteristic	Description
Climate Zone	Zone 2.
Surface waterways & catchments	The locality is not located within a DWSC. Kennett River and its tributaries form the major waterway within this region and confluences with the Southern Ocean. Kennett River east and west branches are located in the top of the catchment before merging. Additional waterways within the Kennett River locality include, Grey River and Carisbrook Creek which flows along the western locality boundary.

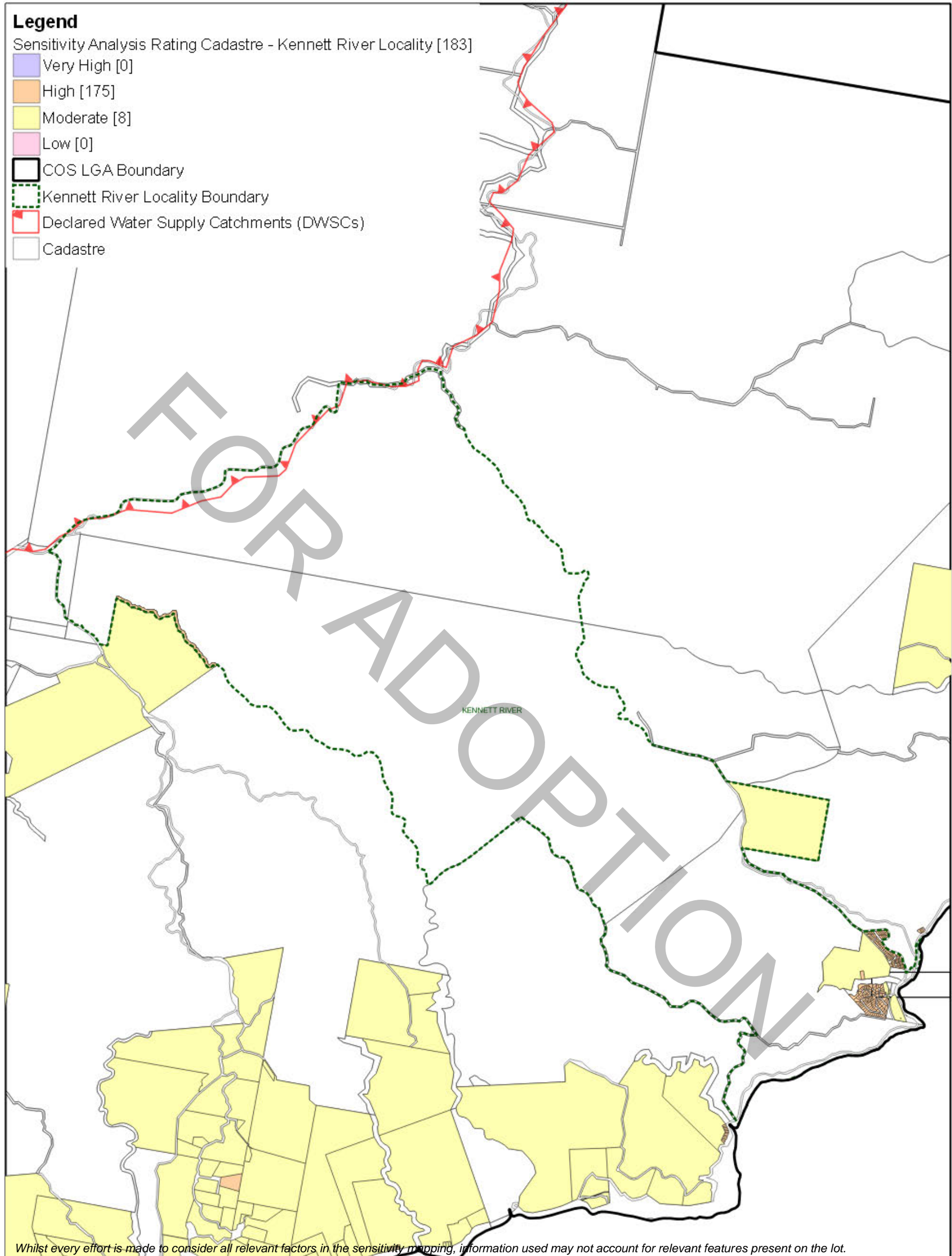
<b>Characteristic</b>	<b>Description</b>
<b>Groundwater</b>	Proximity to groundwater bores: none.
<b>Land subject to inundation</b>	Along the confluences of Kennett River around the town.
<b>Useable lot area Town (Locality)</b>	High: 172 (172) Moderate: 7 (8) Low: 1 (2) Compliant: 0 (1)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominantly zoned Public Conservation and Resource Zone, with small sections of Rural Conservation Zone. The town is zoned Township Zone, with Public Use Zone along the foreshore.  The majority of the lots are compliant. There are prescribed minimum lot sizes for subdivisions, as per Design and Development Overlay Schedule 4 (DDO4 – Coastal Towns: Skenes Creek, Kennett River, Wye River and Separation Creek).  Compliant: 178 (179) Non-compliant: 2 (4)
<b>Slope Town (Locality)</b>	High: 160 (163) Moderate: 15 (15) Low: 5 (5)
<b>Geology</b>	Eumeralla Formation of the Otway Group with alluvial floodplain deposits around the Kennett River confluence.
<b>Soil suitability Town (Locality)</b>	High: 0 (0) Moderate: 180 (183) Low: 0 (0)  Along the coastline and town consists of soil landscape '64' (moderate rating) which forms in the similar landscape as detailed in '61'. It consists of brown texture contrast soils to 0.9m depth. The soils consist of weakly structured clay sand over strongly structured clay loam. The northern half of the locality consists of soil landscapes '61 and 59', which are located within the forested regions of the Great Otway National Park.
<b>Sensitivity Overlay</b>	No depth to groundwater data.  Landslip: minimal, found along the foreshore and a small section along the eastern boundary to the north of the town.

Characteristic	Description
	Vegetation: all land surrounding the town is defined as Great Otway National Park and Kennett River Coastal Reserve.
<b>Sensitivity Analysis Rating Town (Locality)</b>	Very High: 0 (0) High: 174 (175) Moderate: 6 (8) Low: 0 (0)

#### 4m. Sensitivity Analysis (Maps)

FOR ADOPTION

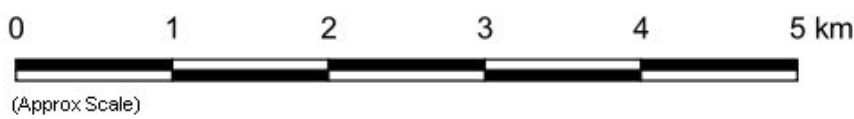
Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document



*Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.*

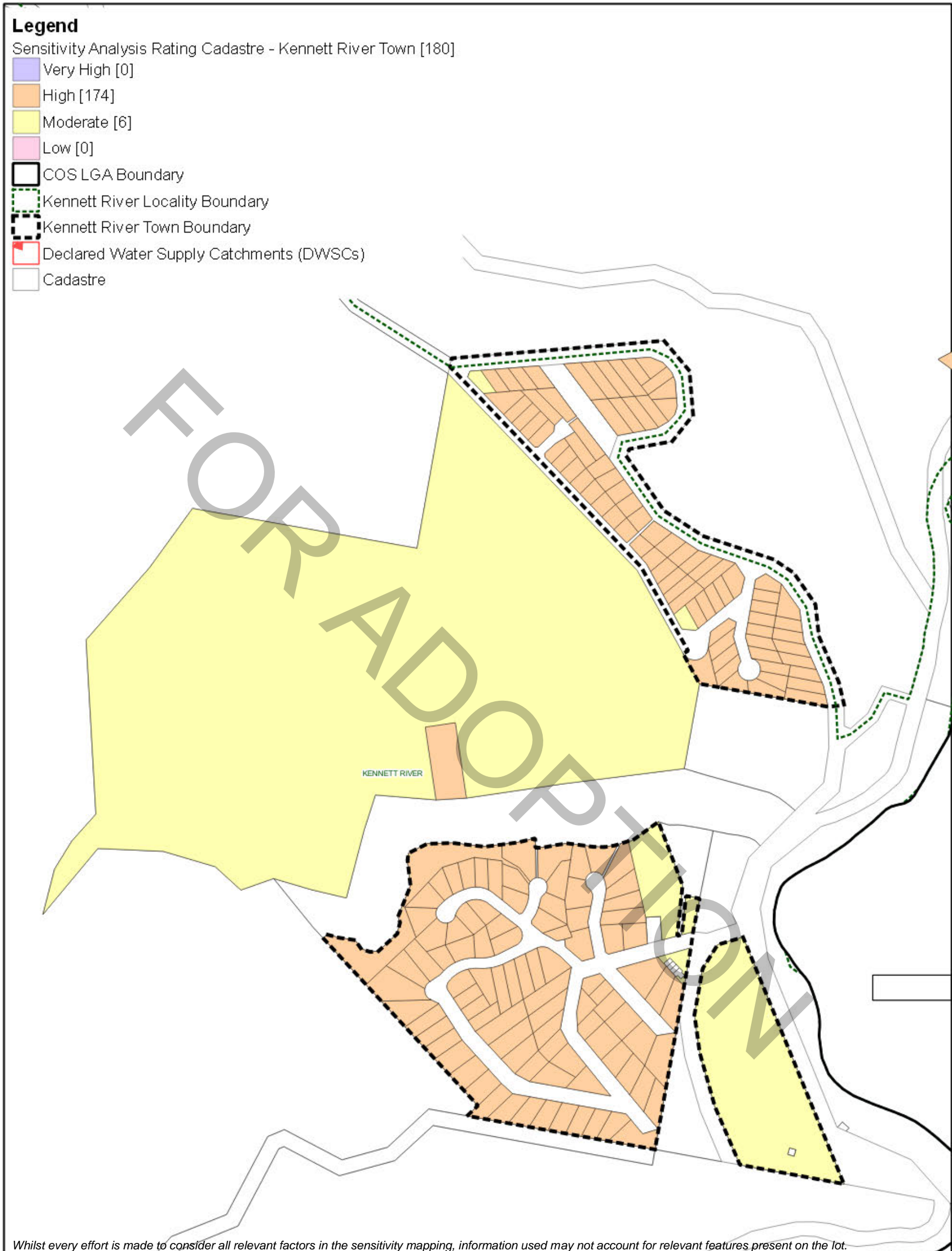
**Figure m1: Sensitivity Analysis - Kennett River Locality**

Colac Otway Shire DWMP Review



N 	
Revision	3
Drawn	JK
Approved	MS





**Figure m2: Sensitivity Analysis - Kennett River Town**

Colac Otway Shire DWMP Review

**W Whitehead & Associates**  
 Environmental Consultants



Revision	2
Drawn	JK
Approved	MS

## 5m. System Selection

Soil types vary significantly in the Kennett River area depending on position in the landscape (i.e. sand deltas or hill slopes). Appendix A of the EPA Code of Practice (2013) prohibits conventional and modified trenches and beds as well as LPED systems on Category 1 soils (sands), which preclude these systems on the delta areas. Landslip risks and land gradients are major constraints for DWM on lots located on the hillslopes in the locality. As such, site-specific LCA investigations and system designs are recommended; however, the sizing tables (below) provide some guidance on which systems may be appropriate. Note that the DIR for subsurface irrigation systems has not been reduced to account for slopes above 10% (as is recommended in AS/NZS 1547:2012). Surface irrigation is not recommended on slopes greater than 10%.

## 6m. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for the Kennett River and Sugarloaf area was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as 'Not Applicable' for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as 'Not Applicable' for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed 'Not Applicable' in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Kennett River locality are provided below.

## 7m. General Conclusion

The lots within the locality have been assigned a Moderate or High Sensitivity Rating to sustainable DWM, with the majority of the town assigned as High. Both Standard and Detailed LCAs will be required, with the use of System Sizing Tables deemed appropriate for the Standard LCAs. Particular attention needs to be directed towards ensuring that the DWM systems are sized based on the limiting soil horizon, which may be relatively shallow, and that the systems selected are appropriate for steeper slopes with correct construction. The majority of lots within the region also have less than 1,500m<sup>2</sup> of useable area for DWM, which also does not exclude heavily vegetated areas. This will limit design options and it is imperative that the LCA DWM system design ensure that DWM is contained on-site.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Kennett River (& Sugarloaf)										
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	5	5	4	3.5	3	N/A (Alternative Land Application System Required)			
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> )†								
5 + bedroom residence	1,080	338		491	626	900				
4 bedroom residence	900	282		410	530	750				
1-3 bedroom residence	720	225		328	424	600				
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012										
† not including spacing or setbacks										
Conventional Absorption Trenches and Beds - Primary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	
	DLR (mm)	20*	20*	15	10	6	5	4	N/A (Alternative Land Application System Required)	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing or setbacks								
5 + bedroom residence	1,080	61		85	138	281	379	584		
4 bedroom residence	900	51		71	115	234	316	487		
1-3 bedroom residence	720	41		57	92	187	253	389		
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012										
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6)										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	
	DLR (mm)	20*	20*	15	10	12	8	5	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	61		85	138	110	185		379	
4 bedroom residence	900	51		71	115	92	154		316	
1-3 bedroom residence	720	41		57	92	74	124		253	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012										
LPED Irrigation Systems - Primary or Secondary Treated Effluent - Slopes only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	N/A (Alternative Land Application System Required)	4	3.5	3	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)			
Development Type	Daily (L/day)		Total min. basal or 'wetted area'†							
5 + bedroom residence	1,080		584	800	1,269					
4 bedroom residence	900		487	666	1,057					
1-3 bedroom residence	720	389	533	846						
† required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks										
Wick Trenches and Beds - Secondary Treated Effluent Only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	
	DLR (mm)	25	30	20	10	12	8	8	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	48	39	61	138	110		185	379	
4 bedroom residence	900	40	33	51	115	92		154	316	
1-3 bedroom residence	720	32	26	41	92	74		124	253	

## N. Lavers Hill Locality Report

### 1n. Introduction

Lavers Hill is located approximately 41km southwest of Colac within the southern section of COS. The locality centres on a narrow ridgeline on the Great Ocean Road. The landform consists of undulating, dissected crests and rolling hills of the Otway Ranges. Notably, the locality on the northern side of the ridgeline is located within the Gellibrand River (South Otway) DWSC as indicated by the surface water informative map A1, Appendix A.

The locality has an estimated permanent population of approximately 78 residents (ABS Census, 2016). There are approximately 194 and 84 unsewered lots located within the Lavers Hill locality and town, respectively. There are 5 new lots with DWM systems within the locality from June 2015-2021. There are 50 DWM system permits that have been inspected to date by COS (including PTI and CTU). The current DWM permits and their associated treatment system and LAA method within the Lavers Hill locality are summarised as follows:

- 16 AWTS (4 drip irrigation, 3 trenches, 1 subsurface irrigation and 8 unknown);
- 12 septic tanks (5 trenches, 1 subsurface irrigation and 6 unknown);
- 1 worm farm (1 unknown); and
- 21 unknown (11 trenches, 1 irrigation, 1 subsurface irrigation and 8 unknown).

### 2n. Background Documentation

Refer to the following documents for additional detail regarding the locality:

- Amended Urban Design Framework Plan for Lavers Hill (June, 2006);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

### 3n. Site Assessment Results

The following table summarises the results from the representative audits conducted by Consultant staff in September 2014.

Characteristic	Description
Land use	Comprises a range of land uses, including dairy, forestry, rural living and tourism.
Occupancy rates	2.3 (Part of the Beech Forest State Suburb, ABS Census, 2011).
Typical soils	Gradational profile with very dark grey brown silty clay loam topsoil becoming mottled with dark grey brown and dark yellow brown between 40-60 cm, then more strongly mottled dark yellow brown, yellow brown and grey brown silty clay to 80+ cm. Drainage and permeability are variable depending on slope and position.
AS/NZS 1547:2012 soil categories	4 (Clay Loams) and 5 (Light Clays).

Characteristic	Description
Existing Systems	<p><b>Separate Blackwater and Greywater</b></p> <p>Of the six systems inspected during field investigations, two or three systems (33-50%) comprised separate blackwater treatment in a septic tank, with direct greywater diversion to an adjacent paddock or within the property boundary.</p> <p>The blackwater septic tanks were typically 30+ years old (or not found) and the time since last pump-out was generally unknown (partly due to owner not being home to ascertain). Septic effluent discharged to one or more conventional absorption trenches (or was assumed to if trenches could not be identified). The trench dimensions were generally unclear, and it is likely that most trenches were undersized for the number of bedrooms. One property had poorly-treated blackwater effluent being discharged to the ground surface from a broken pipe. LAA slopes ranged from 2-10%.</p> <p><b>Combined Blackwater and Greywater</b></p> <p>Three or four systems (50-67%) inspected have a combined wastewater treatment system, or were assumed to have based on layout of pipework and age of dwelling. This included one combined AWTS (less than 2 years old) for a commercial property, and a retrofitted AWTS using one of three existing septic tanks on another commercial property.</p> <p>Septic tank effluent discharged to a series of conventional absorption trenches in LAAs generally of less than 4% slope. Most trenches could be identified and all were undersized for the number of bedrooms and/or the type of property.</p> <p>The standalone AWTS discharged effluent to subsurface irrigation which appeared to be undersized based on the likely patronage over the peak tourism season, and had boggy sections.</p> <p>The retrofitted AWTS discharged effluent to an undersized trench LAA.</p>

#### 4n. Summary of Constraints to DWM

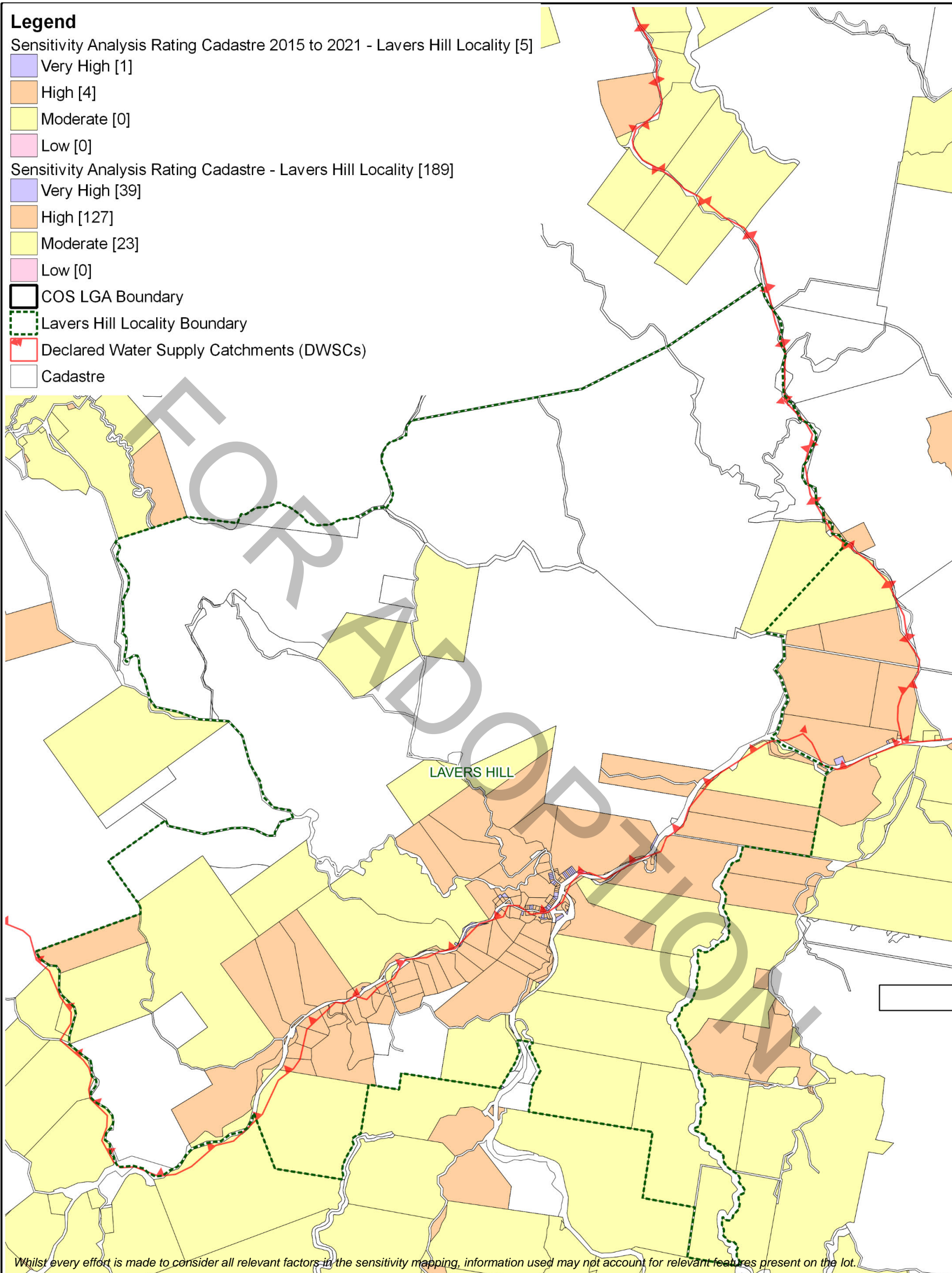
Characteristic	Description
Climate Zone	The town is included within Zone 4 and part of the surrounding locality is located within Zone 3.
Surface waterways & catchments	Lavers Hill is similar to Beech Forest, whereby the northern half of the locality is within a DWSC, Gellibrand River. The DWSC boundary runs along the ridgeline which forms the main road which divides the town. The waterways include: Chapple Creek South and North Branch, Skinner Creek, Sandy Creek, Melba Gully and Ford River West Branch.

<b>Characteristic</b>	<b>Description</b>
<b>Groundwater</b>	Proximity to groundwater bores: Nil.
<b>Land subject to inundation</b>	Nil
<b>Useable lot area Town (Locality)</b>	High: 50 (62) Moderate: 20 (27) Low: 12 (93) Compliant: 0 (12)
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	The locality is predominantly zoned Farming Zone and Public Conservation and Resource Zone. The town is zoned Township Zone. Compliance is variable throughout the locality, with the majority of the lots on the southern side of the main road outside of the DWSC non-compliant. Compliant: 80 (104) Non-compliant: 2 (90)
<b>Slope Town (Locality)</b>	High: 26 (96) Moderate: 22 (54) Low: 34 (44)
<b>Geology</b>	Predominately Eumeralla Formation of the Otway Group, with Wiridjil Gravel Member of the Pebble Point Formation to the northwest.
<b>Soil suitability Town (Locality)</b>	High: 82 (182) Moderate: 0 (12) Low: 0 (0)  The ridgeline and town consist of soil landscape unit '60' which form on rolling hills along the top of the Otway Ranges. The soil consists of brown friable gradational soils with weakly structured clay loam over light clay to 0.9m depth. Limitations include restricted drainage.  Flanking either side of '60' is soil landscape unit '61' which forms on the deeply dissected hills of the Otway Ranges and consists of brown gradational soils to 1.2m depth. The soils consist of moderately structured silty loam over clay loam. Limitations include acidity and restricted drainage.
<b>Sensitivity Overlay</b>	No depth to groundwater data. Landslip: minimal.

Characteristic	Description
	Vegetation: extensive regions of Great Otway National Park and Otway Forest Park primarily to the north of the town.
<b>Sensitivity Analysis Rating Town (Locality)</b>	Very High: 29 (40) High: 53 (131) Moderate: 0 (23) Low: 0 (0)

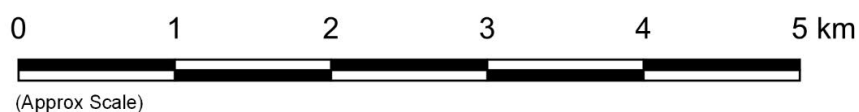
### 5n. Sensitivity Analysis (Maps)

FOR ADOPTION



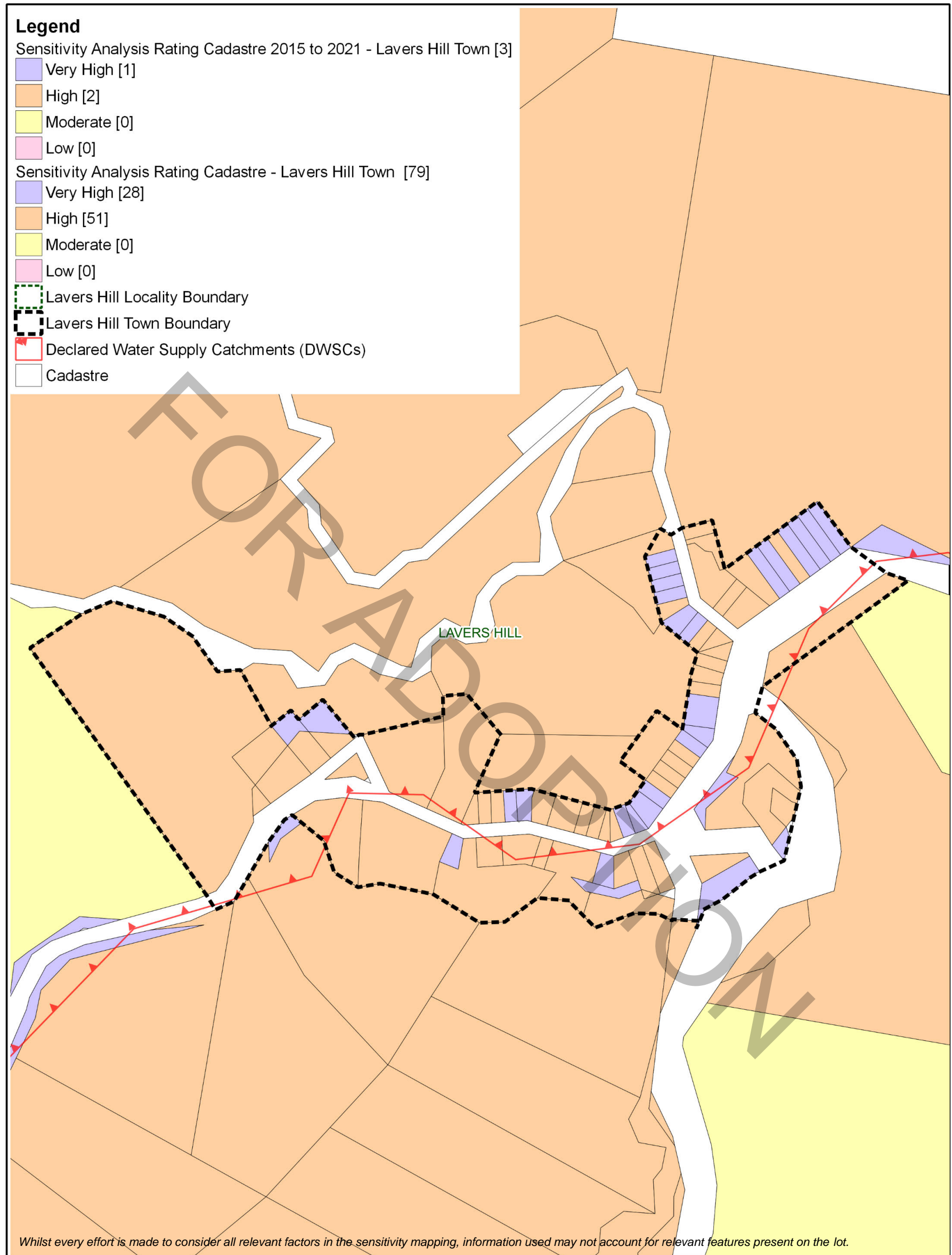
**Figure n1: Sensitivity Analysis - Lavers Hill Locality**

Colac Otway Shire DWMP Review



N 	
Revision	3
Drawn	JK
Approved	MS





**Figure n2: Sensitivity Analysis - Lavers Hill Town**

Colac Otway Shire DWMP Review



Revision	4
Drawn	JK
Approved	MS

## 6n. System Selection

Due to the dominance of heavy-textured soils in the Lavers Hill locality, conventional absorption trenches and beds are not likely to be feasible and are discouraged. Appendix A of the EPA Code of Practice (2013) prohibits LPED systems on Category 5 and 6 soils (medium to heavy clays).

The wet climate of the Lavers Hill area makes it a high risk for DWM and site-specific, detailed land capability assessment and design will be required for unsewered lots in this area. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area) may be required to sustainably achieve land application of effluent on constrained lots.

EPA Code of Practice (2013) (Section 2.2.2) identifies secondary treatment standard (or better) followed by subsurface pressure-compensating irrigation as current best-practice in Victoria for substantially reducing the risk associated with unsewered development. Further, the Code describes a “Wick trench/bed” land application option that may be incorporated with secondary treatment for consideration on sites constrained by climate or lot ‘useable area’, particularly within the DWSCs. Any variation from this best-practice approach must be provided with detailed supporting information to demonstrate suitability.

Sizing Tables (discussed below) are not applicable for the Lavers Hill locality.

## 7n. System Sizing Tables

Sizing Tables for each system type were tested using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall was sourced from the Wyelangta BoM station (090087) and average evapotranspiration data for Lavers Hill was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

70<sup>th</sup> percentile monthly rainfall exceeds average monthly evapotranspiration for the entire ‘design’ climate year in and around Lavers Hill. As a result, there is a month-to-month surplus of hydraulic inputs and subsequently the monthly water balance does not resolve itself and cannot produce meaningful results for land application area sizing.

## 8n. General Conclusion

The majority of the lots within the locality have been assigned a High Sensitivity Rating to sustainable DWM. Predominantly, Detailed LCAs will be required, with all levels of LCA required to complete a site-specific design due to the higher rainfall associated with this region. System Sizing Tables were not generated for Lavers Hill and site-specific design is required for all lots that are located within Climate Zone 4, as per Figure 3 of the DWMP Technical Document, and System Sizing Tables cannot be used. Particular attention needs to be directed towards ensuring that the DWM systems are sized based on the limiting soil horizon and that the systems selected are appropriate for steeper slopes with correct construction.

Lavers Hill (and Wyelangta)

Drip and Spray Irrigation Systems* - Secondary Treated Effluent only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
Development Type	DIR (mm)	Not supported (Alternative Land Application System or Extensive/Modified Design Required)								
	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012										
† not including spacing or setbacks										
Conventional Absorption Trenches and Beds - Primary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	
Development Type	DLR (mm)	Not supported (Alternative Land Application System Required)								
	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 3a to 5a) only										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	
Development Type	DLR (mm)	20*	20*	15	10	12	8	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)	
	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	Not Supported (not considered best-practice)		131	332	206	862**			
4 bedroom residence	900			110	277	172	719**			
1-3 bedroom residence	720			88	222	138	575**			
<b>Note:</b> * Gravels, Sands and Sandy loams are generally unsuitable for ETA trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012. ** Will require specialist advice regarding engineering and construction detail for installation.										
LPED Irrigation Systems - Primary or Secondary Treated Effluent										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
Development Type	DIR (mm)	Not supported (Alternative Land Application System Required)								
	Daily (L/day)									
5 + bedroom residence	1,080									
4 bedroom residence	900									
1-3 bedroom residence	720									
Wick Trench - Secondary Treated Effluent Only - as per Section 7.4 design for High Rainfall Areas										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	
Development Type	DLR (mm)	25	30	20	10	12	8	8	N/A (Alternative Land Application System Required)	
	Daily (L/day)	Total effluent application area footprint (m <sup>2</sup> ), including interbed spacing								
5 + bedroom residence	1,080	Not Supported (not considered best-practice)		295	945	620	1,600**			
4 bedroom residence	900			230	720	555	1,400**			
1-3 bedroom residence	720			165	620	425	1,140**			
<b>Note:</b> ** Will require specialist advice regarding engineering and construction detail for installation.										

FOR ADOPTION

## O. Wye River and Separation Creek Locality Report

### 1o. Introduction

Wye River and Separation Creek are two separate adjacent localities, with respective towns, that are located along the south-eastern coastline of COS approximately 23km northeast of Apollo Bay. They are located in the heavily vegetated foothills of the south-eastern section of the Otway Ranges. The localities are not located within a DWSC.

Previous studies have found that it is not technically feasible to sewer the towns, particularly due to the heavily vegetated steep slopes and landslip potential of the region. Extensive assessment, outlined in the background documentation listed below, has been conducted within this region about the perceived environmental and public health risks in both the Wye River and Separation Creek estuaries associated with DWM systems.

The locality has an estimated permanent population of approximately 63 and 19 residents for Wye River and Separation Creek, respectively (ABS Census, 2016). Note that there is a high seasonal population fluctuation within these localities.

There are approximately 389 and 373 unsewered lots located within the Wye River locality and town, respectively, and 129 and 117 in the Separation Creek locality and town, respectively. There are 13 and zero new lots with DWM systems within the Wye River and Separation Creek localities from June 2015-2021, respectively. There are 217 and 103 DWM system permits that have been inspected to date by COS for Wye River and Separation Creek respectively (including PTI and CTU). The 2015 bushfires that swept through this region is the major contributor to the higher number of inspections that have occurred in association with the rebuild of this region. The current DWM permits and their associated treatment system and LAA method within the Wye River and Separation Creek localities are summarised as follows:

Wye River:

- 149 AWTS (24 drip irrigation, 2 trenches, 11 irrigation, 16 subsurface irrigation and 96 unknown);
- 2 composting toilet (2 unknown);
- 32 septic tanks (5 trenches and 27 unknown);
- 5 worm farms (3 trenches and 3 irrigation); and
- 25 unknown (5 drip irrigation, 1 trench, 1 irrigation and 18 unknown).

Separation Creek:

- 50 AWTS (8 drip irrigation, 5 trenches, 4 irrigation, 7 subsurface irrigation, 26 unknown);
- 22 sand filters (21 subsurface irrigation and 1 unknown);
- 15 septic tanks (1 subsurface irrigation, 1 trench and 13 unknown); and
- 16 unknown (2 trenches, 2 subsurface irrigation and 12 unknown).

There were two official complaints relating to DWM systems directed to COS in 2015; failed land application area with improvement directed by COS, and a system failing (odour) and unsuitably sized for intermittent holiday loading.

No field investigations were conducted in the Wye River and Separation Creek localities.

## 2o. Background Documentation

Refer to the following documents for additional detail regarding the localities.

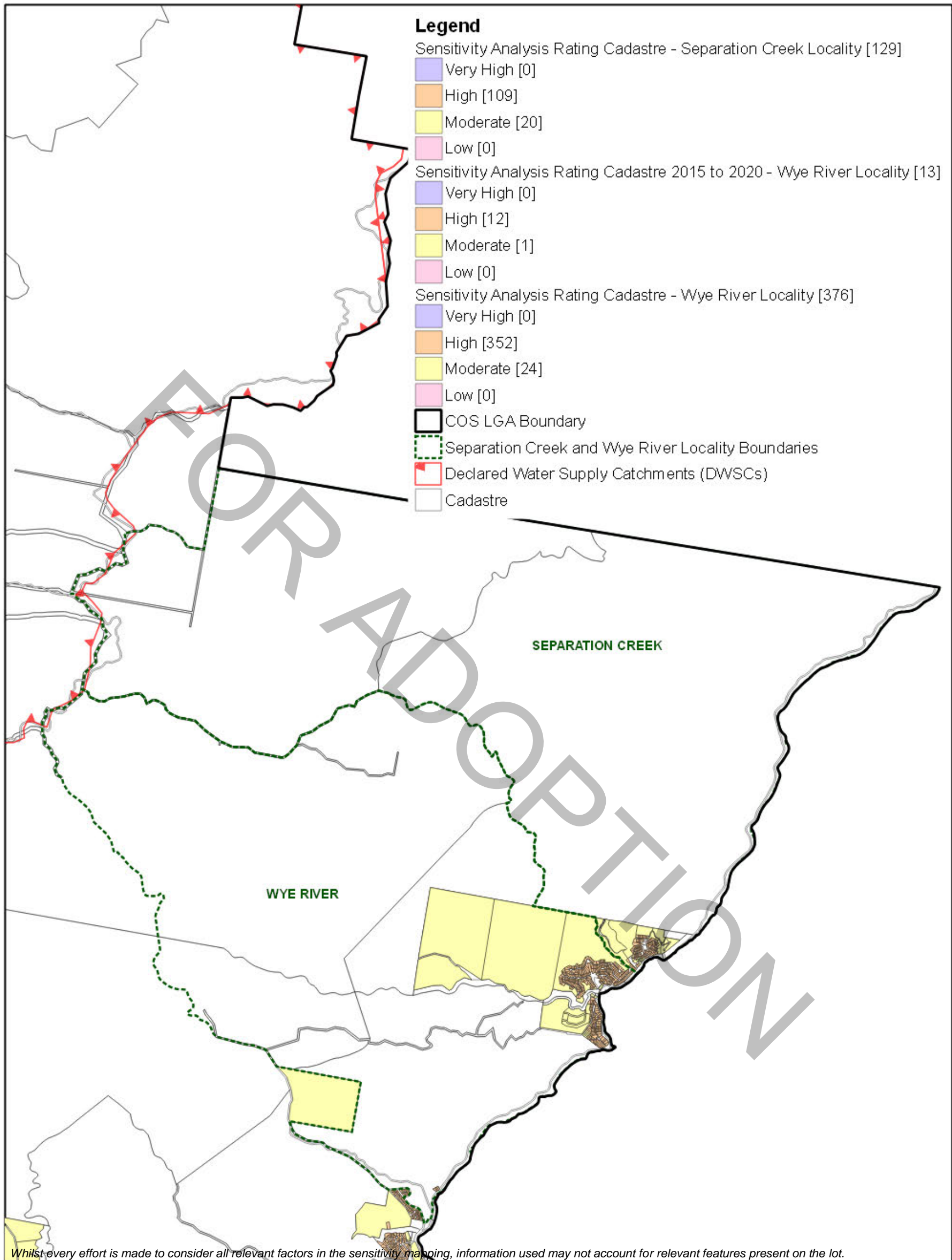
- Wye River and Separation Creek Site Survey Property Reports (November 2013);
- Wye River and Separation Creek Quantitative Microbial Risk Assessment and Ecological Risk Assessment (September 2014);
- Issues Paper Wastewater Management Wye River and Separation Creek (May 2002);
- Wye River Drainage Reserve Land Management Plan: Assessment and Recommendations (February 2012);
- Colac Otway Shire Coastal Community Revitalisation Project (April 2003);
- Colac Otway Shire, Three Towns Stormwater Management Strategy, Concept Study (October 2004);
- Concept Design for Wye River Separation Creek and Kennett River, (June 2006);
- Kennett River, Wye River and Separation Creek Structure Plans (February 2008);
- GIS Atlas - Climate Paper (June, 2000);
- COS Planning Scheme; and
- Rural Living Strategy (2011).

## 3o. Summary of Constraints to DWM

Characteristic	Description
<b>Climate Zone</b>	Zone 2.
<b>Surface waterways &amp; catchments</b>	The localities are not located within a DWSC. Both Separation Creek and Wye River form the major waterways within this region and confluence with the Southern Ocean. Additional waterways within Separation Creek include Jamieson Creek and Cumberland River. Additional waterways within Wye River include Monash Gully and Hitchcock Gully.
<b>Groundwater</b>	Proximity to groundwater bores: insignificant (only one).
<b>Land subject to inundation</b>	Along the confluences of Wye River and Separation Creek within the towns.
<b>Useable lot area Town (Locality)</b>	High: WR 327 (330) SC 118 (121) Moderate: WR 45 (45) SC 0 (1) Low: WR 2 (11) SC 0 (7) Compliant: WR 0 (3) SC 0 (0)

Characteristic	Description
<b>Minimum lot size compliance with Planning Scheme Zoning</b>	<p>The localities are predominantly zoned Rural Conservation Zone and Public Conservation and Resource Zone. The towns are predominantly zoned Township Zone.</p> <p>The majority of lots are compliant, with only the larger lots adjacent to the towns non-compliant. These are prescribed minimum lot sizes for subdivisions within the Township Zone, under the provisions of Design and Development Overlay Schedule 4 (DDO4 – Coastal Towns: Skenes Creek, Kennett River, Wye River and Separation Creek).</p> <p>Compliant: WR 363 (366) SC 116 (117)  Non-compliant: WR 10 (23) SC 2 (12)</p>
<b>Slope Town (Locality)</b>	<p>High: WR 359 (375) SC 100 (111)  Moderate: WR 7 (7) SC 5 (5)  Low: WR 7 (7) SC 13 (13)</p>
<b>Geology</b>	<p>Eumeralla Formation of the Otway Group with alluvial flood plain deposits.</p>
<b>Soil suitability Town (Locality)</b>	<p>High: WR 0 (0) SC 0 (0)  Moderate: WR 373 (389) SC 118 (129)  Low: WR 0 (0) SC 0 (0)</p> <p>Along the coastline and the towns consists of soil landscape unit '64' (moderate rating) which forms in the similar landscape as detailed in '61'. It consists of brown texture contrast soils to 0.9m depth. The soils consist of weakly structured clay sand over strongly structured clay loam.</p>
<b>Sensitivity Overlay</b>	<p>No depth to groundwater data.</p> <p>Landslip: extensive, particularly around coastal extents around the town.</p> <p>Vegetation: all land surrounding the town is defined as Great Otway National Park and Wye River Coastal Reserve.</p>
<b>Sensitivity Analysis Rating Town (Locality)</b>	<p>Very High: WR 0 (0) SC 0 (0)  High: WR 360 (364) SC 105 (109)  Moderate: WR 13 (25) SC 13 (20)  Low: WR 0 (0) SC 0 (0)</p>

#### 4o. Sensitivity Analysis (Maps)



**Figure 01: Sensitivity Analysis - Separation Creek and Wye River Localities**

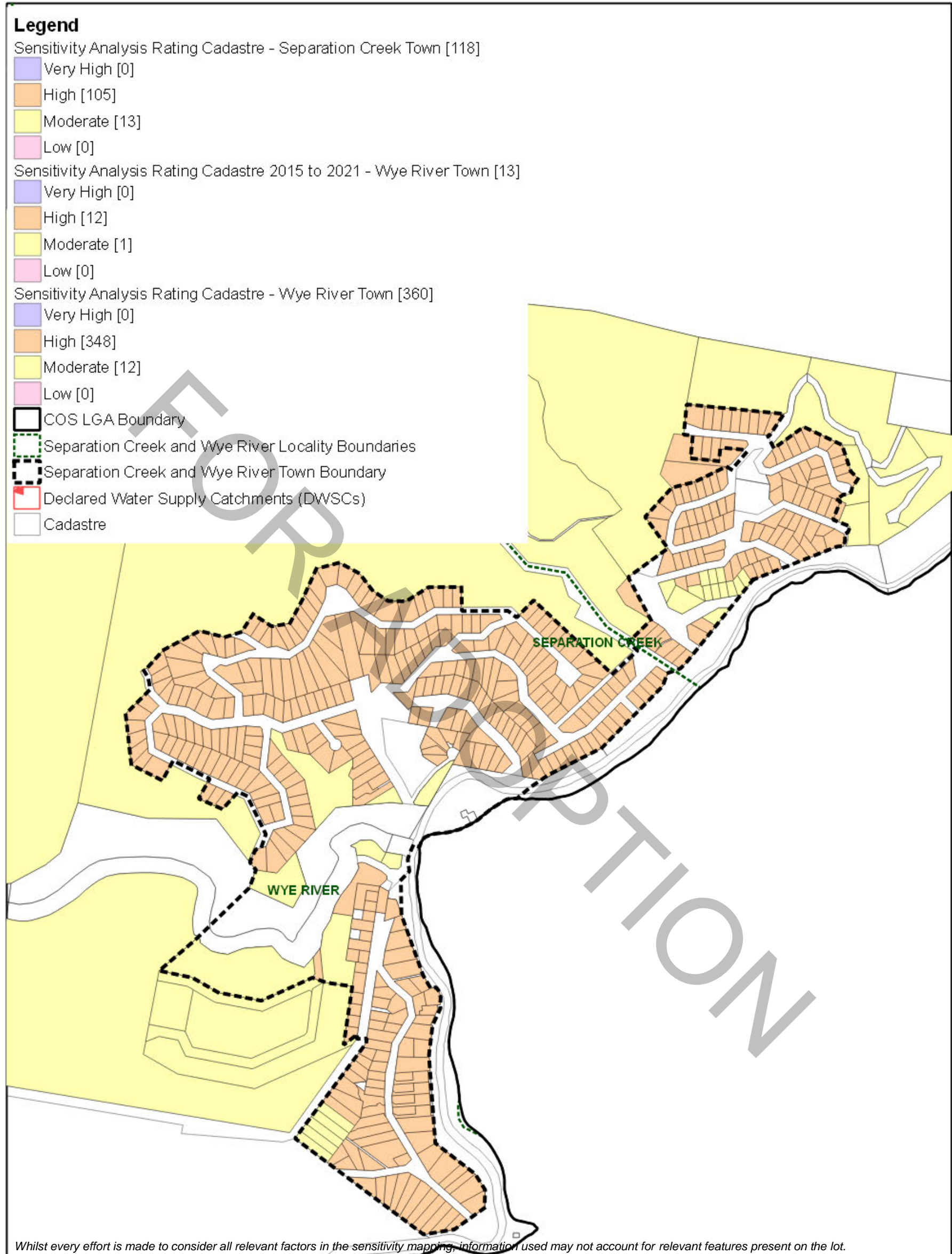
Colac Otway Shire DWMP Review

**W Whitehead & Associates**  
Environmental Consultants



Revision	3
Drawn	JK
Approved	MS

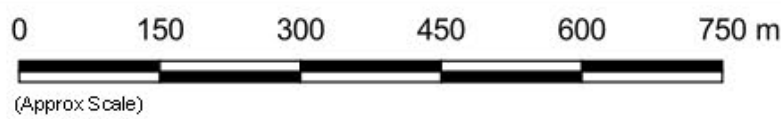




Whilst every effort is made to consider all relevant factors in the sensitivity mapping, information used may not account for relevant features present on the lot.

**Figure o2: Sensitivity Analysis - Separation Creek and Wye River Towns**

Colac Otway Shire DWMP Review



Revision	2
Drawn	JK
Approved	MS

## 5o. System Selection

Soil types vary significantly in the Wye River and Separation Creek localities, depending on position in the landscape (i.e. sand deltas or hill slopes). Appendix A of the EPA Code of Practice (2013) prohibits conventional and modified trenches and beds as well as LPED systems on Category 1 soils (sands), which preclude these systems on the delta areas. Landslip risks and land gradients are major constraints for DWM on lots located on the hillslopes in these localities. As such, site-specific LCA investigations and system designs are recommended; however, the sizing tables (below) provide some guidance on which systems may be appropriate. Note that the DIR for subsurface irrigation systems has not been reduced to account for slopes above 10% (as is recommended in AS/NZS 1547:2012). Surface irrigation is not recommended on slopes greater than 10%.

## 6o. System Sizing Tables

Sizing Tables for each system type were created using conservative monthly water balances, following methods described in the MAV Model LCA, 2014. Monthly 70<sup>th</sup> percentile rainfall and average evapotranspiration data for the Wye River and Separation Creek localities was sourced from SILO (Scientific Information for Land Owners) climate databases, which are managed by the Queensland Government. The SILO databases use accurate meteorological data collected throughout Australia over long time periods.

The Design Loading Rates (DLRs) and Design Irrigation Rates (DIRs) were taken from the current EPA Code of Practice. Where the Code of Practice has precluded use of a particular type of system on a certain soil type, it is shown as 'Not Applicable' for that soil type in the Sizing Tables. Where the evapotranspiration deficit requires unrealistically large land application areas for a particular system on a certain soil type, it is also shown as 'Not Applicable' for that soil type in the Sizing Tables. Detailed, site-specific LCAs and system designs would be required to further investigate the feasibility of systems deemed 'Not Applicable' in the sizing tables. Mitigation measures (such as importation of topsoil to appropriate depths in the land application area), may be required to sustainably achieve land application of effluent on constrained lots.

Sizing Tables for the Wye River and Separation Creek localities are provided below.

## 7o. General Conclusion

The lots within the localities have been assigned a Moderate or High Sensitivity Rating to sustainable DWM, with the majority of the towns assigned as High. Both Standard and Detailed LCAs will be required, with the use of System Sizing Tables deemed appropriate for the Standard LCAs. Particular attention needs to be directed towards ensuring that the DWM systems are sized based on the limiting soil horizon and that the systems selected are appropriate for steeper slopes with correct construction. The majority of lots within the region also have less than 1,500m<sup>2</sup> of useable area for DWM, which also does not exclude heavily vegetated areas. This will limit design options and it is imperative that the LCA DWM system design ensures that DWM is contained on-site. The area is also extensively considered to be prone to landslip; a geotechnical report by a suitably qualified person will need to be conducted to address this constraint.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Wye River and Separation Creek										
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only - Slopes or Sand Delta										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	5	5	4	3.5	3	N/A (Alternative Land Application System Required)			
Development Type	Daily (L/day)	Total min. irrigation area required for zero wet weather effluent storage (m <sup>2</sup> )†								
5 + bedroom residence	1,080	332		480	616	862				
4 bedroom residence	900	277		400	514	718				
1-3 bedroom residence	720	222		320	411	575				
<b>Note:</b> * irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DIR apply for slopes above 10% according to Table M2 of AS1547:2012										
† not including spacing or setbacks										
Conventional Absorption Trenches and Beds - Primary Treated Effluent - Slopes only (not Sand Delta)										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Mod Clay Loams (3 & 4)	Weak Clay Loams (4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	
	DLR (mm)	20*	20*	15	10	6	5	4	N/A (Alternative Land Application System Required)	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing or setbacks								
5 + bedroom residence	1,080	61		84	136	274	366	553		
4 bedroom residence	900	51		70	114	228	305	461		
1-3 bedroom residence	720	41		56	91	183	244	369		
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012										
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 5) and Secondary Treated Effluent only (Category 6) - Slopes only (not sand delta)										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Mod Clay Loams (4a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Massive Clay Loams (4c) and Mod & Weak Light Clays (5b, 5c)	Medium to Heavy Clays (6) - Secondary Effluent Only	
	DLR (mm)	20*	20*	15	10	12	8	5	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	61		84	136	109	182		366	
4 bedroom residence	900	51		70	114	91	152		305	
1-3 bedroom residence	720	41		56	91	73	121		244	
<b>Note:</b> * Gravels, Sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high watertable, including seasonal and perched watertables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012										
LPED Irrigation Systems - Primary or Secondary Treated Effluent - Slopes only (not Sand Delta)										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)			
	DIR (mm)	N/A (Alternative Land Application System Required)	4	3.5	3	N/A (Alternative Land Application System Required)	N/A (Alternative Land Application System Required)			
Development Type	Daily (L/day)		Total min. basal or 'wetted area'†							
5 + bedroom residence	1,080		553	743	1,133					
4 bedroom residence	900		461	620	944					
1-3 bedroom residence	720	369	496	755						
† required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks										
Wick Trenches and Beds - Secondary Treated Effluent Only - Slopes or Sand Delta										
	Soil Category	Gravels & Sands (1)	Sandy Loams (2) Loams (3) & High/Mod Clay Loams (4a,b)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	
	DLR (mm)	25	30	20	10	12	8	8	5	
Development Type	Daily (L/day)	Total min. basal or 'wetted area' required for zero wet weather storage (m <sup>2</sup> ) not including spacing & setbacks								
5 + bedroom residence	1,080	48	39	61	136	109		182	366	
4 bedroom residence	900	40	33	51	114	91		152	305	
1-3 bedroom residence	720	32	26	41	91	73		121	244	

## Appendix C

### Acceptable Monthly Climate Data

FOR ADOPTION

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Locality	Longitude	Latitude	70th Percentile Rainfall	Median Annual Wet Months	Average Rainfall	Average ET <sub>0</sub>	Rainfall January	ET <sub>0</sub> January	Rainfall February	ET <sub>0</sub> February	Rainfall March	ET <sub>0</sub> March	Rainfall April	ET <sub>0</sub> April	Rainfall May	ET <sub>0</sub> May	Rainfall June	ET <sub>0</sub> June	Rainfall July	ET <sub>0</sub> July	Rainfall August	ET <sub>0</sub> August	Rainfall September	ET <sub>0</sub> September	Rainfall October	ET <sub>0</sub> October	Rainfall November	ET <sub>0</sub> November	Rainfall December	ET <sub>0</sub> December
<b>Alvie (&amp; Warrion)</b>	143.5E	38.2S	641	5	588	928	32	143	31	118	35	97	48	59	53	36	57	24	58	28	66	40	61	59	61	87	47	106	40	130
<b>Barongarook</b>	143.6E	38.4S	1,007	7	929	863	44	133	41	110	52	91	73	54	86	34	98	22	108	26	106	37	99	55	97	81	69	98	57	121
Barramunga	143.7E	38.6S	1,561	8	1,432	790	65	122	63	100	82	82	119	50	133	30	167	20	168	23	170	34	149	50	133	75	99	91	84	112
<b>Barwon Downs</b>	143.8E	38.5S	1,048	7	969	846	44	129	44	106	55	88	77	54	90	33	110	22	109	25	117	37	101	55	92	81	69	97	59	119
<b>Beeac</b>	143.6E	38.2S	644	4.5	576	932	32	144	31	118	36	98	46	59	51	36	55	25	56	28	63	41	59	60	59	88	47	106	40	131
<b>Beech Forest<sup>1</sup></b>	143.56E	38.62S	2,046	11	1,748	804	88	121	91	100	114	83	179	51	208	32	242	21	233	25	244	36	213	53	187	77	134	93	114	112
Birregurra (& outskirts)	143.8E	38.3S	681	5	614	915	32	138	31	114	38	95	47	59	57	37	61	25	63	27	69	41	64	59	63	86	49	104	41	129
<b>Carlisle River</b>	143.4E	38.6S	1,257	7	1,161	860	53	129	50	106	67	88	94	55	120	35	123	24	135	27	143	40	118	57	107	83	81	98	69	118
Chapple Vale	143.3E	38.6S	1,105	7	1,038	890	49	131	46	108	61	91	85	58	105	38	109	26	121	29	128	43	105	60	94	85	74	101	62	121
Colac/ Elliminyt/ Irrewarra	143.6E	38.3S	730	5	658	909	34	140	33	115	39	95	53	58	61	35	66	24	68	27	76	40	67	58	67	86	52	103	43	128
<b>Cororooke and Coragulac</b>	143.5E	38.3S	740	5	665	911	34	140	33	115	39	95	54	58	61	36	67	24	69	27	78	40	69	58	68	86	51	104	43	128
Cressy	143.7E	38.1S	602	4	543	951	32	146	32	120	34	99	44	61	48	37	49	25	50	29	57	42	55	61	56	89	46	108	42	134
<b>Forrest</b>	143.7E	38.5S	980	6	910	865	42	131	41	108	51	89	72	55	85	34	101	23	102	26	115	39	95	56	86	83	66	99	54	121
<b>Gellibrand</b>	143.6E	38.5S	1,005	6	928	875	44	133	40	109	53	90	73	56	90	35	101	23	105	26	117	39	97	57	88	83	66	100	55	122
Hordern Vale	143.6E	38.8S	1,160	7	1,088	852	52	123	50	101	68	85	88	56	105	37	117	26	124	29	135	42	109	59	98	83	78	97	64	115
Johanna (& Glenaire)	143.3E	38.8S	1,016	6	951	881	45	126	43	103	58	88	79	58	96	39	108	28	109	31	118	45	94	61	83	85	64	100	54	118
<b>Kawarren</b>	143.5E	38.5S	1,052	7	955	886	44	133	41	110	54	91	76	57	93	36	102	24	109	27	120	40	99	58	90	84	68	101	58	123
<b>Kennett River</b>	143.9E	38.7S	981	6	897	897	43	129	45	106	57	90	71	58	85	39	91	28	98	32	110	44	93	61	84	87	65	102	54	121
Marengo	143.7E	38.8S	1,050	7	989	882	49	126	48	103	64	88	80	57	93	38	101	28	109	32	123	45	100	61	90	85	71	100	59	119
Pirron Yallock (& Larpent)	143.4E	38.3S	746	5	673	913	34	140	33	115	39	96	55	58	63	36	67	24	71	28	79	40	70	59	67	86	52	104	44	127
Skenes Creek North (& Tanybryn)	143.7E	38.7S	1,059	6	965	892	49	129	49	106	64	89	77	58	92	38	101	27	104	31	117	44	97	61	88	86	70	101	57	121
Wattle Hill	143.2E	38.8S	965	6	905	881	41	126	40	103	53	88	74	58	92	39	107	28	107	31	111	45	89	61	79	85	60	100	51	117
Wongarra & Sugarloaf	143.8E	38.7S	974	6	893	901	44	130	46	106	59	90	72	58	86	39	92	28	96	32	109	45	91	62	82	87	64	102	53	122
<b>Wyangtata<sup>2</sup></b>	143.45E	38.66S	2,279	11	1,947	804	108	121	108	100	125	83	192	51	232	32	231	22	266	25	274	36	221	52	207	77	172	93	142	112

70th Percentile rainfall System Sizing Tables completed for townships shown in bold font - Appendix B of Technical Document.  
 70th Percentile rainfall Water Balances NOT completed for localities shown in normal font - information included for LCA assessors and Council staff - for water balance as part of a LCA, the closest climate locality should be used.  
 The localities of Lavers Hill, Weeaprounah, Beech Forest, Wyangtata and Barham River Catchment do not have any suitable water balances as detailed in their respective Locality reports (Appendix B Technical Document) and Section 7 of the Technical Document. As part of a detailed or comprehensive LCA, site specific designs warrant the use of appropriate Otway Ridge rainfall data from the Bureau of Meteorology. 70th percentile rainfall data from BOM stations 90006<sup>1</sup> Beech Forest and 90087<sup>2</sup> Wyangtata stations was obtained and the closest BOM station must be used for any locality within the Otway Ridge (i.e. Weeaprounah uses Beech Forest and Lavers Hill uses Wyangtata). The closest SILO ET<sub>0</sub> data was used for both of these BOM stations Beech Forest and Wyangtata.

## Item: 9.2

# Consideration of the Public Toilet Strategy

<b>OFFICER</b>	James Myatt
<b>GENERAL MANAGER</b>	Ian Seuren
<b>DIVISION</b>	Community and Economy
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"><li>1. Public Toilet Strategy - Submissions [9.2.1 - 18 pages]</li><li>2. Public Toilet Strategy - Responses to Submissions [9.2.2 - 12 pages]</li><li>3. Public Toilet Strategy - For Adoption [9.2.3 - 76 pages]</li></ol>

## 1. PURPOSE

To present the Public Toilet Strategy for adoption following the public consultation period.

## 2. EXECUTIVE SUMMARY

At the 27 October 2021 Council meeting, Council resolved to exhibit the draft Colac Otway Shire Public Toilet Strategy (draft Strategy) for the purpose of seeking feedback from the community. The draft Strategy was publicly exhibited between 3 November and 15 December 2021. An extension to the submission date was approved for a number of submitters on request, with the final submission received on 9 February 2022. A total of 18 submissions were received with two submitters requesting to be heard at a Submissions Hearing held on 15 June 2022.

An overview of submissions is attached to this report (Attachment 1), with the submissions assessed against the draft Strategy and project scope. A number of changes were made as a result of community feedback (Attachment 2). Changes have been implemented with the final Colac Otway Shire Public Toilet Strategy (the Strategy) attached to this report for consideration by Council (Attachment 3).

The Strategy provides a framework for decision-making regarding the provision, management, and maintenance of public toilet facilities in the Colac Otway Shire. The Strategy also includes recommendations for asset rationalisation, addressing key gaps in the network and provides a framework to determine provision and management responsibilities between Council and other entities.

The Strategy sets the foundation of a future policy position, with the stated purpose: *'to focus Council investment in public toilet facilities across the Shire that provide a demonstrated community benefit,*

*including the local economy, to prioritise safety and accessibility for all users, and to advocate for and support the provision of facilities at key tourist destinations.'*

### 3. RECOMMENDATION

**That Council:**

- 1. Notes the Draft Public Toilet Strategy was exhibited in accordance with Council's resolution of 27 October 2021.**
- 2. Notes the submissions received on the Draft Public Toilet Strategy and thanks submitters for their feedback.**
- 3. Notes a summary of submissions and responses are presented, as per Attachment 1 and 2.**
- 4. Adopts the Public Toilet Strategy, as per Attachment 3.**

### 4. KEY INFORMATION

#### Background

On 24 October 2018, Council committed to develop a strategy for its public toilet network through the following resolution:

- 1. That Colac Otway Shire develop a public conveniences (toilet) strategy to address current insufficiencies and future needs, subject to the mid-year budget review. Such strategy should consider:**
  - 1.1. Condition report of current assets**
  - 1.2. Assessment of current use and future demand**
  - 1.3. Consideration of locations and placement of conveniences**
  - 1.4. Innovative design and technology and environmental issues**
  - 1.5. Cost recovery**
  - 1.6. Public convenience requirements within the municipality on publicly owned land.**
- 2. At the time of the budget review that current basic information is presented to Council.**

A preliminary document was prepared outlining draft principles for the Strategy and consultation was undertaken with the Department of Environment, Land, Water and Planning (DELWP), Parks Victoria, and the then Otway Coast Committee.

An audit of each toilet was undertaken and a consultant was engaged to prepare a detailed analysis, background paper and strategy.

#### Key findings from the Background Review Report

For the purpose of the Strategy a 'public toilet' is defined as 'a facility containing one or more rooms/cubicles with one or more toilets or urinals, which is available for use by the public without restriction during hours of operation'.

According to this definition there are currently 89 public toilet facilities in the Shire, with 43 that are Council owned/managed. They are primarily concentrated along roadways and in the urbanised areas

of Colac-Elliminyt and Apollo Bay. Other toilet managers include Parks Victoria, DELWP, and the Great Ocean Road Coast and Parks Authority (GORCAPA).

Most Council facilities are in poor to fair overall condition and have low levels of compliance with AS1428 DDA Disability Access requirements. Internal fit outs are inconsistent and aging, making it difficult to maintain high standards of cleanliness and hygiene. Siting and design do not generally adhere to Crime Prevention Through Environmental Design (CPTED) principles, with some facilities located in areas of minimal surveillance, with poorly lit internal areas and are subject to vandalism. Colac Otway Shire currently has no 'all gender' facilities or a Changing Places (accessible adult change) facility.

Overall provision is good within urban and regional areas in terms of the distribution of facilities, with very few gaps and some areas of oversupply.

Colac Otway Shire has a unique set of circumstances that influence the provision and management of public toilets, for example:

- Regional and international tourism drives high levels of visitation in some areas. This means higher than average operational and renewal costs for some sites.
- Low levels of use by specific users in remote locations eg: community halls.

### **Key recommendations in the strategy**

#### **Decision making framework**

With consideration of the unique influences described above, the Strategy incorporates a customised decision-making framework to use when planning, managing and advocating for the provision of public toilets.

The three main components of this framework are:

1. Use Typology
2. Service Levels
3. Six strategic decision-making principles

#### **USE TYPOLOGY**

Five use typologies were developed according to location and dominant user group, being:

1. **Campground:** facilities located in park/reserve campgrounds.
2. **Community Facilities:** facilities that are not restricted to certain hours or user groups and primarily serve the residential community of Colac Otway Shire.
3. **Community Facilities – Limited Use:** facilities typically co-located (often internally) with other social, commercial, and/or recreational facilities and primarily service user groups of these spaces, but are accessible to the general public during the hours that the facility is in use. May be managed by a Community Asset Committee (CAC).
4. **Visitor Amenities – Regional:** facilities typically located at, or on route to, highly trafficked tourism destinations, which primarily serve regional or international visitors to, or passing through, the Shire.
5. **Visitor Amenities – Local:** facilities located at Council owned or managed key destinations (such as the Old Beechy Rail Trail) and retail precincts, which primarily serve visitors coming to spend time within Colac Otway Shire.



This classification system is used throughout the Strategy to guide levels of provision, management responsibilities and models of management.

## **SERVICE LEVELS**

The Strategy recommends four levels of service, determined by factors such as demand, context, and use typology. They are:

1. Basic
2. Standard
3. Standard Plus
4. Premium

These service levels guide fixtures and fittings, design, size and other features. For example: a facility that has low levels of use in a remote location would typically be a 'Basic' facility which is 2-3 cubicles, with basic fit out and features, and modular design. A 'Premium' facility has high levels of use in a high profile or significant location and will include high levels of accessibility such as a Changing Places facility or family room and a customised design.

## **STRATEGIC DECISION-MAKING PRINCIPLES**

The network was assessed against each of the six principles with key findings and directions summarised below.

### **Principle 1: Adequate Provision**

*Public toilets are to be provided at key activity nodes with provision aligning to existing and anticipated demand, associated infrastructure, and the target user group(s). Provision will seek to maximise the utility of the existing network by identifying opportunities for refurbishment, expansion, consolidation, or alternative operational models of current facilities before recommending new facility locations.*

### **Principle 2 – Maximum Economic Benefit**

*Public toilets that primarily cater to the tourist market will be designed and managed in a manner that drives economic return to the local community and sited in locations that exhibit the highest levels of tourist visitation. Council will consider alternative operational models and opportunities for public-private partnerships through collaboration with other public authorities.*

### **Principle 3 - Environmentally Responsible**

*Public toilet design, siting and management will reflect organisational environmental objectives and consider impacts associated with the development or continuation of services at sensitive sites.*

### **Principle 4 - Quality and Safe Design**

*The safety of the community will be prioritised with facilities designed and sited to align with CPTED (Crime Prevention through Environmental Design) principles. New and refurbished facilities will be inviting, well designed and appropriate for their setting.*

### **Principle 5 - Equitable Access**

*Public toilets will be designed and redeveloped to consider equity and accessibility for all users. Council will achieve DDA (Disability Discrimination Act) compliance in all new and upgraded facilities.*

## **Principle 6 - Well Maintained and Hygienic**

*Public toilets will be maintained at a level that ensures Council's public toilet infrastructure and condition meet user expectations as well as public health and hygiene standards. Smart technology and other methods may be employed to monitor usage patterns and inform operational responses.*

### **High Priority Actions**

Generally, the trigger for replacement, upgrade, decommissioning or consolidation is facility condition and prioritisation and is influenced by demand and usage. The condition of public toilets is assessed every 3-4 years as part of cyclical building condition audits.

Based on the last condition assessments and facility audit undertaken for the development of this strategy in 2020, the following toilets have been identified as high priorities for short-term action:

1. Yeo Tennis Court Clubrooms – consider the future of the facilities in the context of the broader recreation and social infrastructure assessment currently underway.
2. Paradise Reserve – review the management model and undertake a demand assessment to determine an appropriate service level and scope of future investment.
3. Irrewillipe Recreation Reserve – investigate a Limited Use arrangement as part of a broader recreation facility redevelopment.
4. Lake Colac Foreshore Public Toilets – determine best location and service levels for future improvements, considering current and future demand generated by the precinct, future major playspace development and other improvements identified in the Lake Colac Foreshore Masterplan.
5. Forrest Caravan Park Toilets – further consultation with the Forrest community and other managing authorities to determine short and long term needs and options considering local restraints.
6. Barongarook Hall – consider the future of these facilities in the context of the broader recreation and social infrastructure assessment currently underway. Undertake a demand assessment to inform future improvements, if warranted. Transfer maintenance responsibility for the facility to Council in the short-term, in recognition that the facility services a broader user group.

Another high priority for further investigation is Pascoe Street temporary toilets. Based on the distribution gap analysis, it appears that these toilets are surplus to need, due to the proximity of public toilet facilities along the foreshore with a similar typology (i.e. Visitor Amenities – Regional). These toilets however, support not just the attraction of the foreshore itself but an element of local visitation, which is likely to provide an economic benefit to the Apollo Bay Commercial Area. Given the dual purpose of the toilets, further investigation should be undertaken to determine the need to construct permanent toilets in this location.

### **GORCAPA Visitor Facilities Strategy**

Council has been liaising with GORCAPA regarding the future strategic work they are looking to undertake. GORCAPA will be developing a Visitor Facilities Strategy which will include consideration of public toilets. The rationale behind developing one overarching piece of work is to ensure consistency in approach and product and to allow the Authority to establish a landscape classification system that would dictate the level of service required for a multitude of facilities, not just toilets. The project is expected to commence late 2022.

Council's Public Toilet Strategy would help inform the work GORCAPA will undertake on their visitor facilities strategy and accompanying design guidelines to ensure a level of consistency.

## 5. CONSIDERATIONS

### **Overarching Governance Principles (s(9)(2) LGA 2020)**

Priority is to be given to achieving the best outcomes for the municipal community, including future generations. The Strategy includes prioritisation to achieve the best community outcomes.

The economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks, is to be promoted. These are included in the Strategy's guiding principles.

The municipal community is to be engaged in strategic planning and strategic decision making. Extensive community and public agency consultation occurred in the development of the Strategy.

### **Policies and Relevant Law (s(9)(2)(a) LGA 2020)**

Relevant legislation was taken into consideration for the provision of public toilet infrastructure and is discussed in the Strategy (Attachment 3).

### **Environmental and Sustainability Implications (s(9)(2)(c) LGA 2020)**

Environmental and sustainability implications are discussed in the Strategy (Attachment 3). Principle 3 states that - *"Public toilet design, siting and management will reflect organisational environmental objectives and consider impacts associated with the development or continuation of services at sensitive sites."*

### **Community Engagement (s56 LGA 2020 and Council's Community Engagement Policy)**

The draft Strategy was publicly exhibited between 3 November and 15 December 2021. An extension to the submission date was approved for a number of submitters on request, with the final submission received on 9 February 2022. A total of 18 submissions were received with two submitters requesting to be heard at a Submissions Hearing held on 15 June 2022.

Attachment 1 to this report displays all submissions. The topics overlapped in multiple submissions, therefore attachment 2 addresses submission topics and outlines a number of changes to the Strategy that occurred as a result of submissions.

### **Public Transparency (s58 LGA 2020)**

The full decision-making process for adoption of the Strategy was carried out in a public forum including the decision to undertake the Strategy, the adoption of the Draft Strategy for community consultation, and consideration of the Strategy for adoption.

### **Alignment to Plans and Strategies**

Alignment to Council Plan 2021-2025:

Theme 1 - Strong and Resilient Community

Objective 3: Key infrastructure investment supports our economy and liveability

### **Financial Management (s101 Local Government Act 2020)**

Not applicable.

### **Service Performance (s106 Local Government Act 2020)**

The Strategy helps determine future service provision for public toilets located in the shire.

### **Risk Assessment**

Not applicable to this report.

### **Communication/Implementation**

If the Strategy is adopted, the following actions will occur:

1. A written response provided to all submitters.
2. The Strategy loaded to Council's website.
3. The Strategy will be allocated to a Council department for actioning.

### **Human Rights Charter**

Not applicable to this report.

### **Officer General or Material Interest**

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.

### **Options**

#### Option 1 – Adopt the Public Toilet Strategy

This option is recommended as the Strategy has undergone significant development to reach its final form to ensure it includes feedback and meets the expectations of public authorities and land managers, Council and the community.

#### Option 2 – Do not adopt the Public Toilet Strategy

This option is not recommended as this will delay implementation of the Strategy's actions. Officers do not believe any further development of the Strategy is required and it provides a balanced yet progressive approach to public toilet provision in the Colac Otway Shire.

## Colac Otway Shire Public Toilet Strategy – Public Submissions

Submission #	Submitter #	Submission Details
1	1	<p>One small item is that the Warrion Public Hall Toilets is a public toilet block which services predominantly through traffic. It is not managed by the asset committee but by Colac Otway Shire.</p> <p>We were told 10 or more years back that the toilets were earmarked for upgrade to have a DDA quality facility.</p>
2	1	<p>I'm not sure if I also mentioned that the Warrion hall Public Toilets are accessible 24/7 and that the cleaning is the responsibility of the shire.</p>
3	2	<p>Thank you for the opportunity to review the comprehensive Public Toilet strategy document.</p> <p>I am disappointed to discover that there is still no plan for a toilet on the Great Ocean Road between Apollo Bay and Lavers Hill, a distance of 50km. This is one of the longest stretches of GOR without a public toilet and to expect people to 'hold on' until Lavers Hill is naive at best.</p> <p>There has been much documented over the years about the amount of human faeces left by tourists at the Castle Cove lookout and to not address this now is a lost opportunity. Ref: <a href="https://colacherald.com.au/2012/08/human-waste-pollutes-great-ocean-road/">https://colacherald.com.au/2012/08/human-waste-pollutes-great-ocean-road/</a></p> <p>I understand that toilets are not appropriate at Castle Cove but there are many places close by where they could be placed.</p>
4	3	<p>As a shopper and user of Colac toilers for over 50 years we would like to comment on important points to us for consideration when rebuilding or renovating toilets situated in and around Colac.</p> <p>The foremost requirement is for the supply of plenty of fresh air particularly in the light of COVID spread. There is nothing worse than small, stuffy, smelly toilets after other people have used them.</p> <p>Our favourite toilets are the ones at the bottom of the Botanic Gardens. They are always airy from clean fresh air, clean and accessible. Coles toilets are very good too.</p> <p>We wish there were good ones at Woolworths. They are hidden away so we just don't use them. The toilets at the Memorial Square are airy and visible but often hard to get a park nearby. Some new ones at the side (Dennis St) or the East end (Hesse St) would be good.</p>

		<p>We could also do with another toilet block at the West End of Colac. Perhaps a good spot would be at the old high school. A welcome site for travellers and plenty of room.</p> <p>The most needy of repair and update are the toilets in the Hesse St next to the Senior Citizens building. They definitely need fresh air and larger cubicles. Good examples of toilets in our area are the Birregurra playground and the Barwon River playground Belmont.</p>
5	4	<p>The Kwarren public toilets located on Colac Lavers Hill Road is a well-used facility accessed on a daily basis by the local community, road travellers and visitors alike. They are close to the Loves Creek Picnic Ground and the Kwarren Tennis Courts which attract people of all ages including families with young children, women, young people and older adults. Kwarren Recreation Reserve Committee is aware of a number of issues and is pleased to bring these to the attention of council.</p>

Issue	Risk	Possible Solution
Absence of public toilet signage at tennis courts, Beechy Rail Trail and Colac Lavers Hill Road. People not familiar with the area and facilities do not know the toilets are available.	Pollution of nearby bushland from human waste and soiled paper products Individual stress and embarrassment Women not participating in local sport/activity	Place signage and directions to public toilets at Kawarren Tennis Club and on the Beechy Rail Trail opposite the toilets
The toilets are open 24hrs but are not lit internally at night	Risk of falls for users accessing the facility at night Users unable to have clear vision inside and outside the toilets Women often feel unsafe in poorly lit areas	There is power connected to the building. Install automatic lighting within the toilets and have exterior sensor lighting
No hand drying facility is available in the toilets	Wet hands promote bacterial growth and transmit germs	Install automatic hand dryers or paper towelling dispensers with rubbish bin to ensure toilet users can wash hands with soap and dry effectively
There is no formed pathway to the facility from the Beechy Rail Trail. People have to navigate over 15 metres of uneven sloped ground with a clay surface which is slippery in wet or damp conditions	Risk of slips and falls resulting in injury when accessing the facility Poor access for people of all ages with limited mobility Poor access for families with prams	Construct an all-weather pathway to connect the Beechy Rail Trail to the toilet facility
Only one sanitary disposal unit is available. Women using second cubicle must wait holding contaminated waste until the toilet with the sanitary unit is available for them to discard their waste	Individual stress and embarrassment while waiting to discard sanitary waste. Possible contamination of surfaces from in-properly discarded sanitary waste Ineffective hand-washing facilities once contaminated waste is discarded	Ensure both female toilets have a sanitary disposal unit available Install automatic hand dryers or paper towelling dispensers with rubbish bin for effective hand washing
Absence of baby change table	Infants and children in nappies are being changed on the toilet floor which is most unhygienic, uncomfortable for infant and caregiver and blocks access	Install a pull down baby change table and provide a wall dispenser of cleaning wipes for caregivers to clean the table after use

6	5	<p>The strategy is about 30% of a strategy as it only looks at half (or less) of the picture. OK so far as it goes but:</p> <ul style="list-style-type: none"> <li>- where is the analysis of demand at different locations - Marengo? Castle Cove?</li> <li>- where is the input of GORCAPA and assessment of the condition of GORCAPA facilities many of which are dire e.g. GORCAPA's AB golf club car park toilets which surely are not OH&amp;S compliant</li> </ul> <p>1) Was GORCAPA asked to engage in a joint toilet strategy? How did they respond?</p> <p>2) Will Council complete an analysis of demand across the Shire and assessment of condition of all Council and GORCAPA facilities before deciding upon priorities. This should be in conjunction with GORCAPA as much of the missing section is their responsibility</p> <p>3) The Pascoe St toilets in Apollo Bay are a regional facility not a local one. Council staff are well aware that those toilets were put there as they are next to the bus parking area for tourists so they are for the international tourists coming down from Melbourne.</p> <p>4) Resassuring to see that the well provisioned toilets at Memorial Sqaure in Colac are not listed as a priority for upgrade. The facilities there are adequate, though not wonderful. The demand analysis, which is missing, would identify that the coach traffic that mainly used these toilets has now gone so no need to upgrade for the next little while. Though a changing places facility would help for that specific group of people.</p> <p>5) Would be good to see Council doing a masterplan for Paradise reserve before deciding what need for toilets there is/isnt at that location.</p> <p>Interestingly its the only parks/gardens/leisure facility actually managed (or in fact neglected) by the Council in the coastal part of the Shire. All the Councils parks/gardens/leisure facility spending is in Colac!</p>
7	6	<p>When will the Colac Otway Shire stop crowing about providing more toilets than it needs to? But tell the truth about how many toilets provided permit all to use them. Not count ones with very restricted access to them that excludes many within the community from using them. Plus make certain if people are made to use them some protection from the weather is provided. There are multiple claimed facilities in Colac that are very restricted on who is able to use them. People who need mobility devices cannot take these up and down steep steps and some steps to the toilets are very narrow. I wish to be heard on this submission.</p>
8	6	<p>When will large permanent public toilets be provided by Colac Otway Shire in close proximity to large sporting facilities? When no sporting facilities exist anywhere near the only large accessible toilet facilities. Port-a-loos have a very major disadvantage. They have to be hired and their availability is due to the demand for them. In a region with much building and other infrastructure works going on, they are in big demand.</p>



9	6	<p>When will the Colac Otway Council stop boasting about having excess public toilets- but talk about the number that are easily accessible? While those that are at Lake Colac are not in a position that can be reached easily by people doing any business in the Colac township area or people from outside the immediate location. When in the entire Colac region we sometimes have a maximum of one facility available for use by the general public.</p>
10	7	<p>At the recent meeting of the Barongarook Hall Committee on November 16, 2021, the following points were made regarding the Colac Otway Shire's Draft Public Toilet Strategy:</p> <p>We endorse the classification of the toilets at the Barongarook Hall as both Visitor Amenities –Local and Community Facilities (page 23).</p> <p>We endorse the inclusion of the Barongarook Hall toilets on the list of high priorities for short term action (page 53). Replacement of what is a very outdated facility would be wonderful.</p> <p>On page 36, the Barongarook Hall toilets are listed as one of the facilities provided for the Old Beechy Rail Trail. We support their inclusion in the list of locations for public toilets as stated in P1 of the Strategic Recommendations Provision on page 56.</p> <p>We endorse the plan to transfer maintenance responsibility for the Barongarook Hall toilets to the Shire as listed in the action plan item 13, page 62 and hope that this includes provision of cleaning services for the toilets – at least once a week.</p> <p>We support the design considerations listed on page 43.</p> <p>We support the use of environmentally sustainable design principles – the Hall is hardly being used at the moment and is not generating income that can contribute to any power or water costs so minimising these is essential.</p> <p>The Hall is currently connected to the Colac town water supply. However Barwon Water advises that the water is not suitable for drinking as it has not been through the treatment plant. We have discussed the possibility of installing a rainwater tank for drinking water but this is beyond our financial capacity at this time.</p>
11	8	<p>We write in respect to the toilet at the Stodart Street, car park known to you as Ross's Point.</p> <p>The installation of this toilet was at our request, because at the time we had a lot of fisher persons using the fore shore in front of our home and unfortunately as there was no toilet in the near vicinity our garden became the local toilet both for urination and faecal matter. This situation became intolerable and we requested a small toilet be placed on the foreshore. As no one wanted in front of their home it fell to us to put our hand up and say yes locate it where it is.</p>

		<p>It has now come to the point where it is not often used for its proper purpose, but rather as a place where unsociable behaviour happens. In more recent years a light was installed at the request of Mr N Beechey as he felt the toilet was unsafe without a light.</p> <p>This light whilst effective to light the area (and our bedroom which is nearby), has made the location a 24 hour port of call for drug deals and other unsociable behaviour. While there is a sharps container in the toilet we frequently find used needles and packaging in the area and our adjoining garden. We are frequently disturbed at night as our bedroom overlooks the toilet, when disputes and fights start in the car park and as recently as two nights ago.</p> <p>We have had people in our garden and attempting to enter our home in the night which is frightening for us. We have had to install some temporary fencing to stop this problem.</p> <p>Where we live is a beautiful location, which is now spoilt by behaviour that occurs in the vicinity because of the toilet we requested as a community solution to a problem that occurred years ago.</p> <p>I believe that the draft plan has this toilet marked for demolition and that a new toilet be constructed at the Western Bay of the lake in the vicinity of the Yacht Club when funding is available. I believe that the required funding will not be in the near future</p> <p>We therefore request that the toilet at Ross's Point, (in front of our home) be decommissioned and demolished immediately.</p> <p>We would like to meet with you and any available Councillors in the near future to discuss our concerns.</p>
12	9	<p>It was good to be able to talk in person and discuss the Public toilets at Larpent. Larpent Hall toilets have been used as public toilets since the Hall was opened in 1954. Living near the Hall I see a lot of local and through traffic using the toilets. The log trucks, milk tankers, cattle and grain trucks, use Larpent Hall's toilets. Smaller businesses such as, plumbers, electricians, stock feed reps. vets, etc are also serviced by our toilets and that's without the general public. Access to the toilet for these large vehicles is quite safe, as the bitumen verge was extended on both sides of the road many years ago when the school was open. Our local C.F.A. shed is directly over the road and only has one toilet, if a major fire or event was to occur then Larpent Hall's toilets would be needed to service the C.F.A. members and others. Our Hall is the district's emergency assembly point. Not good if the toilets are locked, especially if the key holders are not available to open them up. There are no other public toilets between Colac and Camperdown that are so conveniently close to the Highway, also they service a very busy main secondary road going North and South, Larpent Road. These toilets at Larpent hall are very convenient and are used regularly by a lot of the local community. It would be disappointing to close them to the general public and we don't want a repeat of their protest when the Council closed them last time. Thank you for considering Larpent Hall's submission to keep the toilets open, and we hope for a positive outcome.</p>
13	9	<p>You asked for suggestions to improve the toilets at the Hall, just a couple of ideas, a good clean to remove the bird droppings from the interior, and floor, also to remove the moss from the cement, during winter when it gets slippery. The gutter need a clean and a</p>

		fresh coat of paint especially inside the men's where the birds roost on the door. A suggestion, a hand dryer would be great, I did put hand towels there but I don't any more.
14	10	<p>The Colac Otway Shire Council placed the "Public toilet strategy" draft for public comments. I will focus my comments on underlying principles and Forrest where I live.</p> <p><b>1-</b> The public toilet strategy need to be considered in connection with affluent treatment and water supply. This 'separate silos' mentality reflects negatively on the desired outcome. A possible core problem might be the "terms of Reference: TOR" limiting the consultant's work.</p> <p><b>2-</b> Despite the fact that G21 included Forrest in the "high growth belt", the public toilet strategy draft disregarded this fact as Forrest did not appear in the HIGH priority list of improvements. Prioritising did not include any data or statistics to substantiate the categorisation. In addition, the "facilities audit" failed to include the "community hub" on Grant St.</p> <p><b>SOLUTION: A-</b> Consultant should rewrite the report to include these two critical aspects.  <b>B-</b> TOR should not be written solely by Council officers and should include community consultation before final approval in a Council meeting.</p> <p><b>SOLUTION: A-</b> Consultant's contract should include communicating with the community.  <b>B-</b> Evaluate the criteria used to prioritise facilities, present data basis for categorisation and add missing facility.</p> <p><b>3-</b> The "public" toilet facility at the Forrest Caravan Park is obscured from street view and existing signage fails to provide a clear guide. In addition the facility does not serve main road passing traffic. A major flaw of the plan is that it failed to institute the obvious need for a public toilet facility on Grant St.</p> <p><b>SOLUTION: A-</b> Include a new public toilet facility on Grant St. Even the qualitative assessment framework of the strategy points to that option.  <b>B- Improve the quality of signage in Forrest to clearly direct people.</b></p> <p><b>4-</b> The "public" toilet facility at the Forrest Hall is NOT public. Moreover, the septic system is old and struggling, even with the current limited load.  <b>SOLUTION: A-</b> Remove the facility at the Hall from the listing until proper assessment is made with regard to access and the septic system.  <b>B-</b> Explore the possibility of constructing a public toilet facility at the space next to the Forrest Hall.</p> <p><b>5-</b> The strategy draft states "<i>The relative priority of actions is determined according to the following criteria</i>". The listed criteria have no data determinants to quantify priorities. Additionally "high" priority is listed for unknown reason to be 1-3 years.  <b>SOLUTION: A-</b> Factors determining the prioritisation need to be quantified and not left qualitative and subjective.  <b>B-</b> Explain the parameters that determined the duration for priority categories. Quantification is required.</p>

15	11	<p>Of the six public toilets in the Forrest area, (plus a seventh one at the community hub-47 Grant Street), only four have unlimited access, and only two of these are in town, namely the Forrest MTB trailhead and the caravan park. The toilet at the hall is restricted to when the hall is open, and the toilet at the community hub is similar, but also has no level access. All of these toilets are constrained in their usage by having no sewerage connection.</p> <p>The toilets at both the hall and the hub are modern and, I believe, DDA compliant. However, both would require alterations to their respective buildings to allow them unlimited access by the public. Furthermore, the wastewater treatment systems to both toilets may need upgrading to cope with the peak summer demand which can run to more than a hundred people per day. As the council has rightly identified that public toilets in Forrest are a high priority, I think it unlikely that these upgrades would be planned for, costed, and achieved within the 1-3 year time frame.</p> <p>However, the council had planned to upgrade the wastewater treatment of the caravan park toilets, prior to covid. Assuming that the plans and funding are still in place and therefore 'shovel ready', this would be the quickest way to achieve an increase in wastewater treatment capacity. The plans also allowed for an opening up of these toilets to Station Street, thereby making them more visible and easier to find. With the addition of adequate directional signage, both in Station Street and on Grant Street, the caravan park toilets could serve as Forrest's public toilet in the short term. Unfortunately, with the summer break almost upon us, this cannot be achieved this year.</p> <p>In the longer term, things are uncertain, as both the planned town wide wastewater system and Gateway project will affect future options. It is because of this that I believe that the caravan park upgrade is the quickest and most cost effective way forward.</p>
16	12	<p>Please find a joint response on behalf the Joint response Forrest &amp; District Community Group (FDCG)   Forrest Public Reserves Committee (FPRC) to points &amp; priorities detailed in the Colac Otway Draft Public Toilet Strategy.</p> <p>Our comments refer specifically to the township of Forrest.</p> <p>The FDCG and the Forrest Public Reserves Committee see Forrest as a HIGH and URGENT priority, and would like to see each of these points addresses in the final DRAFT.</p> <p>We would welcome a meeting with Council Officers or the Consultants to address these points.</p> <p>Page 9 <i>Figure 3: Forrest Caravan Park Public Toilets image</i> by definition is a campground facility</p> <p>Page 10 <i>Figure 5: Forrest Caravan Park Disabled Toilets image</i> is misleading and does not adequately illustrate the view from the street for users of this facility. We have attached a street view image, and wayfinding / signage information which shows how difficult this public toilet is to locate.</p> <p>Page 14. Legislative and Policy frameworks are largely dated and do not reflect the growth in tourism across the past 10-years or the post-COVID domestic tourism forecasts.</p> <p>Page 45. TABLE 5. Whilst the Strategy speaks extensively of cubicle designs and fittings, there is little consideration given to where the effluent goes beyond the 'bums on seats' Discussions of fittings / fixtures, pg. 28 is given more prominence that where the waste goes.</p> <p>Water treatment via septic system 28 / Water supply via main system 34</p>

	<p><b>This is a significant short fall understanding how to address the infrastructure needs and the resulting 10-year action plan. The DRAFT should not be approved until this matter is considered in the report with an associated action plan.</b></p> <p>Page 56. Strategic Recommendations Provision Priority 1.</p> <ul style="list-style-type: none"> <li>• Local tourist destinations including: key stops along the Old Beechy Rail Trail (Barongarook Hall, Colac Performing Arts &amp; Cultural Centre, Kawarren, Gellibrand and Beech Forest), Forrest, 15 Birregurra, Lavers Hill, Paradise Reserve and at small retail or commercial precincts (which serve both the local community and local tourism)</li> </ul> <p>Whilst we support and endorse the inclusion of recommended improvements for Forrest, we urge that the report considers the reconfiguration of an existing facility in Forrest as well as improvements to the current facility at the Caravan Park. Forrest Caravan Park Toilets which are poorly located and underutilised, in comparison to visitation to the town.</p> <p>Page 61. Action Plan 11 Forrest Caravan Park Investigate relocation and construction of a shared use facility at the Forrest Caravan Park Toilets in accordance with the recommendations in the Forrest Common Masterplan 2019 HIGH. The current public toilets are poorly located. The FDCG and the Forrest Public Assets Committee support reconfiguring the toilets at the Forrest Hall as additional public toilets, until a permanent sewerage solution is achieved in Forrest. This would require an investment from Council for signage, regular emptying of septic and cleaning. Future development of the proposed Forrest Gateway Project will also add to a more permanent solution.</p> <p>Page 74. Forrest Common Masterplan (2019) we support the development of the Forrest Common, and an 2<sup>nd</sup> upgraded joint use Public Toilet facility at the current Forrest Caravan Park Public Toilet location, but it is essential to secure a location on the main street (Grant Street) in order to address the visitor amenity short fall for our highly trafficked tourism destinations that primarily serve regional visitors to, or passing through, the Shire.</p> <p>Page 60. Action Plan, there are many, many high priorities included within the action list. Given the number or high priorities we see it unlikely that many will be addressed within the 1-3 year time frame. The FDCG and the Forrest Public Reserves Committee see Forrest as a HIGH and URGENT priority and recommend COS consider entering into a Shared Service Agreement (SSA) for the following asset as a short-term solution 1 year. 42 Forrest Public Hall Crown land Committee of Management High priority / short term 1 - 3 years Medium term 3 - 7 years Long term* 7+ years 16</p>
--	--

		Missing assets are illustrated below in RED, EXISTING NETWORK					
MAP REF.	NAME	OWNERSHIP	MANAGEMENT	USE TYPOLOGY	CURRENT SERVICE LEVEL	CONDITION	
40	Forrest Caravan Park	Colac Otway Shire	Colac Otway Shire	Community Facilities		Poor	
41	Forrest Mountain bike Trailhead	Crown land DELWP	Visitor Amenities	Regional			
42	Forrest Public Hall	Crown land	Committee of Management	Community Facilities - Limited Use			
43	Forrest Recreation Reserve	Crown land DELWP	Committee of Management	Community Facilities - Limited Use			
57	Lake Elizabeth Campground	Crown land	Parks Victoria	Campground			
82	West Barwon Reservoir	Barwon Water	Barwon Water	Visitor Amenities - Local		Well maintained	
85	Yaugher Mountainbike Trailhead	Crown land DELWP	Visitor Amenities	Regional			
<b>MISSING</b>	<b>Forrest Community Hub, Forrest Neighbourhood House</b>	<b>Crown land DELWP</b>	<b>Committee of Management</b>	<b>Community Facilities - Limited Use</b>			
<b>MISSING</b>	<b>Forrest Community Hub, Grasstree Building</b>	<b>Crown Land DELWP</b>	<b>Committee of Management</b>	<b>Community Facilities- Limited use</b>			

17	13	<p>From a Forrest resident point of view, there seems to be lots of toilets – just look at the map! - but everyone from businesses to visitors to the community complain about the lack of decent facilities with adequate signage.</p> <p>The combined caravan park/public toilet facility as indicated is in desperate need of upgrading and is almost completely invisible to the passing visitor. I struggle to imagine how you could increase visitation. Most people think it is the caravan park</p>
----	----	---

	<p>and will not enter it. This needs to be completely rethought. Even then passers by rarely venture off Grant St. While the Public Hall has long been considered an option by the community for public toilets, I have serious doubts about its appropriateness. Having worked out of the hall from 2010-17 I have seen the increase of traffic on the unsealed side road next to the school, with poor signage and the elephant in the room - the lack of an efficient waste water system means that the significant upgrades required to both the roads, grounds and building seem unfeasible.</p> <p>Water runoff to neighbouring properties especially during winter is a real problem that public toilets would only exacerbate. The public toilet at the Southern Trail head is barely mentioned – is that because it is a DELWP facility or because it is soooo gross! After a busy day of bike traffic and passers-by stopping for a pee, you don't want to go within sniffing distance! Not to mention the rogue toilet paper which blows out under the walls and flows all around the place. To allow a drop toilet so close to township seems quite remarkable!</p> <p>This facility is slated for upgrade in the Forrest MTB upgrade strategy also not mentioned in the document. Considering Parks and DELWP have many public toilet facilities across the shire, a Public Toilet Strategy needs to consider them. Without it you don't get the whole picture. When this facility is upgraded it may reduce the need for other upgrades.</p> <p>The Community Reserve (also known as the Community Hub) at 47-49 Grant Street (Former DELWP site) is now the new centre of town for the community. The Neighbourhood House, CFA and Historical Society and jointly housed on the site along with a purpose built amenities facility which includes showers and toilets including accessible toilets. This however is also run by a DELWP CoM and is not included for discussion in the document.</p> <p>The proposed Gateway project for the site includes public toilets but it could be years away so a feasible short(ish) term option could be the amenities building already on the site.</p> <p>Point by point for consideration:</p> <p>3.4.1 Adequate Provision Pg 36</p> <p>Forrest: receives significant mountainbike tourism and visitors to the nearby Otway Forest Park and Great Otway National Park.</p> <p><b><i>Forrest also has increasing overnight stays and is a destination of it's own for the Brewery, Platypi Chocolatery with the increased traffic and demands on public facilities.</i></b></p> <p>2.2 Pg 14 Legislative and Policy Framework</p> <p><b><i>No mention of reference to the Forrest &amp; District Community Plan – Toward 2030.</i></b></p> <p><b><i>This was an extensive profession publication written by and for the Forrest Community in conjunction with Deakin University and should be included for consideration as an indepth and up to date view of community need and aspirations for the future of the township. 19</i></b></p> <p>Pg 61 Action Plan</p>
--	--

		<p><b>11. Forrest Caravan Park</b>  Investigate relocation and construction of a shared use facility at the Forrest Caravan Park Toilets in accordance with the recommendations in the Forrest Common Masterplan 2019.  <b><i>I would be very supportive of this if I could find the Forrest Common Masterplan 2019 on the Council website to refer to.</i></b>  Pg 70 Audit of existing facilities  <b><i>Include Forrest Community Reserve (Also known as the Community Hub) @ 47-49 Grant Street. Crown Land, DEWLP CoM, Community Facilities - Limited Use</i></b>  <b><i>This site includes the CFA amenities building, Neighbourhood House facilities with toilets and an amenities building with showers and accessible toilets for hire, which could be considered for a possible public toilet application on Grant Street.</i></b>  Pg 74 Policy Review  Forrest Common Masterplan (2019)  <b><i>The only document available on Council website was the 2018 draft which had no mention of toilets.</i></b>  Birregurra Structure Plan (2013)  <b><i>Improvements to toilets to include accessible toilets complete – septic was not upgraded.</i></b>  Forrest Structure Plan (2011)  <b><i>This item was not completed</i></b>  <b><i>No reference to the Forrest &amp; District Community Plan – Toward 2030.</i></b>  <b><i>This community document contains references to the requests for improved public toilets, descriptions and preferred sitings Pg. 7 38, 39, 40, 47, 48, 64</i></b></p>
18	14	<p>Please find response on behalf of our small business located in the main street (Grant Street) a major tourism and transport route to Apollo Bay and the Great Ocean Road.  Our comments refer specifically to the township of Forrest and the reliance on our business to provide a public toilet facility in the main street.  We commenced trading in Nov 2010, across the past 11 years, there has never been a day when we open the doors that a visitor to Forrest doesn't asks 'can I just use the toilet?' or 'I'm just here to use the toilet!' or 'where are the public toilets?'. For 10+ years I have spent hours of volunteer time talking about and advocating for better amenities for Forrest, adequate public toilets in the main street and a waste water solution to adequately address the infrastructure needs of township of Forrest. The DRAFT Public Toilet Strategy fails to provide a clear path to address the urgent need for improvements to Public Toilets in Forrest and the associated wastewater infrastructure required to facilitate a Public Toilet solution.  The current public toilet facilities are poorly located, difficult to find, and have non-compliant wastewater infrastructure to support any growth in use of this facility.  The DRAFT strategy doesn't provide any perspective on how to deal with the effluent waste generated from a Public Toilet.  The DRAFT strategy doesn't provide any perspective on the current reliance on our private facility to service the town of Forrest. We would welcome the installation of counters across the town on public and private facilities to provide evidence of this impact.</p>



		<p>The high number of proprieties detailed within the report illustrate the extent of the problem across the shire. Given the number of HIGH priorities, how will Council implement the recommendations within the report in the given timeframes? We look forward to a revision of the report to better illustrate the extent of the problem within the town of Forrest.</p>
19	15	<p>Great Ocean Road Coast and Parks Authority</p> <p>The Authority recommend the Shire consider the application of principle 2 through a broader view of community usage and net community benefit and the role of council, with reflection on including business and broad community benefit.</p> <p>Regarding maximum community benefit parameters, excluding commercial facilities or those facilities that service particular built assets (e.g., MTB tracks), the Authority suggest the Shire will always have a stake in the operations of facilities on the foreshore environments (i.e., Kennett and Wye River) unless there is an alternative provision.</p> <p>The inclusion of the shared service models recognises the efficiencies and values of strong partnerships. It is important moving forward that the strategy recognises that this relationship is mutual with the service model applied consistently. The current strategy as it stands only considers council assets.</p> <p>The provision of long stay infrastructure such as BBQ's, picnic sheltered etc., should be accompanied by toilet infrastructure. The Authority recommends the strategy include and reflect stay times.</p> <p>The Authority support the walkable catchment from key nodes be applied at 400m.</p> <p>The Authority recommends that the Shire continues to align with the principles of decreased and consolidated footprints (especially where limited community space is available) where appropriate e.g., Marengo shared facility option.</p> <p>Any recommendation made within the Strategy needs to reflect the outcomes of existing master plans, including the Community Infrastructure Plan i.e., Apollo Bay VIC toilet.</p> <p>The inclusion of smart technology within the design standards would ensure a well-rounded and considered strategy and active monitoring.</p>
20	16	<p>Further to our discussion to consider the Shires Public toilet Strategy. As we outlined to yourselves, after inspection by members of our Committee of the Public toilets at Cororooke, Meredith Park and Colac Lake we felt our Toilets are adequate with the present set up of cleaning twice weekly, certainly the addition of an ambient cubicle would be greatly appreciated as the disability services</p>

		<p>use the Reserve weekly for exercise, Perhaps a makeover of the present toilets by rendering or painting would improve their presentation. From what we understand any additional toilets at the Reserve facilities would require the installation of an Inviro Sep system maybe this is our first priority to provide for future Extensions.</p> <p>Thanks for the opportunity to provide our input we wish you every success with your Project.</p> <p>Committee of Management Irrewillipe Recreation Reserve</p>
21	17	<p>In response to the Public Toilets Strategy.</p> <p>The Lavers Hill and District Progress Association membership have asked me to contact you about the public toilets strategy, particularly in relation to Lavers Hill. We find the report concerning.</p> <p>The report suggests “consolidating” the two public toilets in Lavers Hill. We take this to mean closing one of them. The report reaches the conclusion that “consolidation” is a good idea based on analysis of the usage of the toilets, but this analysis was done during Covid-19 restrictions, so the observed usage levels of the public toilets in Lavers Hill will not reflect the usage patterns in “normal” times.</p> <p>Lavers Hill gets a lot of tourist traffic from people driving along one of the State’s greatest tourist roads, the Great Ocean Road. Heading West, It is about an hour’s drive from Apollo Bay, and there are no public toilets at all along that stretch of the Great Ocean Road, so most tourists are going to need a toilet stop. Heading East, it is a similar story, with Lavers Hill having the first public toilets on the Great Ocean Road since the 12 Apostles. This means traffic in both directions places high demands on the toilets at Lavers Hill. In normal times, the toilets get heavy use all year round, from December until Easter in particular the toilets are “hammered” and are used way beyond their capacity.</p> <p>The current public toilets are woefully inadequate. The most heavily used toilet block is adjacent to the roundabout. It gets lots of traffic from tourists stopping to “stretch their legs” after the long drive from Apollo Bay, having possibly stopped at the tourist spots of Maits Rest and Castle Cove lookout, both places having no public toilets at all. The roundabout also has two public bus stops, generating more usage. Many tourist buses stop there, some of the bus customers go to the shop and can use toilets inside, but many just go from bus to public toilet and back to the bus. This leads to people having to queue along the footpath to use the toilets. The heavy use of this small toilet block, in our town that has no reticulated water and no</p>

		<p>sewerage system, means the toilets regularly run out of water and the waste disposal system almost never copes with the demands placed on it. In summer the problem is excessive usage, in winter the problem is high rainfall making the soil non-absorbent. Lavers Hill is the wettest place in Victoria, with over 2 metres a year rainfall. The current toilet block gets some water from its own roof but most of its water supply comes from a spring in the gully behind – whether that water is safe or contaminated by effluent from the toilets is unclear. The waste from the toilets, after passing through a rudimentary treatment system, is discharged to an area behind the toilet block. This area slopes down to a gully that becomes a small creek. The area absolutely reeks in Summer due to the poorly treated effluent flowing down there. The toilet block is also poorly ventilated and usually stinks inside. At least this problem could be easily and cheaply fixed by fitting a permanently-on exhaust fan in each of the three sections – Male, Female and Disabled. This toilet block is so inadequate, it should probably be replaced with a new, larger one with a better disposal system. Being on the north of the Great Ocean Road, its disposal field would be under the jurisdiction of Wannon Water, which might make it difficult to get approval to increase the size of the block and upgrade the waste disposal system. One possibility is to move the toilet block to the South side of the Great Ocean Road, in the road reserve. This site may however have its own limitations, with no obvious water supply for a start, and a risk to pedestrian safety caused by people having to cross the busy road to get to the toilet. At the very least, this existing toilet block next to the roundabout needs improved water supply, improved effluent treatment to the standard required of new houses in the area, better ventilation and improved maintenance.</p> <p>The second public toilet in Lavers Hill is at the side of the Lavers Hill Hall. It too gets heavy use, especially from caravanners who find it difficult to park near the roundabout, and from people coming to Lavers Hill from the West. It also services people who use the picnic area and public barbecue behind the hall, and local people using the waste drop off facility. The hall car park is regularly used as a camping place by people in campervans, there used to be (small, inadequate) signs prohibiting camping there but these seem to have disappeared. This toilet is thus often used by people staying overnight in campervans and caravans. This toilet gets its water supply from tanks behind the hall, but the tanks also supply the hall's internal toilets and kitchen, and are used by the CFA for firefighting, so there is little or no scope to increase the size of this toilet facility.</p> <p>The septic tank behind the hall is also inadequate, being the original decades-old system from a long-since-demolished open air toilet block behind the hall. It was never upgraded when the current hall toilets were built. The existing septic system creates a permanent boggy patch behind the hall, though not as bad as the one behind the roundabout toilets. This toilet is essential to take some of the load off the roundabout toilets, and to provide an alternative when the roundabout toilets run out of water or get blocked up, which they regularly do. This toilet mainly needs</p>
--	--	---

	<p>some basic maintenance such as painting the walls and trim, as well as upgrading the septic system. The door when originally constructed over 10 years ago didn't comply with disabled access requirements, and had to have its hinges reversed. When the door frame was modified it was never repainted, so the doorway has bare pink filler on the frame, it looks shoddy but could easily be brought up to standard with some basic maintenance.</p> <p>The next matter of concern is signage. Many tourists passing through seem unaware of the existence of these toilets and end up using local gardens and open space as outdoor toilets. Areas where local people like to exercise or walk the dog are often polluted with used toilet paper right next to the path. This is not unusual, it is in fact a VERY frequent occurrence. At the time of writing this document, the Council-owned "gravel dump" near the Melba Gully Road corner has three separate places where poo and paper have been left in the last few days. Part of the issue is a lack of clear signage, especially when approaching Lavers Hill from the West. Parks Vic has an excellent toilet block at Melba Gully, but there is no sign at the intersection of Great Ocean Road and Melba Gully Road directing tourists down to the toilets at Melba Gully park. It should have a prominent blue-and-white toilet sign, pointing down Melba Gully road. This would help to get people to use toilets instead of crapping outdoors on a public path, and would ease the load on Lavers Hill's overused public toilets in town. The hall toilet also needs clearer, more prominent signage at the road edge.</p> <p>On a more general note, the report seems to assume the need for toilets in a place to coincide with money being generated at that place, possibly to help fund the toilets. This is a false connection and would lead to council failing to provide toilets where they are needed. Lavers Hill is a good example. Many tourists "doing" the Great Ocean Road heading west will have stopped to eat in Apollo Bay. By the time they get to Lavers Hill they will have been in a bus or car for about an hour, or more if they stopped at Mait's Rest or Castle Cove where there are, again, no toilets. By the time they get to Lavers Hill, they need a toilet stop. They might have left some money in Apollo Bay when purchasing lunch, but it is Lavers Hill where they need the toilet. Providing toilets is an essential part of providing for tourism in a region, and providing good clean toilets is part of creating a pleasant experience for the visitors that drive the local economy.</p> <p>Lavers Hill and District Progress Association is concerned that Council appears to want to cut back on toilets at Lavers Hill. They need upgrades, not cutbacks.</p>
--	---

22	18	<p>On behalf of the committee and members of the Colac Yacht Club I would like to submit this submission against the proposal of public toilets to be located in the vicinity known as Western Bay Park. This proposal was listed on the Colac Otway Shire website however it disappeared from the site prior to the submission closure time and date.</p> <p>I would however like to thank you and Nicole for your time to meet in person on site to discuss our concerns.</p> <p>From the information you provided the toilet draft plan and location of the proposed toilets was as per the 2016-2026 Lake Colac Foreshore Master Plan. In this submission I will also refer to the masterplan as this also has a bearing on our submission.</p> <p>Currently there is a single toilet at the end of Stoddart Street, below the residential houses adjacent to the carpark on the foreshore. This toilet has been at this location for many years and was placed there to accommodate those either fishing or walking in the area. To my knowledge this has met the requirements of those wishing to use the facility.</p> <p>The toilet draft plan in association with the masterplan mentions that there be a consolidation of existing buildings so that one facility would accommodate yachting, angling, sea scouts and other community activities. Refer Zone 3 item 12, Stoddard street east to Armstrong street. Page 3 of the foreshore masterplan.</p> <p>This type of joint building would not work as each group as special needs. Western Bay is very shallow due to silt build up from strong northerly winds. With the contour of the land with surrounding houses when strong winds blow from a southerly or westerly direction the wind has no access to the water's edge to blow the silt out of the bay. With the shallow water it makes it extremely hard to launch some of our craft and would not be suitable for those anglers wishing to launch motor craft or for those wishing to use row boats as per the rowing club. We offer our members both undercover and outside storage for their boats. At the moment we are nearly at full capacity and would love to expand so a joint development would be huge to accommodate every group. In all our travels to other clubs competing around Australia we have not come across something as proposed in the masterplan, it simply would not work.</p> <p>Previous years we have had discussions with the Sea Scouts as a possible joint venture however their association will not allow a joint venture where we have a liquor licence. Our liquor licence is our main source of income. Our new lease agreement with the Colac Otway Shire stipulates that our club is responsible for all maintenance and repairs. This is something we have taken on board spending thousands of dollars improving the facility for our own members and community groups who use from time to time.</p> <p>On page 20 of the masterplan there is an overview of zone 3. In this overview it states" The yachting club has not conducted any significant yachting activities on the lake for the last 8 years" This is easily answered as the lake was fully dry in 2009 and again in 2016. The club put in a submission along with another 1000 submissions against Barwon Water having their licence revoked from pumping out of the Barwon Downs aquifer. In the period since 2018 our sailing season has commenced each year on Lake Colac and we have been able to sail up until Christmas due to low water levels. This year we have sailed until up to current time and have successfully ran the RL24 national titles. We have also since 2018 introduced our learn to sail program for young children as well as adults. This has been a huge success and has seen our member numbers grow.</p> <p>In my 23 year's association with the club I have only had one couple ask where the public toilets are based and was able to point them in the right direction. 27</p>
----	----	--

		<p>We are totally against a relocation of the current toilet facility to Western Bay Park. Has council done due diligence in the following in regards the toilet at the east end of Stoddard street,</p> <p>a) How many times a day is the current toilet facility being used?</p> <p>b) If there is anti-social behaviour after hours has council considered locking the doors, say at 6pm.</p> <p>c) Has council spoken with the local police to see if they have concerns or had a high number of incidents relating to anti-social behaviour</p> <p>If the toilet at the east end of Stoddard street has an issue with anti-social behaviour, attracts the likes of paedophiles then under no circumstances do we at the yacht club or even those affiliated with the Sea Scouts wish to have those same issues moved to Western Bay Park where there are a number of children associated with the two organizations as well as the playground.</p> <p>Thank you for accepting this submission on behalf of the Colac Yacht Club and hope Council will respond positively to our submission.</p>
--	--	--

### Response to Submissions – Colac Otway Shire Public Toilet Strategy

Theme / Topic	Submitter #	Summary of issues / requests	Officer recommendations (P reference in Strategy)
Amenity of public toilets	3, 6	<p>Essential requirements to improve the amenity of public toilets include:</p> <ul style="list-style-type: none"> <li>• Fresh air – becoming more important with the COVID-19 pandemic</li> <li>• Good visibility</li> <li>• Convenient car parking</li> <li>• Weather protection</li> <li>• Good public toilet examples include Birregurra Playground and Barwon River Playground in Belmont.</li> </ul>	<p>Agreed. Matters mostly covered in the Strategy.</p> <p><b>Changes to final Strategy:</b></p> <ul style="list-style-type: none"> <li>• P48 – line added to emphasise the importance of ventilation not just for sustainable design and odour elimination but also as an important element to maintain hygiene in a Post Covid environment.</li> <li>• P66 – Adequate parking and disability access nearby added to the Assessment Frameworks when considering new or upgrading existing facilities.</li> </ul>
Design of new and upgraded toilets	7, 15	<ul style="list-style-type: none"> <li>• Support for the design considerations set out on page 43.</li> <li>• Support for the environmentally sustainable design principles listed.</li> <li>• The inclusion of smart technology within the design standards would ensure a well rounded strategy and active monitoring.</li> </ul>	<p>Noted.</p> <p>Smart technology for toilet provision can range from things such as automated flushing and notification when toilet rolls are empty to usage monitoring and content analytics. The Strategy recommends that Council invest in smart technology to enable data collection about toilet demand and usage as a high priority.</p> <p><b>No change to the Strategy</b></p>
Accessibility	6	<ul style="list-style-type: none"> <li>• Many Council managed public toilets are not accessible and have very restricted access.</li> <li>• People who need mobility devices cannot take them up and down steep and narrow steps.</li> </ul>	<p>It is acknowledged that many existing Council facilities do not meet current standards in regard to DDA compliance or in allowing universal access.</p> <p>The Strategy recommends that all new and upgraded facilities include design standards to achieve DDA compliance (compulsory), safety principles and universal design (where possible).</p> <p><b>No change to the Strategy</b></p>

Provision of toilets on non-Council owned land	5, 13	<ul style="list-style-type: none"> <li>• The draft Strategy has not adequately considered the provision of toilets on non-Council owned land.</li> <li>• Need to consider all Parks and DELWP toilets.</li> </ul>	<p>Parks Vic, DELWP and the Great Ocean Road Coast and Parks Authority (GORCAPA) were all consulted in the development of the Strategy. Each of these agencies provided input on the location and management arrangements for these toilets. The Strategy considered non-Council owned/managed toilets as part of the network of toilets available throughout Colac Otway Shire and in particular they have been considered in the analysis of adequate provision.</p> <p>The scope of the project did not include an assessment of the condition or cleanliness of non-Council managed toilets or a demand analysis to determine whether the size of existing facilities meets demand. As such, the Strategy does not make recommendations on these matters.</p> <p>GORCAPA officers have advised that GORCAPA is currently in the early stages of developing a Public Toilet Strategy for areas of land under GORCAPA management which will consider Council's Strategy.</p> <p><b>No change to the Strategy</b></p>
Great Ocean Road Coast and Parks Authority & Maximum Economic Benefit Principle	15, 17	<ul style="list-style-type: none"> <li>• GORCAPA request a broader view of community usage and net community benefit and the role of Council is considered for Principle 2 to include business and broad community benefit.</li> <li>• Suggests the Shire will always have a stake in the operations of facilities in the foreshore environments unless there is alternative provision.</li> <li>• Requests that the shared service model is applied consistently and not just in consideration of Council assets.</li> <li>• Submission 18 does not support connecting toilet provision with local economic return and believes</li> </ul>	<p>The Strategy acknowledges that the provision of public toilets is beneficial to the wellbeing of the community and that toilets also play an important role in visitor experience. The high volumes of tourist visitation in Colac Otway Shire present unique challenges for the provision and maintenance of public assets and as visitor numbers increase there is ever growing pressure for additional toilets, upgrade of ageing facilities and more regular servicing. It is acknowledged that this challenge is shared by all managing agencies.</p> <p>Within the context of limited resources careful consideration must be given to investment allocation</p>



		<p>providing toilets is an essential part of providing for tourism in a region and that providing good clean toilets is part of creating a pleasant experience for visitors that drive the local economy.</p>	<p>towards new and upgraded facilities. The Strategy recommends that Council take full responsibility for the provision and maintenance of toilets classified as community facilities and that Council should contribute to the provision, maintenance and ongoing costs of any facility where there is a demonstrated community benefit, which may include a benefit to the local economy. It then sets out criteria for determining an equitable level of investment.</p> <p>The Strategy recommends the use of shared service agreements at Council owned sites.</p> <p><b>No change to the Strategy</b></p>
Great Ocean Road Coast & Parks Authority - Other Principles	15	<ul style="list-style-type: none"> <li>• Long stay infrastructure such as bbqs and picnic shelters should be accompanied by toilet infrastructure. Requests the Strategy include and reflect stay times.</li> <li>• Supports walkable catchment from key nodes applied at 400m.</li> <li>• Requests that the Shire continue to align with the principles of decreased and consolidated footprints where appropriate, especially where limited community space is available.</li> <li>• Recommends the Strategy aligns with existing master plans.</li> </ul>	<ul style="list-style-type: none"> <li>• The Strategy recommends support for toilets where extended stays are encouraged and which have picnic or other facilities (page 36). At this time metrics have not been defined and officers have confirmed with GORCAPA that the wording in the Strategy meets their expectations.</li> <li>• Noted.</li> <li>• Outside the scope of the Strategy to consider.</li> <li>• Noted – the Strategy supports this position.</li> </ul> <p><b>No change to the Strategy</b></p>
Provision of public toilets along the Great Ocean Road	2, 5, 17	<ul style="list-style-type: none"> <li>• GORCAPA need to provide input on the assessment and condition of toilets under their management. Was GORCAPA asked to engage in a joint strategy?</li> <li>• A public toilet is required between Apollo Bay and Lavers Hill, a distance of 50km, to address public health and waste concerns caused by the absence of a toilet.</li> </ul>	<p>GORCAPA were consulted during development of the Strategy, provided information about the location and management of toilets under GORCAPA management and have made a submission to the Strategy.</p> <p>Outside townships the Strategy recommends providing toilets at key destinations, tourist activity nodes, campgrounds and open space reserves. It recommends</p>

			<p>consideration be given to toilet provision where visitation is high and extended stays are encouraged. There are tourist stopping points between Apollo Bay and Lavers Hill where longer stays are expected such as Maits Rest and Castle Cove. None of these sites are managed by Council and they are all in sensitive and remote locations which present challenges for public toilet provision. Noting the submissions however, Council will raise these concerns with the relevant managing authorities and discuss potential options.</p> <p><b>No change to the Strategy</b></p>
Provision of Public Toilets in Colac	3, 6	<ul style="list-style-type: none"> <li>• There are not enough public toilets, particularly accessible public toilets, in the Colac region.</li> <li>• An additional public toilet is needed at the Western end of Colac, perhaps the former High School site.</li> </ul>	<p>The Strategy identified two key gaps in public toilet provision in Colac. The first is at the western end of the Colac Commercial Centre, however it was also noted that privately operated toilets are currently available to patrons at that end of the town centre and therefore this was not considered a necessary recommendation at this time.</p> <p>The second gap was noted at the western end of Lake Colac in the vicinity of Western Bay Park. Further discussion on the Western Bay Park proposal is discussed later in this table.</p> <p><b>No change to the Strategy</b></p>
Provision of Public Toilets in Forrest	10, 11, 12, 13, 14	<ul style="list-style-type: none"> <li>• The provision of toilets must also consider effluent treatment and water supply. Lack of sewerage in Forrest is a major constraint to toilet provision.</li> <li>• There appears to be a lot of toilets on the map but current public toilets are poorly located, difficult to find, have inadequate directional signage, poor DDA compliance and non-compliant waste water infrastructure.</li> </ul>	<p>Forrest is a popular tourist town in Colac Otway Shire and the concerns raised by submissions in relation to public toilet provision are acknowledged. Waste water issues in particular have been confirmed previously through extensive investigations and consultation. Council, Barwon Water and the community are currently partnering in a project to improve waste water management in Forrest, but it is noted that wastewater is outside the scope of the Strategy. The Strategy does contain a high priority action to investigate the relocation and construction of a shared</p>

		<ul style="list-style-type: none"> <li>Forrest has increasing overnight stays and is a tourism destination beyond mountain biking.</li> <li>Forrest is within the G21 'high growth belt' yet the draft Strategy does not list any toilets in Forrest as a high priority for improvement.</li> <li>Forrest is an urgent and high priority for action.</li> <li>The Forrest &amp; District Community Group (FDCG)   Forrest Public Reserves Committee (FPRC) support and endorse the recommended improvements for Forrest, but they also request reconfiguration of an existing facility as well as improvements to the caravan park toilets to address urgent needs.</li> <li>Request the installation of counters across town on public and private facilities to assess demand.</li> <li>The toilets at the Community Hub have not been included in the Audit list (47 Grant Street) x 2 facilities Neighbourhood House and Grasstree Building.</li> <li>Public toilets are needed to service Grant Street traffic.</li> <li>Has the Gateway Project been considered as part of the future options?</li> <li>Need to mention the Forrest &amp; District Community Plan – Toward 2030.</li> </ul>	<p>use facility at the Forrest Caravan Park but does not include any discussion about the issues or challenges associated with public toilet provision in Forrest generally.</p> <p><b>Changes to final Strategy:</b></p> <ul style="list-style-type: none"> <li>P61 – Forrest Caravan Park action edited to describe the need for further consultation with the Forrest community and other managing authorities to determine short and long term needs and options.</li> </ul> <p>The toilets at the Community Hub are not currently accessible to the general public so are <b>not included</b> in the Strategy.</p>
Provision of Public Toilets in Lavers Hill	18	<ul style="list-style-type: none"> <li>Do not agree with consolidating public toilets at Lavers Hill due to high usage.</li> <li>Lavers Hill are the first public toilets after the 12 Apostles and an hour from Apollo Bay, so they are in high demand from visitors all year round but particularly from December until Easter.</li> <li>Current toilets adjacent to the roundabout are inadequate. There is no reticulated water or sewer and current systems inadequate to cope and cause</li> </ul>	<p>The Strategy recommends investigating the opportunity to consolidate public toilet facilities in Lavers Hill in consultation with the community to understand local needs and to undertake a demand assessment to determine future requirements. Concerns raised in the submission are noted and the Strategy supports the position that public toilets are an essential need in Lavers Hill, that the condition of the existing facilities is poor and that upgrades are required.</p>

		<p>problems off-site. Ventilation and maintenance is also inadequate.</p> <ul style="list-style-type: none"> <li>• Toilets adjacent to the public hall is also heavily used (campers, locals). There is limited scope to increase the size of this facility due to water supply issues and the inadequate septic system. The toilets also need maintenance such as painting.</li> <li>• Directional signage to toilets in town is inadequate.</li> <li>• Request installation of directional signage for Melba Gully toilets.</li> </ul>	<p>The Strategy currently recommended that Council investigate demand, needs and requirements for public amenities in Lavers Hill, and well planned consolidation into a new facility may be a beneficial outcome, but it is premature to consider consolidation as the end goal prior to the investigation. Therefore:</p> <p><b>Changes to final Strategy:</b></p> <ul style="list-style-type: none"> <li>• P62 – Lavers Hill action wording edit from “opportunity” to “option” to reference consolidation as a potential outcome rather than initial goal.</li> </ul>
Provision of Public Toilets at Sporting Facilities	6	<ul style="list-style-type: none"> <li>• Permanent public toilets (not port-a-loos) are needed in close proximity to large sporting facilities.</li> <li>• These need to be large, accessible toilets.</li> </ul>	<p>The Strategy recommends that public toilet facilities are provided at open space reserves, including key recreational linear links, with facilities that attract higher levels of visitation and longer stays. This would include large sporting reserves.</p> <p><b>No change to the Strategy</b></p>
Prioritisation of Actions	5, 10, 14	<ul style="list-style-type: none"> <li>• No data or statistics have been used to determine priorities.</li> <li>• The draft Strategy lacks a demand analysis to support recommendations and determination of priorities.</li> <li>• There is no explanation of why high priority actions have been listed for 1-3 years.</li> <li>• How will all of these upgrades listed as high priorities be planned, costed and achieved within 1-3 years?</li> </ul>	<p>A demand analysis for individual facilities was outside the scope of the Strategy.</p> <p>It is acknowledged that many of the actions have been listed as high priorities and this partly reflects the ageing infrastructure that currently exists and the need for upgrade to many facilities. The public exhibition process has highlighted some particular priority areas for action and identified other locations that may not be as high priority for action at this time.</p> <p><b>Changes to final Strategy:</b></p> <ul style="list-style-type: none"> <li>• P60 – line added to review priority ratings every 3 years.</li> </ul>

Policy review	12, 13	<ul style="list-style-type: none"> <li>Not all of the actions listed in the policy review have been completed.</li> </ul>	<p>The policy review is not an update of actions completed but a summary of literature reviewed and considered in the preparation of the Public Toilet Strategy.</p> <p><b>No change to the Strategy</b></p>
<b>Facility Specific Recommendations</b>			
Barongarook Public Hall toilets	7	<ul style="list-style-type: none"> <li>Endorse the classification of these toilets as both Visitor Amenities – Local and Community Facilities.</li> <li>Endorse the recommendation that these toilets are a high priority for short term action.</li> <li>Endorse the recommendation to transfer maintenance responsibility for the toilets to Council and request that this includes once weekly cleaning.</li> <li>Installation of a rainwater tank for drinking water would be beneficial.</li> </ul>	<p>Noted. Rainwater tanks and associated infrastructure are outside the scope of the Strategy.</p> <p><b>No change to the Strategy</b></p>
Forrest Caravan Park toilets	10, 12, 13	<ul style="list-style-type: none"> <li>The caravan park toilets should be classified as a campground facility.</li> <li>The photograph of the disabled toilet is misleading and does not illustrate the difficulty with locating this toilet from the street.</li> <li>This toilet is obscured from street view and lacks adequate directional signage.</li> <li>The facility does not serve main road passing traffic. They are poorly located and underutilised compared with visitation to town.</li> <li>In the short term, these toilets may be suitable to serve as public toilets if there is access made available from Station Street and Grant Street with adequate directional signage.</li> <li>Upgrade could result in more use of Forrest public spaces and facilities and highlight this area as a</li> </ul>	<p>The toilets at the caravan park are currently open to the general public 24/7 and are therefore classified as Community Facilities. In the theme “provisions of toilets in Forrest” above, it is recommended that the Strategy is amended to include additional discussion on the potential opportunities and the need for further consultation with the Forrest community and other managing authorities to determine short and long term needs and options.</p> <p>The photograph on P10 does not display visibility of the toilets from the street so has not been changed.</p> <p><b>Changes to final Strategy:</b></p> <ul style="list-style-type: none"> <li>P61 – Forrest Caravan Park action edited to describe the need for further consultation with the Forrest community and other managing authorities to determine short and long term needs and options.</li> </ul>

		significant attraction for young families and visitors while also servicing the caravan park.	
Forrest Mountain bike Trailhead	13	<ul style="list-style-type: none"> <li>These toilets are in very poor condition. This facility is recommended for upgrade in the Forrest MTB Strategy but not mentioned here. This upgrade may reduce the need for other upgrades.</li> </ul>	<p>The scope of the Strategy did not include a condition assessment for non-Council facilities and therefore does not make recommendations on these.</p> <p><b>No change to the Strategy</b></p>
Forrest Public Hall	10, 11, 13	<ul style="list-style-type: none"> <li>The Forrest Public Hall toilet is not available to the public. Its septic system is inadequate to cope with the current limited load.</li> <li>Request exploration of providing a public toilet facility in the space next to the Public Hall, or reconfiguration of toilets.</li> <li>Request Council consider entering into a Shared Service Agreement for the Forrest Public Hall as a short term 1 year solution.</li> <li>These toilets have an inefficient waste water system, poor signage and need upgrades to roads, grounds and building before they could be used as public toilets. Waste water run off to adjoining properties is an issue.</li> </ul>	<p>As discussed above, it is recommended that the Strategy is amended to include additional discussion on the potential opportunities and the need for further consultation with the Forrest community and other managing authorities to determine short and long term needs and options.</p> <p><b>No additional change to the Strategy</b></p>
Hesse Street Comfort Station	3	<ul style="list-style-type: none"> <li>Hesse Street toilets are the most in need of an upgrade / repair (fresh air, larger cubicles)</li> </ul>	<p>The Strategy recommends that Council investigate this facility as a high priority to determine current and future demand and needs as part of the public toilet network.</p> <p><b>No change to the Strategy</b></p>
Irrewillipe Recreation Reserve	16	<ul style="list-style-type: none"> <li>Toilets are adequate with current twice weekly clean.</li> <li>Request the addition of an ambulant cubicle to accommodate disability services who use the Reserve weekly for exercise.</li> <li>Refresh of toilets with render or paint would improve the appearance.</li> </ul>	<p>Improvements to the Irrewillipe Recreation Reserve public toilets are recommended in the Strategy.</p> <p><b>No change to the Strategy</b></p>

		<ul style="list-style-type: none"> <li>Additional toilets at the Reserve would require an upgraded septic system.</li> </ul>	
Kawarren Public Toilets – Loves Creek	4	<ul style="list-style-type: none"> <li>Facility is well used by the local community, road travellers and visitors.</li> <li>Absence of signage means visitors do not know they are available. Request signage and directions at the Kawarren Tennis Club and on the Beechy Rail Trail opposite the toilets.</li> <li>Request automatic lighting within the toilets and exterior sensor lighting (there is power to the toilets).</li> <li>Request automatic hand dryers or paper towel dispensers with rubbish bin.</li> <li>Request all weather pathway to connect the Beechy Rail Trail to the toilet facility.</li> <li>Request sanitary disposal unit in both female cubicles.</li> <li>Request installation of baby change table and wall dispenser with cleaning wipes for the table.</li> </ul>	<p>The Strategy recommends renovation and upgrade of toilets at the Kawarren Recreation Reserve and possible decommissioning of the Loves Creek toilets once the new facilities are operational. It was considered that the facility at the Kawarren Reserve would better serve the needs of the local community (closer to the playground, tennis court, Echidna House) and would be closer to the Old Beechy Rail Trail than the Loves Creek toilets. The Strategy would not support Council investing in two separate public toilet facilities in this location.</p> <p><b>No change to the Strategy</b></p>
Larpen Public Hall toilets	9	<ul style="list-style-type: none"> <li>Do not support the recommendation to change these toilets to Limited Use only.</li> <li>Toilets are popular for locals and local business (log trucks, milk tankers, cattle and grain trucks, tradesmen, stock feed reps, vets, etc).</li> <li>There is good, safe access to the toilets for larger vehicles.</li> <li>Toilets are also needed in case of a major fire or event as the nearby CFA only has one toilet.</li> <li>The Hall is the district’s emergency assembly point so the toilets need to be open without restricted access.</li> </ul>	<p>It is understood that there may be wider demand for these toilets by businesses servicing the local agricultural economy in this location. It is recommended that counters be installed in this facility to determine demand and usage prior to any decision about changing the facility to a limited use facility. It does not appear that this is a high priority as the toilets are adequately maintained at present.</p> <p><b>Changes to final Strategy:</b></p> <ul style="list-style-type: none"> <li>P61 - action for these toilets is amended to be a “medium term” priority.</li> </ul>

		<ul style="list-style-type: none"> <li>• These toilets are the only public toilets between Colac and Camperdown that are conveniently close to the Princes Highway and they service a busy main secondary road, Larpent Road.</li> <li>• The toilets were closed by Council before with a poor outcome.</li> <li>• Request major clean of toilets to remove bird droppings, moss, gutters and painting.</li> <li>• Request installation of hand dryers.</li> </ul>	
Memorial Square toilets	3, 5	<ul style="list-style-type: none"> <li>• More parking is required to access the Memorial Square toilets</li> <li>• The Memorial Square toilets are adequate and not in need of an upgrade. Coach traffic is currently absent.</li> <li>• A changing places facility would be of benefit to people with special needs.</li> </ul>	<p>A level of Coach traffic is expected to recommence following end of Covid restrictions and increases in local and international travellers is anticipated to re-establish visitor numbers over the coming years.</p> <p>A separate project is underway to upgrade these toilets including a changing places facility.</p> <p>Some parking improvements have been made to the current parking layout at Memorial Square with disabled parking in front of the toilet redevelopment.</p> <p><b>No change to the Strategy</b></p>
Paradise Reserve	5	<ul style="list-style-type: none"> <li>• A masterplan is needed for Paradise Reserve before deciding on toilet provision at that location.</li> </ul>	<p>Development of a masterplan for Paradise Reserve is outside the scope of the Public Toilet Strategy.</p> <p>The strategy's current action is to review the management model for facilities at this location, along with a demand assessment.</p> <p><b>No change to the Strategy</b></p>
Pascoe Street toilets, Apollo Bay	5	<ul style="list-style-type: none"> <li>• The Pascoe Street toilets are a regional facility, not a local one. They were installed next to tourist bus parking to service international tourists.</li> </ul>	<p>The Strategy classifies the Pascoe Street toilets as Regional and Local as it is considered that they serve both tourist coaches and visitors coming to spend time with the commercial centre of Apollo Bay.</p> <p><b>No change to the Strategy</b></p>



Ross Point toilet, Lake Colac	8, 18	<ul style="list-style-type: none"> <li>• The toilet is not often used for its intended purpose but as a meeting place for unsociable behaviour.</li> <li>• The provision of night lighting has exacerbated the night time unsociable behaviour, used needles are frequently littering the surrounding area despite the provision of a sharps container.</li> <li>• Nearby residences are being subjected to unsociable behaviour including attempted break-ins.</li> <li>• Request the toilet be decommissioned and demolished immediately without waiting for new toilets to be constructed at Western Bay Park.</li> <li>• The toilet has met the requirements of people or fishing or walking in the area for many years. The following questions should be answered prior to any decisions being made: <ul style="list-style-type: none"> <li>– How many times a day is the current facility being used?</li> <li>– If there is antisocial behaviour after hours, could the door be locked from 6pm?</li> <li>– Is there any data on the number of incidents?</li> </ul> </li> </ul>	<p>Council is aware of public nuisance complaints and issues at this location.</p> <p>Further investigate is required into issues and concerns with this facility as a priority. Investigations should include consultation with nearby residents and interested community groups.</p> <p><b>No Change to the Strategy</b> – as further investigation is already occurring.</p>
Warrion Public Hall Toilets	1	<ul style="list-style-type: none"> <li>• Clarification – toilet is managed and cleaned by Colac Otway Shire and accessible 24/7.</li> <li>• Toilets need upgrading to achieve DDA compliance</li> </ul>	<p>Noted – the Strategy recommends that future upgrade to toilets will need to achieve DDA compliance</p> <p><b>Change to final strategy:</b></p> <ul style="list-style-type: none"> <li>• P97 - Warrion Public Hall management changed to Colac Otway Shire.</li> </ul>

Western Bay Park toilets	18	<ul style="list-style-type: none"> <li>• Objects to a number of recommendations in the Lake Colac Foreshore Masterplan 2016 which have been taken through to the draft Public Toilet Strategy including: <ul style="list-style-type: none"> <li>– Locating public toilets at Western Bay Park.</li> <li>– Consolidation of buildings into one facility at Western Bay Park as the current uses are incompatible.</li> </ul> </li> <li>• The Colac Yacht Club has successfully been operating in recent years and membership has grown.</li> <li>• The Colac Yacht Club is concerned that public toilets in Western Bay Park might attract antisocial behaviour.</li> </ul>	<p>The Strategy identifies a need for public toilets at the western end of Lake Colac to service users of the Lake foreshore in this area. A number of reasons would lend support for providing public toilets in Western Bay Park. It is generally considered best practice to locate public toilets in high usage public areas where demand is likely to be highest, where there are playgrounds and safety needs can be better met by greater general surveillance.</p> <p>It is understood that usage and stakeholder needs might have changed in the years since the Lake Colac Foreshore Masterplan 2016 was adopted and that there needs to be further consultation with stakeholder groups and an investigation of options to understand current usage and needs.</p> <p><b>Changes to final Strategy:</b></p> <ul style="list-style-type: none"> <li>• P62 - Action 23 edited to state “Provide public toilets in Western Bay Park in accordance with the Lake Colac Foreshore Masterplan (2016) after further community consultation to re-confirm need, location and management models.”</li> </ul>
--------------------------	----	--	--



# Colac Otway Shire Public Toilet Strategy

August 2022

FOR ADOPTION

---

This document has been prepared by Colac Otway Shire Council with support from Ethos Urban.

VERSION NO.	DATE OF ISSUE	REVISION BY	APPROVED BY
1.0	17/08/2022	M.Harty	J.Myatt

COLAC OTWAY SHIRE COUNCIL  
2-6 Rae Street, Colac VIC 3250  
T. +61 35232 9400 W. colacotway.vic.gov.au

---

# Terms Used

## Terms used

Australian Standard  
(AS 1428)

## Definition

AS 1428 specifies that new buildings must be capable of providing access to people with disabilities. Particular attention is focused on continuous accessible paths of travel for wheelchair users, access for people with ambulatory disabilities and access for people with sensory disabilities.

Building Code of  
Australia (BCA)

A uniform set of technical provisions to be incorporated into the design and construction of buildings and other structures within Australia.

Changing Places  
Toilet

Public toilet facilities that cater for people with severe or profound disabilities. These facilities incorporate full sized change tables tracking hoist systems, large circulation spaces and a centrally placed toilet with room for carers.

Crime Prevention  
Through  
Environmental Design  
(CPTED)

An approach to the prevention of crime focusing on the relationship between physical environments and those who use them.

Disability  
Discrimination Act  
(DDA)

The Disability Discrimination Act 1992 makes discrimination against an individual because of their disability unlawful. This applies to a number of areas of public life including employment, education and the access of public places.

Ecologically  
Sustainable Design  
(ESD)

An integrated and holistic approach to design that aims to reduce negative environmental impacts and improve the health of building occupants. Principles of ESD include the promotion of renewable energy, reducing water use, inclusion of environmentally friendly building materials and optimising operational practices.

Public Toilet

A facility containing one or more rooms/cubicles with one or more toilets or urinals which is available for use by the public without restriction during hours of operation. The facility may be mechanised or automated and consist of stand-alone, service-hosted and privately provided facilities.

Stand Alone

A free-standing toilet building

Co-Located

A public toilet that is externally accessible and attached to, or within, an existing building structure such as a sport pavilion or a library.

Unisex Facility

A facility that is accessible to both males and females.

All Gender Facility

Terminology used to describe a facility that is accessible to all people regardless of gender, preferred over 'unisex' by the LGBTIQ community as it recognises that some members of the community do not identify as either male or female.

Ambulant Facility

A facility that is accessible to those with ambulant disabilities (e.g. sensory loss, arthritis, use of a walking frame) who are not confined to a wheelchair. Ambulant facilities do not provide the required additional space needed for wheelchair access.

Accessible Facility

A facility designed to provide space to accommodate wheelchair access and assistance when transferring from wheelchair to toilet, with features such as lower mirrors and washbasins and grab rails. These are also sometimes referred to as Disabled Facilities.

# Contents

	<b>Terms Used</b>	<b>4</b>
<b>1.0</b>	<b>Introduction</b>	<b>6</b>
1.1	Overview	7
1.2	Public Toilets in Context	8
1.3	Limitations of the Strategy	10
<b>2.0</b>	<b>Strategic Context</b>	<b>11</b>
2.1	Shire Profile	12
2.2	Legislative and Policy Framework	14
2.3	Existing Network Summary	16
<b>3.0</b>	<b>Strategic Framework</b>	<b>20</b>
3.1	Purpose	21
3.2	Use Typologies	22
3.3	Services Levels	24
3.4	Principles	30
	3.4.1 Adequate Provision	31
	3.4.2 Maximum Economic Benefit	41
	3.4.3 Environmentally Responsible	44
	3.4.4 Quality and Safe Design	46
	3.4.5 Equitable Access	49
	3.4.6 Well-maintained & Hygienic	53
<b>4.0</b>	<b>Strategic Recommendations &amp; Action Plan</b>	<b>55</b>
4.1	Strategic Recommendations	56
4.2	Action Plan	60
<b>5.0</b>	<b>Assessment Framework</b>	<b>63</b>
	<b>Appendices</b>	<b>67</b>
A	Audit Summary of Existing Facilities	68
B	Policy Review	72

Chapter 1

# INTRODUCTION

FOR ADOPTION

Figure 1: Otways Mountains



# 1.1 Overview

## The Project

Public toilets are vital community assets that contribute to the health and well-being of residents, workers and visitors to Colac Otway Shire (the Shire). Often unacknowledged, public toilets support the vitality, use, and accessibility of public places and spaces.

Colac Otway Shire Council (Council) has commissioned the preparation of this Public Toilet Strategy to guide decision-making regarding the provision, management, and maintenance of public toilet facilities in Colac Otway Shire. The project objectives are to:

- Establish a clear policy position on public toilets, supported by a Strategy that details a Purpose and Principles to guide decision-making for public toilets in Colac Otway Shire;
- Identify principles and decision-making tools to assist Council in determining projects on the basis of identified need; and
- Produce an action plan which provides a prioritised program of actions and works to implement the Strategy.

The Draft Public Toilet Strategy will be exhibited and will incorporate stakeholder and community feedback prior to being finalised and adopted by Council. The timeline is depicted below.

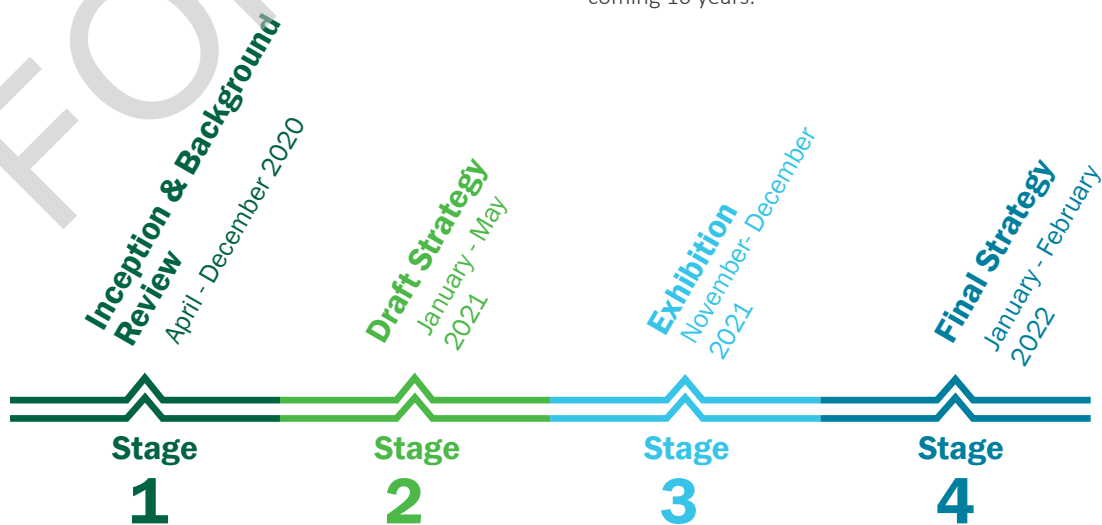


Figure 2: Project timeline

## This Report

The Colac Otway Shire Public Toilet Strategy (the Strategy) sets out a strategic framework to guide the provision and management of Council owned public toilets across the municipality. The Strategy includes recommendations for addressing key gaps in the network and provides a framework to determine provision and management responsibilities.

The Strategy builds upon the Colac Otway Shire Public Toilet Strategy Background Review Report (the Background Report), prepared by Ethos Urban in December 2020. The Background Report identified key issues and challenges associated with public toilets in the Shire as well as best practices and trends in toilet provision and management. The Strategy contains further analysis and recommendations to guide Council decision-making for public toilets.

Core elements of the Strategy are:

- An analysis of relevant context and background information;
- A review of the existing network, based on an audit of facilities and benchmarking across industry standards;
- Strategic Purpose and Principles, Service Levels, Use Typologies;
- Recommendations for Council investment and management responsibilities; and
- A prioritised Action Plan to guide investment over the coming 10 years.

# 1.2 Public Toilets in Context

## What is a Public Toilet?

For the purposes of this Strategy, a public toilet is defined as:

*A facility containing one or more rooms/cubicles with one or more toilets or urinals which is available for use by the public without restriction during hours of operation. The facility may be mechanised or automated and consist of stand-alone, service-hosted and privately provided facilities.*

## The Role of Public Toilets

### Community Infrastructure

Introduced in the late nineteenth century as a response to public health concerns and to make cities more sanitary, public toilets provide an essential piece of community infrastructure which contribute to the enjoyment and amenity of a place. Public toilets should cater to residents, workers, visitors, and those experiencing homelessness. They can support increased use of open space, and increased participation in local social, economic, and recreational activities.

The provision and governance of public toilets can be complex. While there is no statutory or legislative requirement for Councils to provide public toilet facilities, Colac Otway Shire Council is committed to creating healthy, safe places that enhance wellbeing and to providing assets and services that meet community needs.<sup>1</sup>

### Tourism

Public toilets also play an important role in tourism. Research has shown that toilets are one of the most important aspects of a holiday experience, particularly for road trips. Regardless of the destination, the need for public toilets is present for all travellers, and the provision of safe, clean, and accessible toilets can greatly contribute to positive perceptions of an area among visitors, and even attract new ones.

While public toilets in areas that receive a high volume of visitors can pose challenges and costs to local authorities, facilities that are well-designed, well-maintained, and well-located tend to have a 'flow-on effect' for the local economy. That is, tourists will stop to use a toilet, but also purchase food, supplies, or souvenirs, or fill up on petrol.<sup>2</sup>

<sup>1</sup> Colac Otway Shire Municipal Public Health and Webbing Plan 2017-2021  
<sup>2</sup> My Travel Research (2019)

The strong presence of road-based tourism in the Shire adds a layer of complexity to toilet provision, maintenance, and management that this Strategy addresses.

## Why Plan for Public Toilets?

Historically, Colac Otway Shire Council has not had a strategy to guide planning and prioritisation of public toilet provision and management often resulting in ad-hoc outcomes. As facility user needs and preferences evolve, and visitor numbers continue to grow, it is important that Council has a clear framework to guide decision making.

It is also important that upgrades and installations of new facilities respond to community needs. Issues around the accessibility, design and safety of public toilets can result in the marginalisation of some user groups and exclude others from using public toilets, which may then foster negative perceptions about existing facilities.

There are opportunities to improve the process of strategic planning for new facilities, the standard of existing toilets and improve the efficiency of the network throughout the Shire.

The Colac Otway Shire Public Toilet Strategy provides a rational and strategic planning framework to guide future upgrades and installation of new facilities over the next ten years. This will also ensure that investment is appropriately prioritised within available budgets.



Figure 3: Forrest Caravan Park Public Toilets

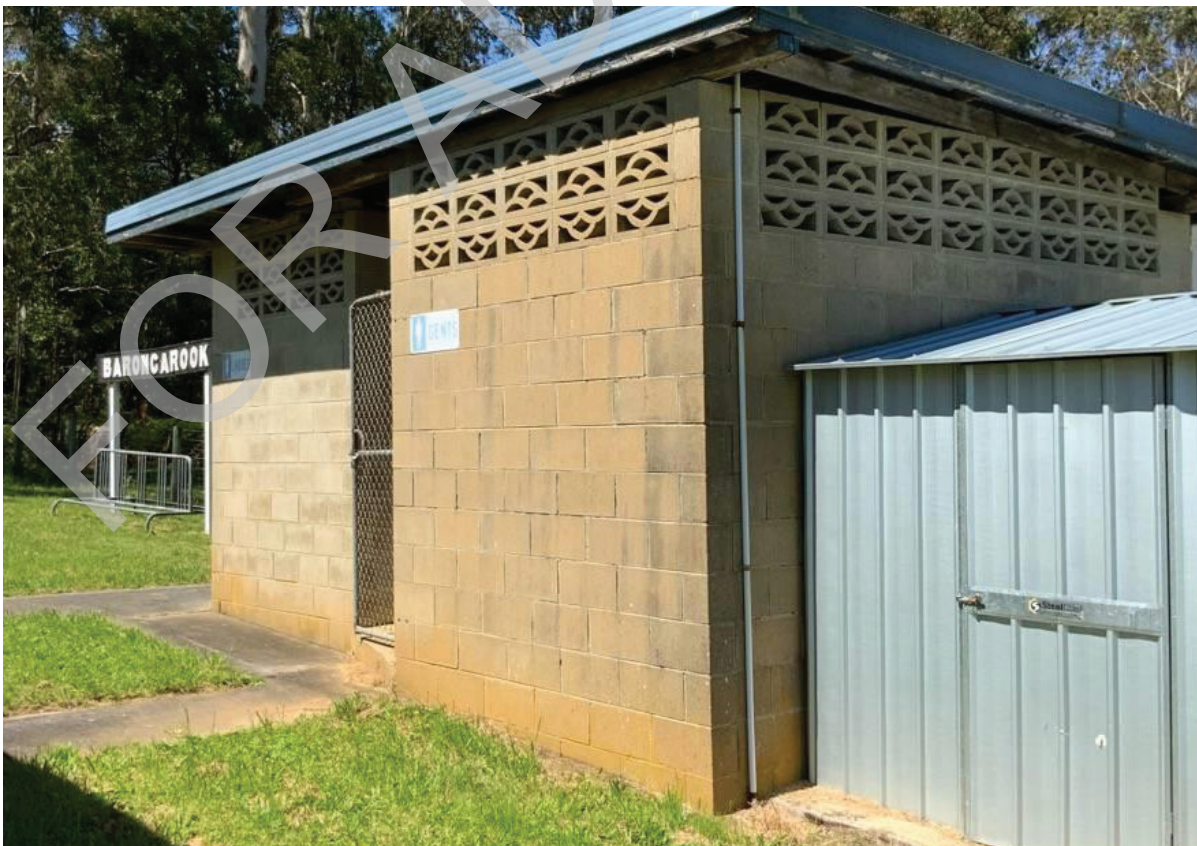


Figure 4: Barongarook Public Hall Toilets

# 1.3 Limitations of the Strategy

## Public Toilets and COVID-19

It is important to acknowledge that this Strategy has been developed in the midst of an evolving global pandemic event. While the extent of impacts from COVID-19 and its associated restrictions are not yet fully known, it is likely that public toilet facilities will face a number of new challenges as a result.

Government agencies, including local Councils, continue to adapt and investigate ways to respond to these emerging challenges to protect the public and help stop the spread. Accordingly, the Strategy will also include a high-level consideration of potential interim and permanent impacts to the provision, design, and operation of public toilets.

## Audit of Facilities

An audit of the existing Council-owned public toilet facilities was conducted to inform the preparation of this Strategy. The audit included both desktop analysis and site visits to collect data on each facility against a range of variables. This Strategy uses the findings from the audit to assess the existing public toilet network against its Purpose and Principles.

While the audit provides an evidence-based foundation for the recommendations of the Strategy, it is important that its findings are supplemented by more fine-grained, technical assessments on a site-by-site basis where new toilets are to be provided or existing toilets upgraded. This may include an assessment of issues and opportunities for the following:

- Identify appropriate service levels;
- DDA accessibility;
- Signage;
- The condition and fitness-for-purpose of internal components;
- Crime Prevention through Environmental Design (CPTED); and
- Integration with local heritage / character.



Figure 5: Forrest Caravan Park Disabled Toilets

Chapter 2

STRATEGIC  
CONTEXT



Figure 6: Beauchamp Falls

# 2.1 Shire Profile

## Colac Otway Shire

Colac Otway Shire is located 160 kilometres west of Melbourne in a natural environment which includes State Forests and National Parks.

Extending along its entire coastline is the Great Ocean Road that stretches from Torquay in the north to Warrnambool in the west, a region that attracts significant tourist traffic. It is also within commuting distance of Geelong, which is experiencing significant job and population growth.

The Traditional Owners of the region are the Gulidjan and Gadubanud peoples.

## Population

The Shire is currently home to **22,068** people, with just over half residing in the inland urban area of Colac-Elliminyt. Apollo Bay is the second-largest urban centre with a population of approximately 1,800.

The population of Colac Otway Shire is forecast to reach **26,756** by 2041, representing an increase of 25.26%, at an average annual rate of 0.9%. This represents fairly modest anticipated growth relative to the metropolitan areas of Geelong and Melbourne.<sup>1</sup>

During the summer and at other peak times (e.g. Easter and school holidays), the population of the Shire's coastal townships swells significantly. The percentage of unoccupied private dwellings (i.e. holiday homes and investment properties) in these towns is very high, filling up during peak periods with holiday makers, and placing increased demand on local infrastructure including public toilets, change facilities along the foreshore and end of trip facilities for walkers/cyclists.

<sup>1</sup> Forecast.id (2021)

## Visitation & Tourism

The Shire enjoys a unique position between Melbourne and some of Australia's most visited tourist attractions. The 240-kilometre journey along Great Ocean Road is perhaps the country's most well-known road trip. The Great Ocean Road attracts more than 7 million visitors each year, and by 2026/2027 this figure is anticipated to surpass 10 million<sup>2</sup>. The peak period for visitation is October to April, while between May and September activity slows down.

According to Great Ocean Road Regional Tourism, the most common Great Ocean Road trip route is along the Great Ocean Road from the metropolitan area, and returning along the inland Princes Highway, which passes through the Colac township.

Estimates of visitation and forecast growth at a sub-regional level, within the Great Ocean Road region, have been made for the financial years 2019 and 2030. The estimates show that, while the Otway region ranks lower on a regional basis for domestic day trips (ranked sixth out of seven), it ranks more highly in terms of domestic overnight visits and it is the highest ranked sub-region for international overnight trips<sup>3</sup>. These figures show significant increases in the compound annual growth rate anticipated to 2030. These figures do not account for any impacts associated with the COVID-19 pandemic. Revised forecasts were not available at the time of this report, but it is expected that high levels of visitation will resume as travel restrictions continue to ease.

<sup>2</sup> Great Ocean Road Regional Tourism (2019)  
<sup>3</sup> Deloitte Access Economics, Deloitte Touche Tohmatsu 2020



Figure 7: Apollo Bay

Along the Great Ocean Road, the key tourist sites within Colac Otway Shire include:

- Apollo Bay;
- Kennett River;
- Great Otway National Park and Lighthouse; and
- Great Ocean Road smaller coastal townships.

Tourism is the fifth-largest industry in Colac Otway Shire, generating \$171 million in gross regional product for the municipality in the year ending June 2019.<sup>4</sup>

### Regional and Local Tourism

While the high volume of tourist traffic generates significant expenditure and employment opportunities in the Shire, it also places significant pressure on infrastructure such as public toilets. In some cases toilet facilities have limited capacity to cope with increasing demand. In other situations, toilets are not located at sites where there is an opportunity to leverage visitor spending to support the local economy, even though the visitation is likely to support the economy of the Great Ocean Road region more widely.

As noted above, there are different types of visitors to the Colac Otway region including domestic day trip visitors, domestic overnight visitors and international visitors. Among these groups, visitation can also be considered in terms of visitors coming to the Shire, whose objective is to spend time within Colac Otway as a destination as opposed to visitors who may be passing through as part of a wider touring experience along the Great Ocean Road. With regards to the latter group it is recognised that public toilet facilities can have an impact on visitor flows and dwell times. Consideration should be given to locating public toilets so as to secure the maximum local economic benefit where possible, however given the nature of many of the Shire's natural attractions (e.g. coastal foreshores and National Parks) there will be a need for amenities outside activity nodes, where visitation is very high and where extended stays are encouraged or expected.

4

Great Ocean Road Regional Tourism (2019)

In planning for adequate toilet provision in popular tourist areas it is also important to consider what level of demand can be accommodated and would be appropriate given the site context and visitor flows. In creating sustainable transport systems this has sometimes been referred to as the "design event". Many of the most popular tourist destinations in Colac Otway Shire experience peak visitation during the summer months, often extending on weekends until after the Easter holiday period. There was some evidence prior to the COVID-19 pandemic that off peak tourism was steadily increasing, partly as a result of increased international visitors coming to the Great Ocean Road region. Peaks are also experienced at certain times during the day, particularly in certain areas correlating with coach arrival times from Melbourne. It will be necessary to ensure a balanced approach in accommodating peak periods while being mindful not to over invest and create infrastructure that sits idle for long periods with high ongoing maintenance costs. Adequate provision is considered in more detail in Chapter 3.4.

# 2.2 Legislative and Policy Framework

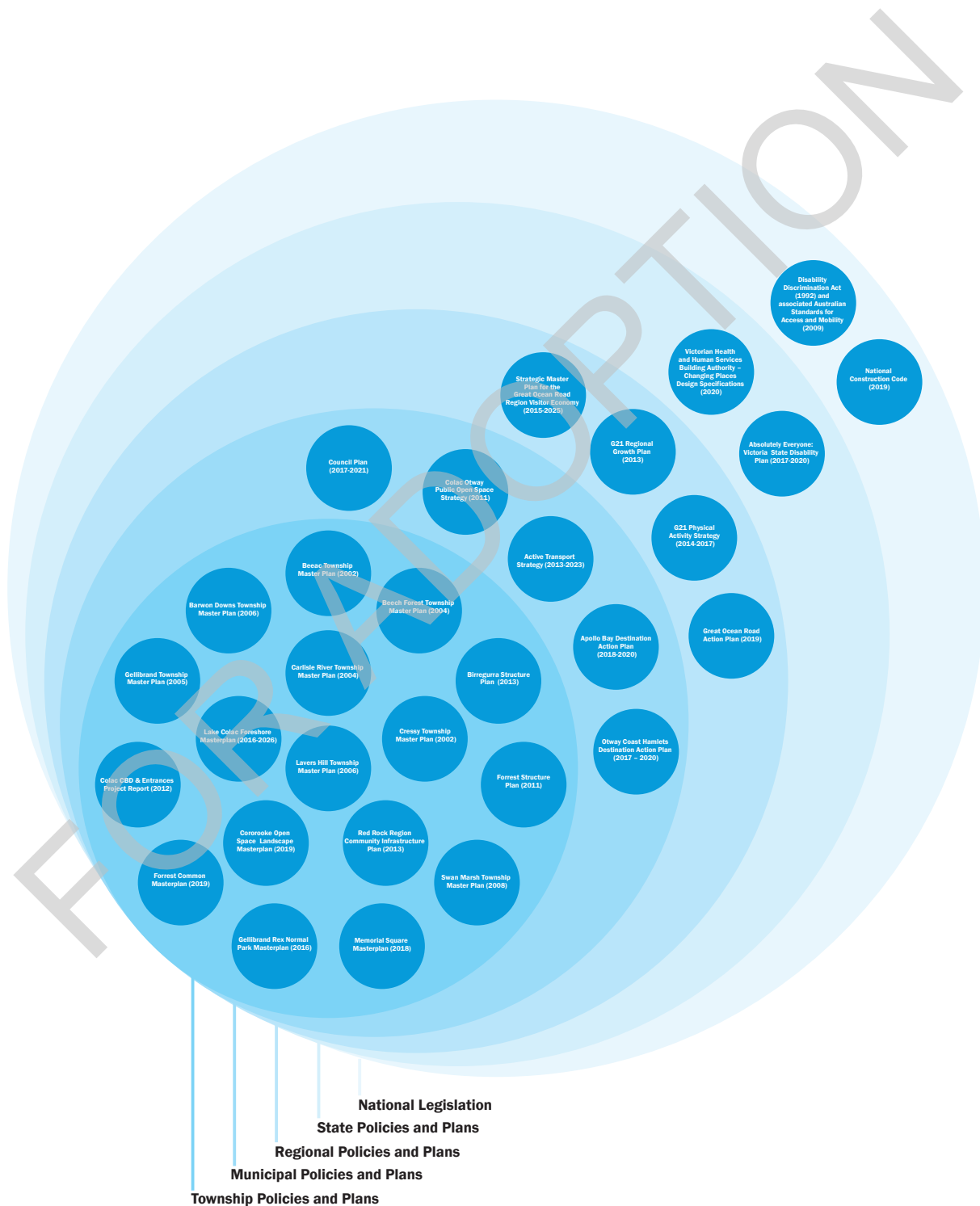


Figure 8: Legislative and Policy Framework for the Public Toilet Strategy



## Key Policy Implications

A detailed review of the legislative and policy framework was undertaken for the Background Review, which identified the following key messages relevant to public toilets:

- Under the Disability Discrimination Act (DDA), new public buildings must be accessible to people with a disability.
- The Building Code of Australia (BCA) requires that new buildings comply with AS1428, which includes a suite of guidelines for the design of circulation spaces, at-grade access, design fixtures and fittings (including height and spacing), floor surfaces, and lighting. Facilities which meet these standards are commonly referred to as DDA-compliant.
- However, some people with more profound disability and high support needs are unable to use standard accessible toilets. Changing Places toilets provide a higher standard of access, with an adult change table, hoist system, greater circulation spaces, and automatic door included.
- Following updates to the National Construction Code in 2019, an accessible adult change facility (based on the Changing Places model) is now required at major public buildings with large occupancies, including:
  - › Large shopping centres
  - › Sporting venues
  - › Museums, theatres, and art galleries
  - › Airports
- The Victorian Changing Places Design Specifications (2020) provides a guide for providers in building these facilities.
- Colac Otway Shire emphasise the importance of accessible public spaces and buildings in the Access, Equity and Inclusion Plan (2015-2025) and the Municipal Public Health and Wellbeing Plan (2017-2021), and several of the township or site-specific masterplans identify opportunities to upgrade facilities to be DDA-compliant.
- The Shire's Council Plan (2017-2021) and Municipal Public Health and Wellbeing Plan (2017-2021) also advocate for public spaces and buildings that are safe, healthy, and attractive and identify the need to improve public toilets and amenities across the Shire.
- The Strategic Master Plan for the Great Ocean Road Region Visitor Economy (2015-2025) recognises that population growth and visitation to the Great Ocean Road will increase pressure on infrastructure

to meet demand, particularly car parking and toilets. Supporting the quality of toilet blocks along the Great Ocean Road is also prioritised in local policy under the Council Plan (2017-2021).

- Community feedback summarised in the Colac Otway Shire Public Open Space Strategy (2011) identifies public toilets as supporting infrastructure necessary to enable open spaces to better cater to users.
- Improvements to toilets is identified as a key action for growing Colac's visitor economy according to the Colac Destination Action Plan (2020-2025).
- According to Council's Open Space Strategy (2011) open space and associated facilities should be located and designed to maximise passive surveillance and protect and enhance the environment.
- The Open Space Strategy (2011) sets out a hierarchy of open spaces that classifies open spaces in the municipality based on typology and catchment area. The hierarchy also specifies which open spaces should have certain facilities, including public toilets.

A comprehensive review of relevant legislation and policy is provided at Appendix B.



Figure 9: Birregurra Public Toilets

## 2.3 Existing Network Summary

### Network Snapshot

The summary of the existing network is based on the audit of Council facilities undertaken as part of the preparation of the Strategy, and supplemented by information from the other managing authorities in the region.

A more detailed analysis of the network against the principles of the Strategy is provided at Chapter 3, and a summary audit provided at Appendix A.

There are currently 89 public toilet facilities in the Shire, primarily concentrated along roadways and in the urbanised areas of Colac-Elliminyt and Apollo Bay. Hinterland public toilet facilities are generally located at campgrounds, trailheads, and other recreation facilities. There are 28 public toilets located in the vicinity of the Great Ocean Road and along the coast within Colac Otway Shire, 9 of which are within the Apollo Bay township. Just over two thirds of these are managed by State Government agencies, with Council managing the remainder (including two in Apollo Bay, two in the Apollo Bay Harbour precinct and one at Paradise Reserve). All toilet facilities in the public network are depicted in Figure 10-12.

Colac Otway Shire Council is the primary provider of facilities in the municipality, with 43 public toilets that are Council-owned.

There are also other government agencies which provide and manage toilets on public lands, including Parks Victoria, Department of Environment, Land, Water and Planning (DELWP), and the Great Ocean Road Coast and Parks Authority (GORA; previously the Otway Coast Committee). Toilets managed by GORA are located at sites along the Great Ocean Road, particularly in Apollo Bay, while DELWP and Parks Victoria toilets are concentrated in parklands and recreation reserves.

Privately owned businesses operate and provide some toilet facilities for use by the public in a variety of locations, such as at restaurants and in shopping centres. Although these facilities are often available for general public use, they are usually provided to service the needs of staff and paying customers.

The Building Regulations 2018 and the Building Code of Australia regulate the provision of toilets in private business settings. These toilets have typically not been included in the scope of this project as they cannot be influenced by Council or other managing authorities in the region as part of the public network. However, two privately-owned toilets have been identified for inclusion in this analysis due to their location within shopping centres in Colac and therefore their role in providing service to the community and visitors of the Shire's primary urban centre.

A small number of Council-owned toilets have also been excluded from the scope of the Strategy. These are facilities which are located within facilities that service members of a certain group, and are therefore not available to the general public.

One Council-owned facility (Carlisle Recreation Reserve - internal) is included in the map and overall audit summary list at Appendix A, but excluded from the analysis of Council facilities as it is not currently operational.

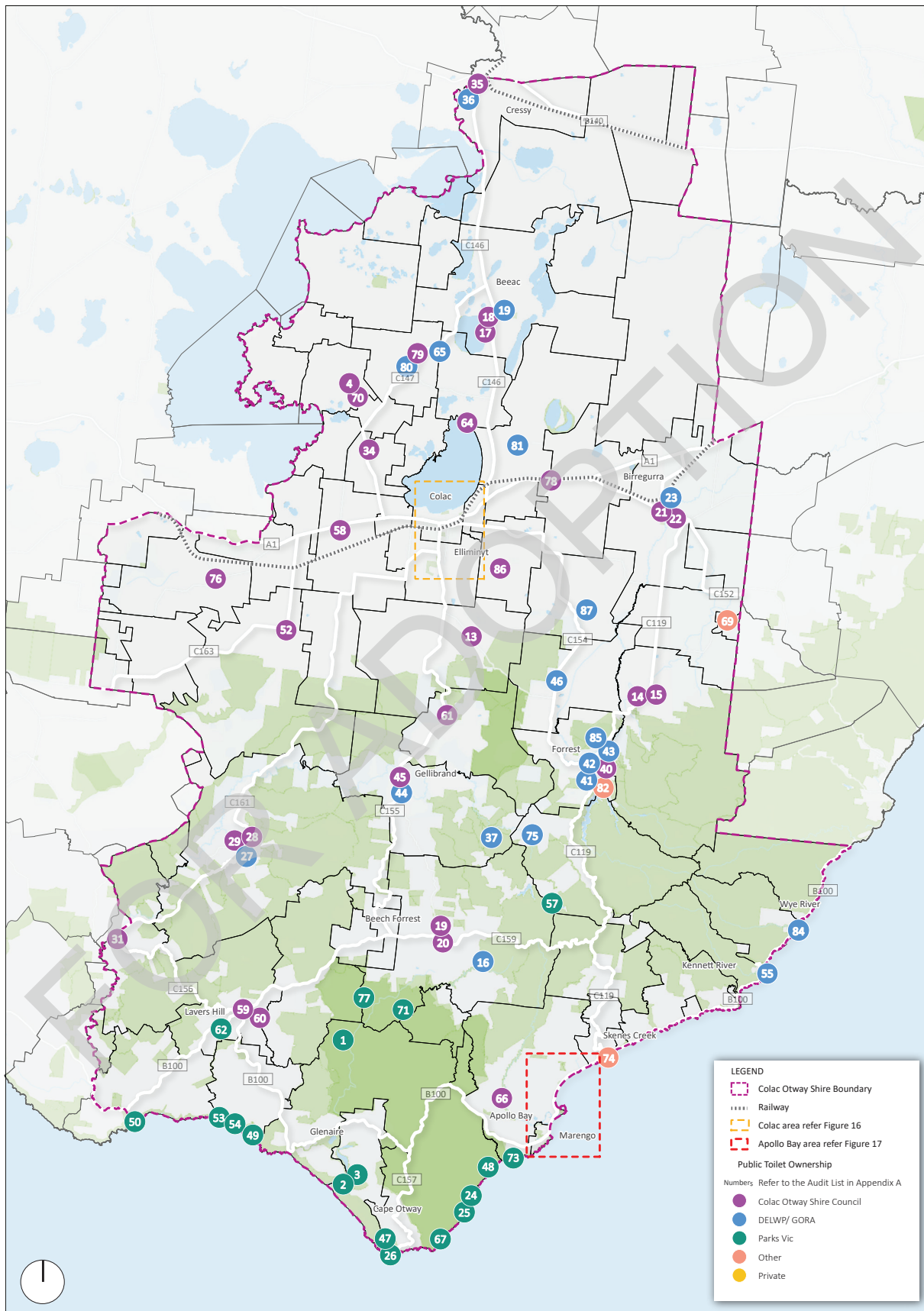


Figure 10: Colac Otway Shire existing public toilet network

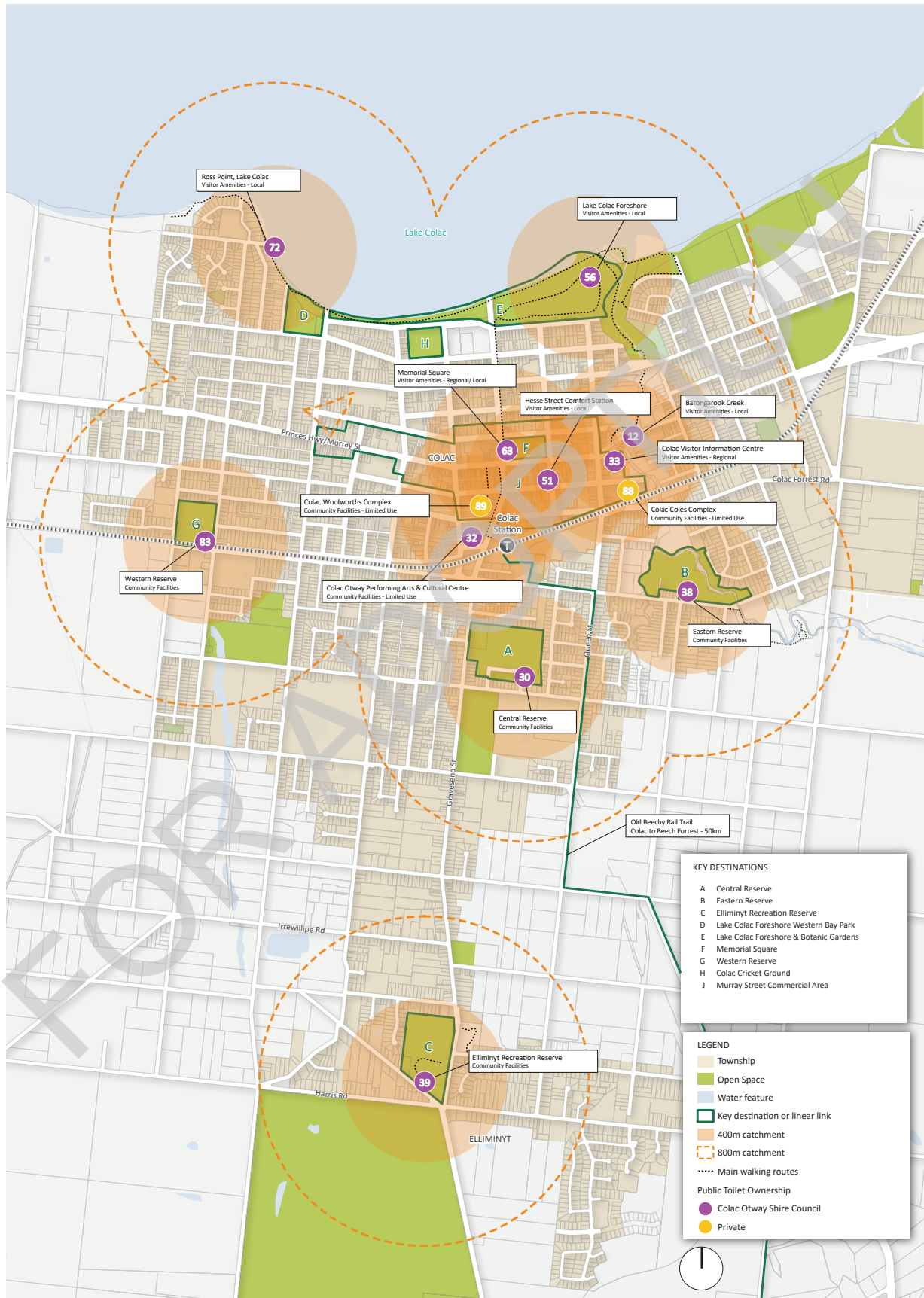


Figure 11: Colac existing public toilet network



Figure 12: Apollo Bay existing public toilet network

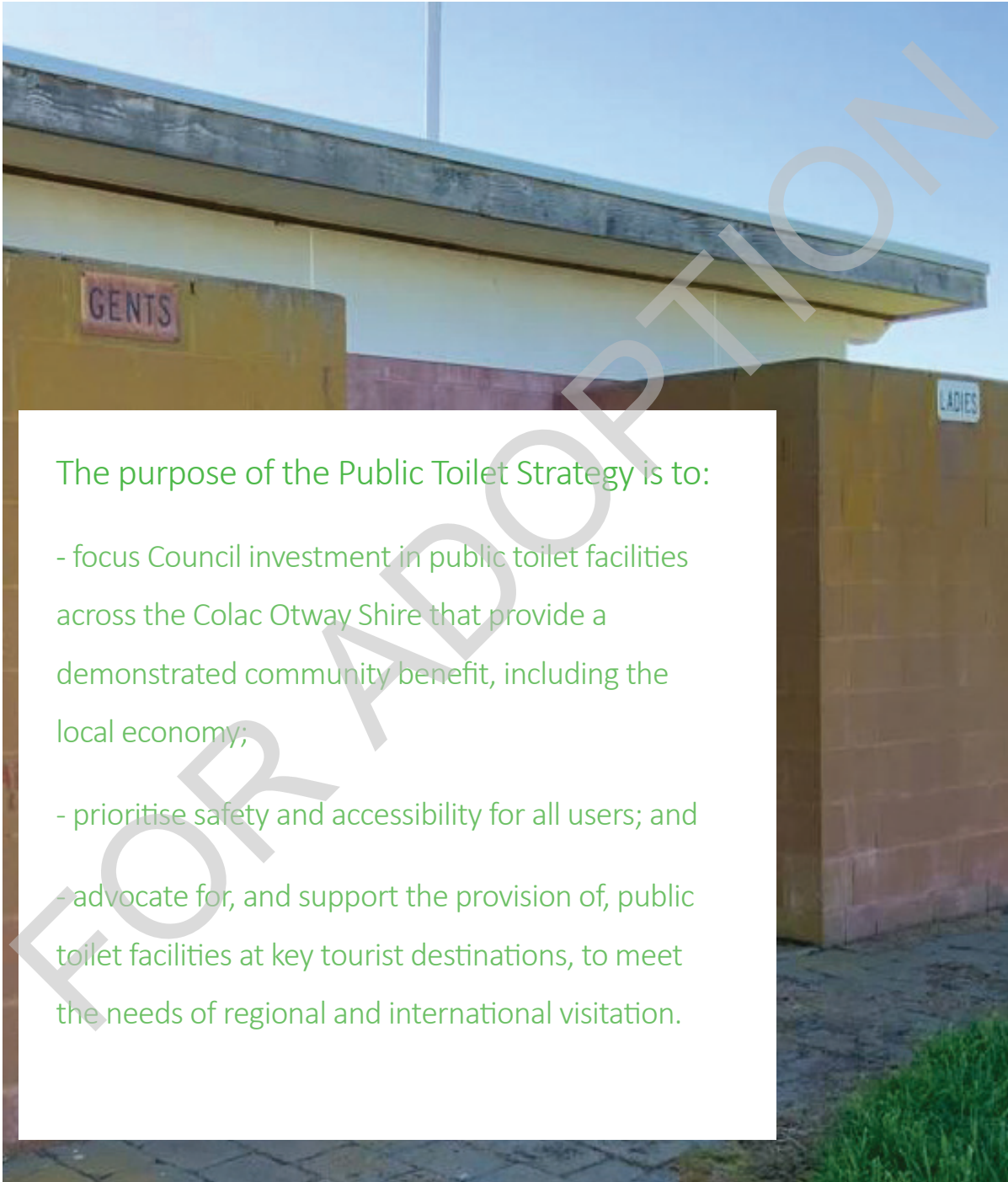
Chapter 3

# STRATEGIC FRAMEWORK



Figure 13: Gellibrand Public Toilets

# 3.1 Purpose



The purpose of the Public Toilet Strategy is to:

- focus Council investment in public toilet facilities across the Colac Otway Shire that provide a demonstrated community benefit, including the local economy;
- prioritise safety and accessibility for all users; and
- advocate for, and support the provision of, public toilet facilities at key tourist destinations, to meet the needs of regional and international visitation.

## 3.2 Use Typologies

All facilities within the public toilet network have been classified by their use typology, which is determined by facility location and dominant user group.

It is acknowledged that many facilities will be used by a number of different user groups. However, classification of toilets by a dominant typology enables analysis of fitness-for-purpose of each facility as well as identification of appropriate management responsibilities (detailed in Chapter 3.4.2), and other aspects of provision.

A description of each Use Typology category is outlined below. Criteria are also provided to assist with determining the use typology of facilities on an ongoing basis (as they may evolve) and for new facilities.

### Campground

Facilities located in park/reserve campgrounds for campers.

- Typically standalone
- Primarily usage- regional visitors
- Open 24 hours
- Typically owned and managed by a non-Council authority
- Usage typically restricted to users of the campground

### Community Facilities

Facilities that are not restricted to certain hours or user groups and are primarily for the community of Colac Otway Shire

- Co-located or standalone
- Primarily serve local residents
- Located in or near commercial centres, reserves, other community facilities
- Owned and managed by Council
- Open 24 hours
- Usage not restricted to members of certain groups (e.g. sports clubs)
- Promoted to the general public through signage / online listings

### Community Facilities - Limited Use

Facilities co-located (often internally) with other social, commercial, and/or recreational facilities that are primarily for user groups of these spaces, but are accessible to the general public during the hours that the facility is in use.

- Typically co-located
- Located in or near reserves and other community facilities
- Primarily service a small catchment of local residents
- Typically owned by Council or DELWP but managed by a Community Asset Committee / Committee of Management
- Usage and opening hours restricted to particular user groups and/or the managing authority
- Not promoted to the general public through signage / online listings



### Visitor Amenities - Regional

Facilities typically located at, or on route to, highly trafficked tourism destinations that primarily serve regional visitors to, or passing through, the Shire.

- Co-located or standalone
- Primarily used by visitors
- Located adjacent to a visitor attraction
- Typically owned and managed by a non-Council authority

### Visitor Amenities - Local

Facilities located at Council owned or managed key destinations (such as the Old Beechy Rail Trail) and retail precincts, that primarily serve visitors coming to spend time within Colac Otway Shire.

- Typically standalone
- Often located along roadways
- Used by a mix of residents and visitors
- Typically owned and managed by Council

The breakdown of use typologies across Council toilets is depicted in Figure 14. Refer to the Audit Summary at Appendix A for individual toilet classifications.

Figure 14 identifies Community Facilities as the most common typology for Council owned public toilets. The second largest typology is Visitor Amenities – Local.

A limited number of toilets have currently been classified with two typologies. These toilets include Memorial Square in Colac and Pascoe Street in Apollo Bay, which have been categorised as Visitor Amenities- Regional and Local. The Barongarook Public Hall toilets have also been given a dual classification of both Visitor Amenities- Local and Community Facilities, in recognition of their use by both the Hall users and recreational walkers using the Old Beechy Rail Trail. This has implications for management and service standards and is discussed further in Chapter 3.4.2.

### Typology

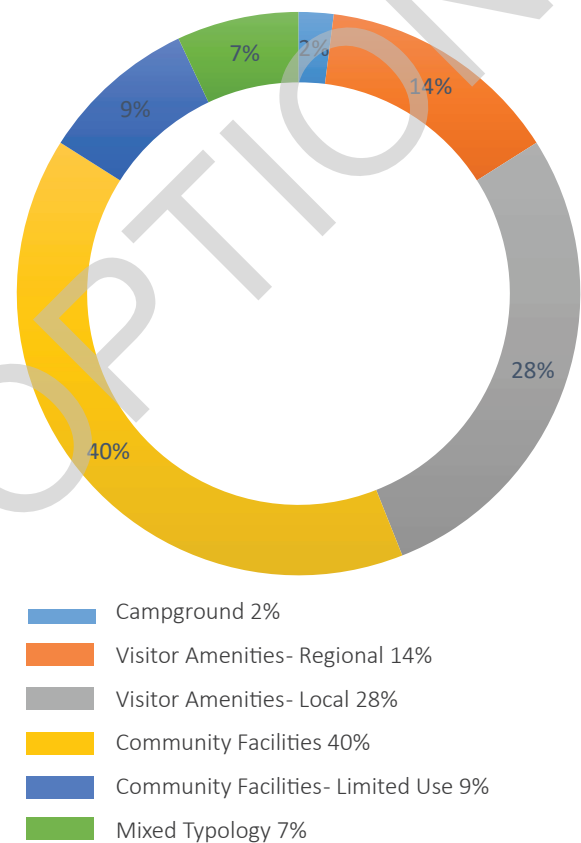


Figure 14: Use typology of Council-owned facilities

## 3.3 Service Levels

### Service Hierarchy

Toilets are also typically classified by their level of service. The Service Hierarchy sets out four different levels of service provision based on different toilet configurations and use typologies.

The purpose of this hierarchy is to guide the level of provision (approximate quantity and configuration of cubicles) for new and upgraded facilities in specific locations. Service levels are determined by use typology and catchment, and also correspond with the opening hours and cleaning frequency of a facility. However, the exact size of a facility is also dependent on demand and therefore a more detailed assessment of demand and forecast usage should be undertaken at the design stage of facility provision.

The Service Hierarchy is shown in Table 1.

A breakdown of the current service levels of most of the existing Council- owned toilets in the network is provided at Figure 15, which demonstrates that most Council facilities are Standard or Standard Plus. No Premium facilities are currently provided by Council. Relevant data was unavailable for 3 toilets to determine their service level.

The service hierarchy recognises that Visitor Amenities facilities typically receive the highest volume of users, often by large groups from tourist coaches, and should therefore likely be provided as Standard Plus or Premium facilities. This may however depend on the context and capacity of an individual site, including the sensitivity of the natural environment, whether reticulated power and water are available, climate change considerations and the proximity of alternative public toilet facilities.

Campground and Community Facilities- Limited Use toilets typically service select user groups (not large catchments) and are therefore most likely Basic facilities.

The service level of Community Facilities is dependent on the catchment of their location or co-located facility, but are most likely Basic, Standard, or Standard Plus facilities.

Designs have already commenced for the Memorial Square public toilets to accommodate unmet demand at this location and this will become the first Premium facility delivered by Council based on a demand assessment, which demonstrated levels of use commensurate with a Premium facility.

Proposed service levels have not been identified for all facilities as they must be determined based on data collection and demand assessment at each facility as well as other factors such as Use Typology.

### Service Level

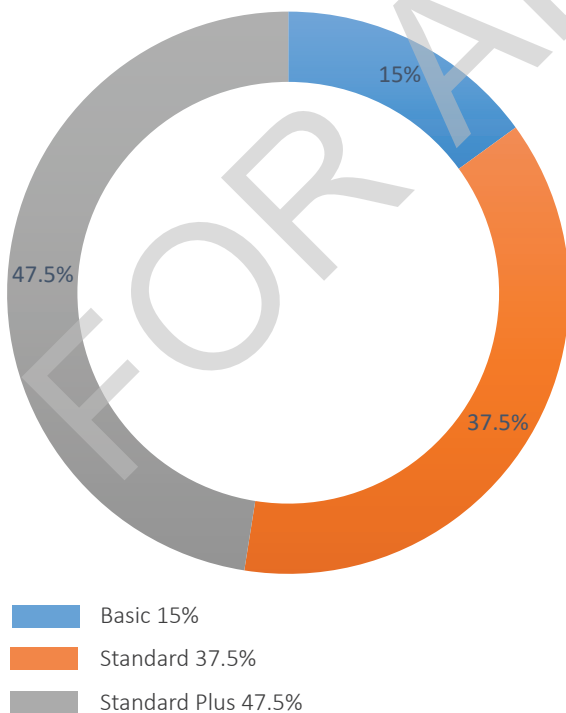


Figure 15: Current Service Level of Council-owned facilities

Table 1: Service Hierarchy

LEVEL OF SERVICE	DAILY AVERAGE VISITATION - CURRENT & FORECAST	CONFIGURATION	MIN. CUBICLES	USE TYPOLOGY	LOCATIONS/ CATCHMENTS	CLEANING FREQUENCY
Basic	Less than 100 people per day	Individual cubicle(s) comprising at minimum: <ul style="list-style-type: none"> <li>• One all gender cubicle</li> </ul>	2	Community Facilities Community Facilities- Limited Use Campground Visitor Amenities - Regional in environmentally sensitive locations	Township / District open spaces Local activity/ commercial areas Other moderate use locations	1x- 5x / week
Standard	101-500 people per day	Individual cubicles comprising at least: <ul style="list-style-type: none"> <li>•One all gender, disabled cubicle</li> <li>•One male and two female cubicles (or two all gender cubicles)</li> </ul>	3-4	Community Facilities Visitor Amenities - Regional in environmentally sensitive locations	Township / District or Regional open spaces Local activity/ commercial areas Other moderate-medium use locations	x2 / week- 1x / day
Standard Plus	501-1,000 people per day	Individual cubicles comprising at least: <ul style="list-style-type: none"> <li>•Two all gender, disabled cubicles</li> <li>•One male and one female cubicle (or two all gender cubicles)</li> </ul> OR <ul style="list-style-type: none"> <li>•Toilet block comprising: <ul style="list-style-type: none"> <li>•One all gender, disabled toilet</li> <li>•Split gender cubicles</li> </ul> </li> </ul>	4+	Community Facilities Visitor Amenities - Local	Township / District or Regional open spaces Colac or Apollo Bay activity/ commercial areas Key visitor sites Other medium-use locations	5x / week- 2x / day
Premium	1,000+ people per day	Individual cubicles comprising: <ul style="list-style-type: none"> <li>•One all gender, disabled toilet</li> <li>•One all gender/ ambulant/ family friendly toilet</li> <li>•At least one male and one female cubicle (or two all gender cubicles)</li> <li>•May include a changing places facility</li> </ul> OR <ul style="list-style-type: none"> <li>•Toilet block comprising: <ul style="list-style-type: none"> <li>•One all gender, disabled toilet</li> <li>•Split gender cubicles</li> <li>•May include a changing places facility</li> </ul> </li> </ul>	5-8+	Visitor Amenities - Local Visitor Amenities- Regional	Regional or State open spaces Colac or Apollo Bay activity/ commercial areas Key visitor sites Other high-use locations	5x / day +

Table 1 provides a guide for levels of service. The significance of a location and sensitivity of context will also influence the service level ultimately selected.

### Examples of Basic Toilets



1. Lois Twohig Reserve, Greater Dandenong

### Examples of Standard Toilets



- 2. St Leonards Beach, Greater Geelong
- 3. Nambucca, NSW
- 4. Torquay, Surf Coast

### Examples of Standard Plus Toilets



5. Springvale Reserve, Greater Dandenong  
6. Middle Brighton, Bayside

### Examples of Premium Toilets



7. Sydney, NSW  
8. Dandenong Park, Greater Dandenong  
9. Walla Mulla Park, NSW

## Fixtures and Fittings

Standard suites of design and siting principles and fixtures and fittings have been developed to guide the provision and design of new toilets having regard to the Principles explored in Chapter 3.4. In addition to the standard suite, a number of site-specific features have been listed. These features should be installed in premium public toilets, or in locations where there is a demonstrated community need. The suite should be used as a guide only.

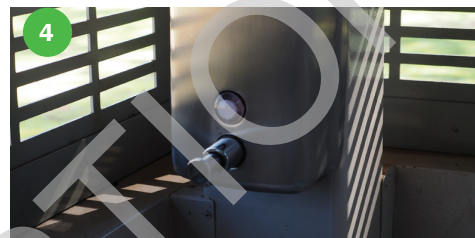
Preferred Fixtures and Fittings are shown in Table 2.

Table 2: Preferred List of Fixtures and Fittings

LEVEL OF SERVICE	INTERNAL FEATURES TOILET CUBILE	INTERNAL FEATURES AMENITIES	EXTERNAL FEATURES
Standard list of materials, fixtures and fittings	<ul style="list-style-type: none"> <li>• Touch free fixtures &amp; fittings</li> <li>• Stainless steel toilet</li> <li>• Toilet Seat</li> <li>• Dual flush</li> <li>• Concealed cistern and pipes</li> <li>• Paper sheets</li> <li>• Sanitary napkin disposal</li> </ul>	<ul style="list-style-type: none"> <li>• Touch free fixtures &amp; fittings</li> <li>• Stainless steel hand basin</li> <li>• Tempered water tap</li> <li>• Baby Change table</li> <li>• Internal lighting (if open at night)</li> <li>• Non-slip surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Signage showing opening hours, gender configuration, basic contact information</li> <li>• At grade pathway access</li> <li>• Weather protection</li> <li>• At-grade pathway and access</li> <li>• Low level, drought resistant planting</li> <li>• Artificial lighting</li> </ul>
Optional materials, fixtures and fittings for Premium/high use locations or other site-specific toilets*	<ul style="list-style-type: none"> <li>• Touch free fixtures &amp; fittings</li> <li>• Jumbo rolls</li> <li>• Urinal</li> </ul>	<ul style="list-style-type: none"> <li>• Electric hand dryer</li> <li>• Sharps disposal</li> <li>• Mirror</li> <li>• Rubbish bins</li> </ul>	<ul style="list-style-type: none"> <li>• Automatic locking doors</li> <li>• Communal hand wash basins</li> <li>• Screening</li> <li>• Public art</li> </ul>
Disabled and ambulant toilets	In accordance with AS1428	In accordance with AS1428	In accordance with AS1428
Changing Places Facilities	In accordance with Changing Places guidelines	In accordance with Changing Places guidelines	In accordance with Changing Places guidelines

Notes \*The use of specific fixtures and fittings should be considered on a site-specific basis. For example, in high use locations where accommodating the maximum number of people is a priority, fixtures such as urinals and jumbo rolls should be considered, while at environmentally-sensitive sites, some fixtures may not be appropriate.

### Examples of Standard Fitting & Fixtures:



1. Appropriate wayfinding
2. At grade pathway access
3. Touch free fittings
4. Vandal proof soap dispenser

### Examples of Fitting & Fixtures for Premium and Standard Plus Facilities:



5. Vandal proof electric hand dryer
6. Urinals with mirror
7. Communal hand wash basins

## 3.4 Principles

PRINCIPLE	DESCRIPTION
<b>Adequate Provision</b>	<p>Public toilets are to be provided at key activity nodes with provision aligning to existing and anticipated demand, associated infrastructure, and the target user group(s).</p> <p>Provision will seek to maximise the utility of the existing network by identifying opportunities for refurbishment, expansion, consolidation, or alternative operational models of current facilities before recommending new facility locations.</p>
<b>Maximum Economic Benefit</b>	<p>Public toilets that primarily cater to the tourist market will be designed and managed in a manner that drives economic return to the local community and sited in locations that exhibit the highest levels of tourist visitation.</p> <p>Council will consider alternative operational models and opportunities for public-private partnerships through collaboration with other public authorities</p>
<b>Environmentally Responsible</b>	<p>Public toilet design, siting and management will reflect organisational environmental objectives and consider impacts associated with the development or continuation of services at sensitive sites.</p>
<b>Quality and Safe Design</b>	<p>The safety of the community will be prioritised with facilities designed and sited to align with CPTED (Crime Prevention through Environmental Design) principles.</p> <p>New and refurbished facilities will be inviting, well designed and appropriate for their setting.</p>
<b>Equitable Access</b>	<p>Public toilets will be designed and redeveloped to consider equity and accessibility for all users.</p> <p>Council will achieve DDA compliance in all new and upgraded facilities.</p>
<b>Well Maintained and Hygienic</b>	<p>Public toilets will be maintained at a level that ensures Council's public toilet infrastructure and condition meet user expectations as well as public health and hygiene standards. Smart technology and other methods may be employed to monitor usage patterns and inform operational responses.</p>



## 3.4.1 Adequate Provision

Municipal public toilet strategies often make recommendations for the location and distribution of toilets based on walkable catchments from key nodes of activity, particularly open spaces and commercial centres. This approach was developed by the Heart Foundation (Healthy by Design) and is generally used as a best practice approach to locating key facilities and services.

A review of other municipal public toilets strategies across Victoria found that typical recommended catchments include:

- a 5-minute walk (400 metres) from major public open spaces and activity centres;
- a 10-minute walk (800 metres) from most residential areas; and
- a 1-2-minute walk (150 metres) from higher order play spaces.

However, rural and regional towns and settlements tend to have much lower housing and population densities than metropolitan settings, meaning fewer people spread over a wider spatial area, often on large allotments. It is not generally feasible to provide toilets within 800 metres of rural residential areas.

The Shire's rural/regional setting and significant tourist visitation create other locational needs for public toilets. Determining an appropriate level of distribution must also take into account the need to provide facilities in smaller townships where visitors are being encouraged to stop and spend time to support the local economy, at heavily trafficked regional attractions, and at public campgrounds.

Public toilet facilities in the Shire should therefore be distributed to service:

- Key destinations, tourist activity nodes and campgrounds (refer to pages 32-36 for more discussion on key destinations). In urbanised centres, facilities should be within 400 – 800 metres of the key destination. Within shopping precincts a public toilet should be provided within the area to service a 400m walkable catchment.
- Open space reserves, including key recreational linear links, with facilities that attract higher levels of visitation and longer stays. In higher-order open spaces that contain a playspace, public toilet facilities should be located within 150 metres of the playspace. For linear links, toilets should be provided to support recreational usage and encourage use of the link for active transport.
- Community facilities, such as halls and sporting reserves, that serve a broad population catchment based on demonstrated high levels of demand and visitation, supported by data collection.

It is important to note that this section considers spatial distribution needs having regard to toilet typologies and has not considered which agency (e.g. Council, State Government, Community Asset Committee) should be responsible for the provision or ongoing maintenance and operation of a facility. This issue is considered at Chapter 3.4.2.

Further, it is emphasised that this chapter focuses on adequate provision in terms of the location of a facility rather than the size of the facility (i.e. number of cubicles). The exact size of a facility should be determined partly via the Service Hierarchy (refer Chapter 3.3) as well as demand. A more detailed assessment of demand and forecast usage should be undertaken at the design stage of facility provision.

## Colac

Figure 16 depicts the distribution of facilities across the urbanised area of Colac (including Elliminyt). The map identifies key destinations from which walkable access (400-800m, but preferred maximum of 400m) to a public toilet should be provided.

Key destinations for Colac include major sporting reserves, Lake Colac Foreshore, Memorial Square, the Barongarook Creek Shared Trail and the Colac Commercial Centre. These are outlined on Figure 16. It is also worth noting, that the Colac 2050 Growth Plan (2019) identifies an additional key open space corridor along Deans Creek which may need to be included as part of a future review of the Public Toilet Strategy.

Most key destinations are within 800 metres of a public toilet and the Colac shopping centre and commercial district is well provided for. The analysis shows that public toilet facilities could be provided at the western end of the Colac Commercial Centre, however it is noted that privately operated toilets are currently available to patrons at that end of the precinct. At present, public toilet facilities are concentrated at the eastern end of Murray Street where, on a location basis alone, there may appear to be an over-provision of facilities. Taking into account the differing typologies and primary users of the toilets in this area however, many facilities serve different and necessary functions (e.g. Memorial Square – regional and local visitation, Colac Otway Performing Arts and Cultural Centre – community facilities with limited use, private supermarket complex toilets – for customers).

The Hesse Street Comfort Station is currently in an area of over-provision, as Memorial Square toilets also service this area. It is recommended that the Hesse Street Comfort Station is further investigated to better understand usage and demand and whether it has a role within the public toilet network.

A further gap in network distribution is identified along the western portion of the Lake Colac foreshore. Redevelopment of the foreshore as per the Lake Colac Foreshore Masterplan (2016) presents an opportunity to develop public toilets at Western Bay Park. This would improve the distribution of facilities in this precinct.

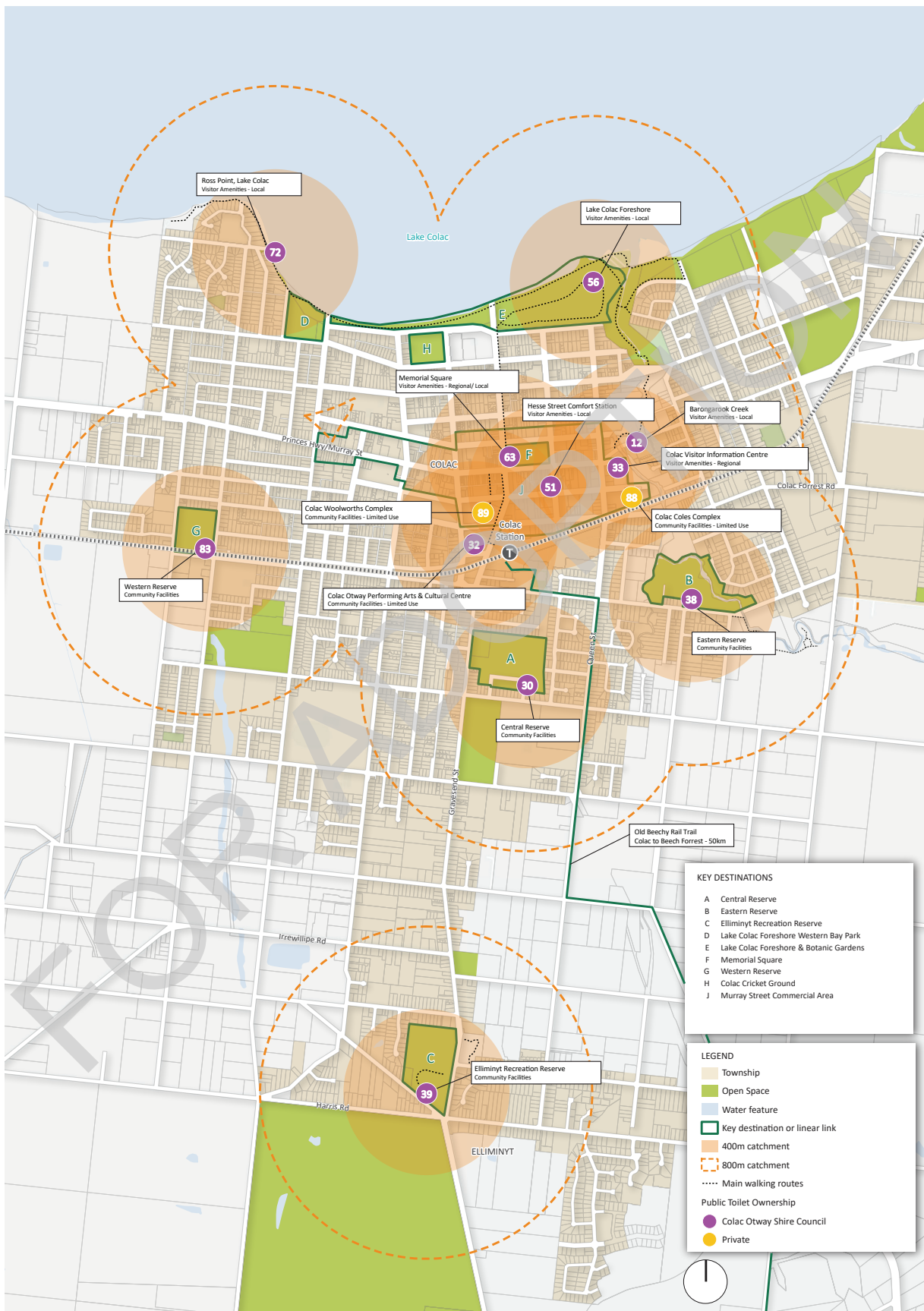


Figure 16: Spatial distribution of toilets in Colac and Elliminyt

## Apollo Bay

Apollo Bay is the second largest town in Colac Otway Shire with a small permanent population, but as a holiday destination the population swells significantly to over 15,000 people during peak periods. In addition to longer stay visitors, Apollo Bay attracts large numbers of day visitors and is noted as a stopping point for tourist coaches during the middle of the day.

Apollo Bay also services the broader region with supermarkets, restaurants, cafes, retail shops and other business services providing essential needs for nearby towns and settlements.

These characteristics place considerable pressure on township infrastructure, and in particular public toilet facilities. Concerns have been raised in recent years about the location, quantity and quality of public toilets in Apollo Bay and in particular around whether they are located to coordinate with coach parking areas.

Figure 17 depicts the distribution of facilities across the urbanised area of Apollo Bay. Overall, Apollo Bay is well-served by a distribution of public toilet facilities; all identified destinations are within 800m of a public toilet.

While the map shows a good distribution of public toilet facilities in Apollo Bay in terms of key destinations (being the foreshore, commercial precinct and Harbour) it doesn't indicate whether the size of the facilities is adequate to meet demand or conveniently located to where coaches tend to park and drop off visitors.

At present there are two sets of amenities near the Visitor Information Centre (VIC), a small facility at the VIC and managed by Council and a larger facility on the ocean side of the VIC managed by the GORA. There are current plans to redevelop the nearby Apollo Bay Surf Life Saving Club, to the south of the existing VIC. This presents an opportunity to consolidate amenities provision in this location, noting they would all be within 400m of each other. The size of the facility at the Surf Life Saving Club would need to be informed by a demand analysis.

Council, in partnership with GORA, are also currently preparing a Community Infrastructure Plan which includes this section of the Apollo Bay foreshore. As part of this Plan, opportunities have been identified for a coach/bus drop off point just to the north of the VIC along the Great Ocean Road. It would be appropriate therefore to retain at least one amenities block at the VIC to service these visitors, with the potential Surf Club public toilets servicing the foreshore area further to the south.

The Pascoe Street commercial area in Apollo Bay is currently serviced by temporary facilities. These toilets were installed in recent years to primarily service visitors based on public health concerns presenting through the use of the area as a drop off point for tourist coaches.

The Pascoe Street toilets are proximate to toilets along the foreshore. These toilets however, support not just the attraction of the foreshore itself but an element of local visitation likely to provide an economic benefit to the Apollo Bay Commercial Area and for this reason have been assigned a dual typology (Visitor Regional and Local). It is noted that the Community Infrastructure Plan has identified an alternative location as a coach drop off point, but it is also understood that the adopted Colac Otway Shire Tourism Parking and Traffic Strategy recommends re-routing large vehicles along Pascoe Street over the Great Ocean Road. This is likely to have the effect of retaining this area as a popular stopping point. The facility is well located in terms of available car parking nearby and there is through access nearby to the Great Ocean Road retail shops and foreshore beyond. It is recommended that further investigation into constructing permanent toilets at this location be undertaken, giving due consideration to the size of the facility based on a demand analysis and responsibility for provision and maintenance of the facility having regard to the criteria outlined in Chapter 3.4.2.

There are temporary portable public toilets located at the Apollo Bay Harbour precinct, one set at Mothers Beach and the other at Point Bunbury. Council has recently adopted a Harbour Development Plan for this precinct which provides for new public amenities facilities at both locations. Design for the Mothers Beach toilets, which will form part of a new Port Depot building, are currently underway.

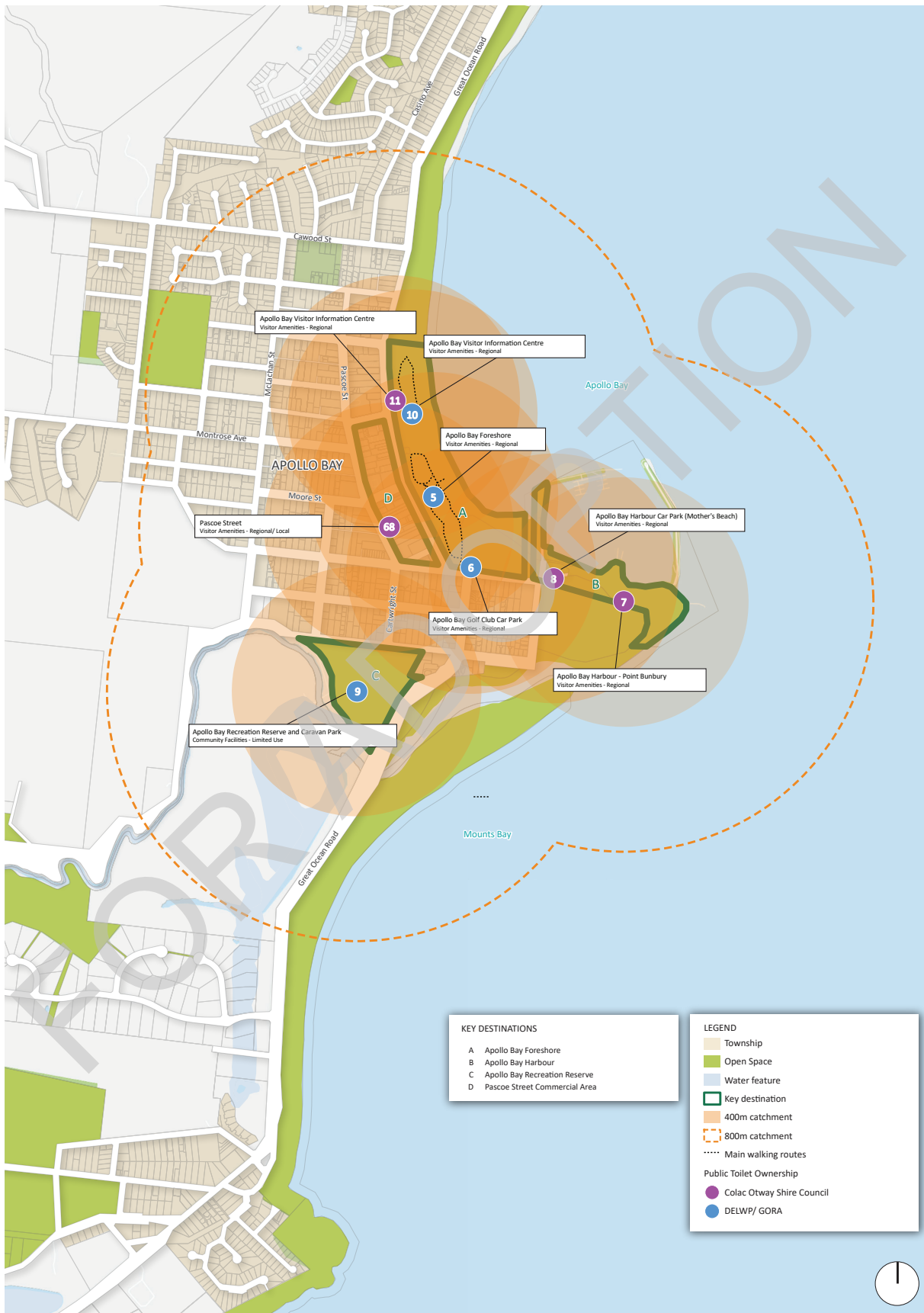


Figure 17: Spatial distribution of toilets in Apollo Bay

### Other Key Destinations and Tourist Activity Nodes

Colac Otway Shire has a diverse offering of visitor attractions. These include sites of natural significance sometimes in remote settings, coastal holiday towns and camping spots and inland experiences such as Red Rock lookout, the Old Beechy Rail Trail and mountain bike trails through the Otways. As noted in Chapter 2.1, tourism is a key industry for Colac Otway and generates significant spend in the local economy. Providing high quality public toilets at convenient locations enhances visitor experience and encourages return visitation. Public toilets should be provided in smaller townships or hinterland areas to service community facilities that generate sufficient demand, or at key visitor sites which serve regional or local tourism.

There are no national or state guidelines to help determine the required level of visitation to a site that might generate the need for a public toilet, or standard distances between public toilets that might be reasonable for car or bus based visitation. Generally, it is not economically feasible to provide public toilets at all locations where visitors might stop and thus identification of key destinations has been undertaken for the Colac Otway Shire (outside the urban areas of Colac and Apollo Bay) to help guide toilet provision at tourist locations.

#### Regional:

- Great Otway National Park: toilets provided at visitor sites within the park, typically co-located with parking, camping, and/or trailhead facilities
- Cape Otway Light Station
- Kennett River: a popular tourist attraction on the Great Ocean Road to see koalas and birds
- Great Ocean Road smaller townships

#### Local:

- Old Beechy Rail Trail (Colac-Ferguson): facilities currently provided at Barongarook Hall, Colac Performing Arts & Cultural Centre, Kawarren, Gellibrand, and Beech Forest
- Forrest: receives significant mountainbike tourism and visitors to the nearby Otway Forest Park and Great Otway National Park.
- Birregurra: popular retail precinct for the community and tourists

- Lavers Hill: highest point on the Great Ocean Road, located inland, popular tourist spot with small commercial precinct
- Any other small retail or commercial precinct which services both the local community and tourists focusing on local Colac Otway Shire attractions.

Most of these locations currently contain a public toilet, however some smaller coastal townships are not currently serviced by a facility. Consideration should be given to toilet provision where visitation is high and extended stays are encouraged, e.g. popular swimming beaches with picnic facilities, strategic points along recreational walking trails.

Located at the highest point on the Great Ocean Road, and noted for its scenic beauty, Lavers Hill is a popular stopping point for visitors offering access to many of the Otways attractions in various directions. Lavers Hill currently hosts two separate facilities operating as public toilets. One is located on the roadside more central to the retail precinct and is an ageing building in fair condition, and one adjacent to the Lavers Hill Public Hall (offering a disabled facility). From an ongoing maintenance and management perspective it would be appropriate to investigate the opportunity to consolidate public toilet facilities in Lavers Hill and upgrade a set of amenities to cater to all users. As part of this investigation, Council should collect data and consult with the local community to understand patterns of use and demand for facilities in order to determine facility requirements (e.g. number of cubicles and levels of service) and the most appropriate location/s.

## Open Space

The Colac Otway Public Open Space Strategy (POSS) provides a set of standards for the provision of infrastructure within open spaces, including public toilet facilities. It provides guidance as to when public toilets should or should not be provided for various types of public open space (neighbourhood, township, regional or State). These standards are outlined in Table 3.

It is important to note that these standards are a guide only and the provision of public toilets at open spaces should respond to the unique needs of each site, which may differ significantly according to the use and function of the space. The POSS was prepared in 2011 and the use and function of some spaces may have changed over time. The POSS does not explain the reasoning behind the recommended standards for toilet provision and consideration of new facilities should have regard to demand and the broader network provision as outlined in this chapter.

For example, it is noted that the standards recommend providing public toilets at all sports reserves, regardless of size and catchment. Many smaller sporting reserves across the Shire may comprise limited facilities, such as a small number of tennis courts, that primarily cater to the sports club(s) that utilises the space. In these circumstances there may be a requirement for limited use facilities to service the needs of reserves users only but no demand for facilities that are available to the general public.

The POSS does not recommend toilet provision along linear open space corridors of neighbourhood or district level. Where these linear corridors contain popular recreational walking trails or active transport routes it may well be appropriate to provide public toilets, for example at Barongarook Creek. This Strategy recommends providing toilets along linear links with higher visitation levels to support recreational usage and to encourage active transport modes of travel.

The POSS does not specifically address toilet provision at parks with playground facilities. Open spaces that contain higher-order playground facilities should locate public toilet facilities within 150 metres of the playground in order to best support the needs of families with young children, as they are unable to walk longer distances to access facilities.

Table 4 identifies Council owned open space reserves containing public toilet facilities in the Shire which are inconsistent with the standards shown in Table 3. It outlines additional considerations relevant to provision that may provide justification for facilities even though provision may not be in accordance with the POSS standards. Table 4 also includes Council owned reserves where the provision or upgrade of public toilets is not inconsistent with the standards but where specific recommendations have been made about toilet provision in the POSS.

There are six toilets listed in Table 4 which according to the POSS 'must not have' public toilets. However it is evident from an analysis of these facilities that there are other characteristics of these sites (such as local tourism or camping) which may generate the need for public toilets.

The toilets at Cressy may need further investigation. They are located close to a playground, but it is a small playground designed to service the local community rather than visitors. The toilets are currently used as a rest stop by visitors passing through, but are unlikely to provide benefit to the local economy of Cressy and would not meet the criteria to be considered as Visitor Amenities - Local. Other toilets are located a 15 minute drive away at Beeac which meet this criteria. There is anecdotal evidence however that the toilets do generate quite high demand. These facilities should be further investigated to determine their community benefit.

It is clear from Table 4 that the standards outlined in the POSS may not always provide the full picture. It is recommended that any subsequent review or update to the POSS should reconsider toilet provision in the context of the recommendations of the Public Toilet Strategy.

An analysis of the Shire's public toilet network has also identified some open space reserves which may require further investigation in regard to toilet provision.

The Carlisle River Recreation Reserve site currently accommodates two toilet facilities. Only the facility external to the clubhouse is currently operational, while the facility internal to the clubhouse is in need of refurbishment. The location services a small catchment. There is a small playground at the Reserve. Generally, this type of Reserve would only provide one set of facilities to service sports clubs and other specific user groups of the Reserve. Two sets of toilets is considered an over provision. The preferred location for toilets would be internal to the clubhouse. It may be more cost effective in this case however to refurbish the external toilets and there may be other reasons why they are required for wider community use and may provide a demonstrated community benefit. Council should further investigate the type of toilet required for the Reserve, and the costs associated with a future upgrade and operation of facilities, in consultation with the community with a view to decommissioning one set of toilets.

Council currently provides a public toilet facility at Loves Creek Reserve in Kawarren. However, there is community demand to refurbish an existing toilet facility at the nearby Recreation Reserve managed by DELWP. A facility at this location would result in improved walkable access from the playground, tennis courts, and other community facilities and would no longer necessitate the existing Council facility. A facility at the reserve would also provide closer access for users of the Old Beechy Rail Trail than the location of the existing toilets.

Table 3: Standards for public toilet provision in open spaces, Public Open Space Strategy (2011)

Category of Open Space	Neighbourhood	Township / District	Regional	State
Parkland	xx	✓	✓✓	N/A
Formal Gardens	N/A	✓	✓	N/A
Linear Open Space and Corridor	xx	xx	✓	N/A
Sports Reserve	✓	✓	✓✓	N/A
Natural Areas	x	✓	✓	✓

✓ = might have    ✓✓ = must have    x = should not have    xx = must not have    N/A = not applicable



Table 4: Public Toilet Recommendations - Public Open Space Strategy (POSS)

OPEN SPACE RESERVE	POSS STANDARD* OR RECOMMENDATION	CLASSIFICATION IN THE PUBLIC TOILET STRATEGY & OTHER CONSIDERATIONS
Apollo Bay Harbour (Mothers Beach and Point Bunbury)	Upgrade the public toilets and provide changing facilities.	<ul style="list-style-type: none"> <li>Classified as Visitor Amenities – Regional. Portable toilets have been installed. New toilets planned at both Mothers Beach and Point Bunbury as part of the implementation of the Harbour Development Plan.</li> </ul>
Barongarook Creek, Colac	Township – linear xx	<ul style="list-style-type: none"> <li>Classified as Visitor Amenities. Toilets located along a linear recreation walking trail. The park has undergone a recent upgrade with additional community facilities. The toilets service the Barongarook Creek Trail users and also have a high level of visitor demand being located close to the Princes Highway.</li> </ul>
Beac	Neighbourhood – parkland xx  However, the POSS also contains a recommendation to renovate and upgrade the public toilets	<ul style="list-style-type: none"> <li>Classified as Visitor Amenities. The combination of shops, playground, Windmill Park and lake warrant retaining these toilets as they have a wider community benefit and support the local economy. The toilets have undergone a small upgrade in recent years in line with the Beac Township Master Plan.</li> </ul>
Beech Forest – John Gardiner Reserve	Neighbourhood – parkland xx	<ul style="list-style-type: none"> <li>Classified as Visitor Amenities. The combination of shops, playground, Windmill Park and lake warrant retaining these toilets as they have a wider community benefit and support the local economy. The toilets have undergone a small upgrade in recent years in line with the Beac Township Master Plan.</li> </ul>
Cressy	Neighbourhood – parkland xx	<ul style="list-style-type: none"> <li>Classified as Community Facilities. The toilets are located close to a small playground designed to service the local community rather than visitors. They are currently used as a rest stop for through traffic but there is no demonstrated benefit for the local economy from these visitors.</li> </ul>
Irrewillipe Recreation Reserve and Public Hall	POSS recommends improving facilities at the Reserve.	<ul style="list-style-type: none"> <li>Classified as Community Facilities – Limited Use. Improving facilities at this Reserve is a high priority for Council. They are required to service Reserve and Hall users but not the general public.</li> </ul>
Meredith Park	Neighbourhood – parkland xx	<ul style="list-style-type: none"> <li>Classified as Campground. Public toilets at this site support its use as a free camp site.</li> </ul>
Red Rock	Playground area is Neighbourhood – parkland xx  Lookout is State – natural area ✓	<ul style="list-style-type: none"> <li>Prepare an overall plan for the different components of the Reserve, i.e. the picnic area component, the upper car park and lookout, to provide coordinated facilities for visitors. This plan could include the upgrading of the interpretive displays and the rationalising and upgrading of key visitor facilities.</li> <li>Classified as Visitor Amenities- Local. Public toilets at this site are located close to the playground and support the lookout which is an Aboriginal Cultural Heritage Site.</li> </ul>

✓ = might have    ✓✓ = must have    x = should not have    xx = must not have    N/A = not applicable

\* Refer to Table 3 for more explanation of POSS standards.

### Community Facilities

As noted previously, provision of public toilets at community facilities, such as public halls and sporting reserves, will generally only be provided where they are considered a higher order facility servicing a large catchment. At smaller facilities, toilets may still be provided but they will be "limited use" toilets available to specific user groups during their use of a facility and not open to the general public.

As part of the analysis of existing public toilets in the Shire, a number of toilets have been identified which currently service the general public but perhaps should more appropriately only serve specific users of a particular facility due to their small catchment size.

The typology classification of toilets at the following locations should be considered for conversion to Community Facilities- Limited Use:

- Larpent Public Hall
- Swan Marsh Public Hall
- Warrion Public Hall

A Limited Use arrangement as part of a broader recreation facility redevelopment could also be considered for the Irrewillipe Recreation Reserve. There is potential to decommission the existing toilets following the provision of a new facility at the Reserve.

### Events & Private Facilities

The use of portable toilets is common practice for large events, and legislative and planning requirements require approval of an event management plan prior the commencement of any large event.

Large events typically generate a significant temporary spike in demand in a concentrated area, and should therefore not rely on the existing permanent network for service. This responsibility to provide adequate toilets (and cover associated costs) lies with the event organiser/ host. Similarly, it is not the role of Council to contribute funds towards any component of toilets required for private commercial use or other government agencies.

## 3.4.2 Maximum Economic Benefit

### Responsibility for Public Toilet Provision

Responsibility for managing all aspects of the public realm within the Shire is shared between a number of different authorities.

According to the Local Government Act 2020, the role of Councils in Victoria is to provide good governance in its municipal district for the benefit and wellbeing of the municipal community. Provision of community facilities and amenities such as public toilets in specific locations supports this aim. Similarly other agencies, such as Parks Victoria, GORA, and DELWP, provide and manage public toilets in locations where there is a visitor demand and longer dwell times.

In Colac Otway Shire, the high volumes of tourist visitation present a unique challenge for the provision and maintenance of public assets, including toilets. Understanding the extent of these responsibilities and the capacity to meet the demand within available resources is a challenge shared by all managing agencies.

Colac Otway Shire Council recognises the important economic contribution of visitors to the municipality and understands that public toilet provision plays an important role in attracting visitors and visitor experience. Council provides toilets at a number of visitor locations and is under increasing pressure as visitor numbers increase for additional toilets, upgrade of ageing facilities and more regular servicing. This role is placing significant stress on Council resources. For this reason, it will be important for Council to carefully consider investment allocation towards provision and management of new and upgraded facilities.

#### Council responsibility

Council should take full responsibility for the provision, ongoing maintenance and operational costs of toilets classified as Community Facilities.

For Visitor Amenities the Council contribution may differ depending on the context, noting that regional (including international) visitation provides benefits to the wider region and in some locations there may not be an opportunity to leverage economic benefits for the local community.

It is recommended that Council should contribute to provision, maintenance and ongoing costs of a facility where there is a demonstrated community benefit, which may include a benefit to the local economy.

#### Criteria for determining Council investment

The following criteria should be used to determine the extent of Council investment in a public toilet facility. The extent of Council contributions will be dependent on the level of community benefit demonstrated at any given facility.

Higher levels of investment should be considered where:

1. the facility primarily services the local community and/or visitors whose key destination is within the Colac Otway Shire and where dwell times will encourage spending and investment in a local area. The level of investment will be equal to the level of local demand eg: the cost of a facility sized only to meet local demand.

Lower levels of investment or no investment should be considered where:

1. the facility will primarily service through traffic or visitors to the wider region (beyond Colac Otway Shire), and the percentage of regional and international tourists is substantially higher than local visitation.
2. there is limited demonstrated economic benefit to the local community e.g. patron numbers that would be attracted to local business, and level of anticipated spend from construction phase through to operational phase.
3. there is a negative impact to local amenity, cultural or environmental values.

#### Investment in Visitor Amenities - Regional

It is recognised that facilities which primarily service regional (and international) visitors and are not expected to generate community and local economic benefit, still play an important role in the wider public toilet network and overall amenity in the Shire.

Although Council's level of investment may be limited in these scenarios, it would be appropriate for Council to advocate for, and support provision of these facilities, including possibly leading funding applications and help to connect project partners.

## Private-Public and Cross-Agency Partnerships

### Shared Service Agreements

At Council-owned sites that demonstrate community benefit but also service a high level of demand from regional visitors and local businesses, Council will consider the need for a Shared Service Agreement (SSA) with another managing authority or Community Asset Committee (CAC).

Community Facilities- Limited Use toilets that are managed by CACs may also be appropriate for SSAs where they demonstrate a wider community benefit but where usage is restricted to limited hours. CACs are typically responsible for cleaning facilities in these circumstances and could therefore benefit from SSA that provide support from Council.

Sites that could be considered for SSA include:

- Apollo Bay Visitor Information Centre
- Alvie Recreation Reserve
- Barongarook Public Hall
- Kawarren Reserve (at the DELWP-owned Recreation Reserve, should a facility be provided here in future)
- Memorial Square
- Yeo Public Hall and Tennis Courts

Council's Public Open Space Strategy includes guidelines for developing stewardship agreements in situations where an asset may service a number of stakeholders. These guidelines could also form the basis for SSAs. The guidelines are:

- The responsibility for developing and maintaining the land and facilities should be clearly defined and documented.
- The risks arising from the agreed arrangements should be defined and documented.
- All facilities and structures provided should be fit for purpose and maintained to a high standard.
- Signage should be provided indicating the role of Council (if appropriate) and the role of the partner organisation.
- Periodic inspections should be undertaken of the facility to ensure that the commitments of all parties are being met.

### Private Facilities

Private toilet facilities supplement the public toilet network and can help to reduce demand on public facilities at busy locations. Shopping centres and many local businesses such as cafés and restaurants are required to provide toilets to service customers. The Building Regulations 2018 and the Building Code of Australia regulate the provision of toilets in private business settings. While private toilet facilities do supplement the public toilet network they cannot be relied upon as part of the network and should not be included as such.

## User-Pays Systems

In many cities across the world, municipal authorities charge a small fee to allow the public to use public toilets. In return for this fee, users are guaranteed a high level of cleanliness and hygiene as well as constant passive surveillance. There a range of challenges associated with a user paid system in municipal localities, primarily the barrier to vulnerable members of the community. There are however many ways that a user paid system can be applied to facilities in a network, and it does not need to apply to all toilets and locations.

User-pays toilets are not typical in Australia and are not the preferred solution to resource stress resulting from provision and maintenance costs. Primarily, the criteria for community benefit and potential for SSAs explored in this Strategy seek to mitigate the burden on Council associated with the provision and ongoing costs of public toilets.

There may be a small number of high-volume visitor sites that would be appropriate for a user-pays system, however, these are typically not Council-owned.

By definition, Council aims to provide public toilets for all members of the public, without barriers to access. User pay systems can discriminate against members of the public on socio-economic grounds and are therefore not recommended for Council managed public toilet facilities.

Other opportunities to raise revenue should be explored to offset the operational costs associated with managing public toilets in high use locations.

## Design Considerations

The design stage of the provision of new and upgraded public toilet facilities should consider ways to minimise up-front and life cycle costs of facilities. Design considerations for economic efficiency include:

- Basic, Standard, and Standard Plus facilities should comprise standardised design features and fixtures and fittings, and minimise custom designs that can vary costs significantly across sites;
- Materials should be durable and user-friendly to minimise damage and maintenance needs and prolong facility lifespan;
- Implementation of Crime Prevention through Environmental Design (CPTED) principles to minimise the vulnerability of facilities to vandalism; and
- Incorporation of Environmentally Sensitive Design (ESD) principles to improve environmental performance.

## 3.4.3 Environmentally Responsible

### Sensitive Locations

Toilets in more regional/rural settings pose unique challenges to the natural environment. Many sites are not fully serviced by sewerage systems and therefore can only accommodate a smaller volume of use and generate significant, costly maintenance needs, needing pumping and/or treatment on site. Historically, some foreshore tourists destinations have even pumped toilet waste directly into the ocean, which puts marine life at risk.

Where larger facilities are connected to sewerage or septic systems, they may consume a large volume of the local water supply, which is costly to the facility manager as well as the environment.

Where new or upgraded facilities are to be provided at a site, it should first be determined if the site is environmentally sensitive. At these sites, their design should prioritise the minimisation of environmental impacts.

Enviro-toilets are a model that achieve a significantly lower environmental impact than traditional toilets. These facilities can be installed almost anywhere and use little to no water, which also minimises maintenance and operational costs. Two examples of this type of toilet are the Kazuba dry toilet from Water Wally and the Composting Toilet from Nature Loo, both Australian toilet/wastewater businesses.

A number of DELWP and ParksVic sites already utilise an enviro-toilet variation to protect sensitive environments. However, it is important to consider that these toilets typically contain a small number of cubicles and by their nature are not designed to cater to a high volume of users each day. They should therefore only be considered for environmentally sensitive sites where Basic or Standard facilities would meet demand.

For sites in very environmentally sensitive locations where enviro-toilets are not feasible/appropriate, new or upgraded facilities should not supply power or water from the main systems and should seek to incorporate Environmentally Sustainable Design (ESD) principles as much as is practicable from a cost perspective.

### Design Considerations

Traditional toilet facilities can incorporate fixtures, fittings, and materials based on ESD principles that greatly improve their environmental performance. Organisations such as the Green Building Council Australia provide guidance on ESD for buildings as well as assessments of facilities. Many Local Governments have adopted policies which guide the design, construction, and renewal of buildings to incorporate ESD principles effectively. Typically, these policies focus on the following themes relevant to public toilet facilities:

- Passive energy design and use (e.g. optimising shade and ventilation);
- Energy use (e.g. minimise artificial lighting, solar electricity hot water);
- Sustainable materials (e.g. recycled and organic materials); and
- Water and waste management (e.g. efficient water fixtures and fittings, stormwater harvesting, and composting).

Table 5 summarises the current provision of some ESD features across Council toilets. Most facilities incorporate some passive energy design and efficient water fixtures, but power and energy are typically provided via the main systems.

Existing facilities can also improve their environmental performance through minor works and ongoing maintenance to facilities, contributing to a gradual transition to more environmentally sustainable facilities. For example, replacing broken water fittings with more water sensitive fittings. However, this should only be undertaken for facilities that are not nearing the end of their lifespan.

Table 5: ESD principles across Council toilets

FEATURE/ COMPONENT	NUMBER OF FACILITIES*
Natural ventilation	33
Natural lighting	25
Powered	37
Water sensitive fittings	28
Solar panels	4
Water treatment via septic system	28
Water supply via main system	34

\*Note that for each feature/ component, provision was unreported for a small number of toilets.

FOR ADOPTION

## 3.4.4 Quality and Safe Design

The design of a public toilet greatly influences its fitness-for-purpose, safety, and accessibility. Design is also important for promoting positive perceptions of public toilets to the community.

### Stand Alone & Co-Located

There are many different ways of categorising public toilet designs with regard to form and typology. Broadly speaking, there are two types of facilities: standalone toilet blocks and co-located facilities. Within each of these there are various different configurations, interpretations and adaptations.

Key features of standalone public toilets are:

- Freestanding (not attached to or within another building structure);
- Externally accessible from public realm;
- Separate male/female entrances or single fronted unit doors; and
- Can include separate or integrated disabled access.

Key features of co-located public toilets are:

- Attached to, or located within a building structure;
- Externally accessible from the public realm or only accessible from within the co-located facility;
- Either separate male/female entrances or single fronted unit doors; and
- Opening hours typically restricted by building and activity (such as sport fixture, training or event).

Standalone toilets are more likely to present various design constraints due to their rigid construction, often resulting in minimal compliance with Australian Standard

1428 (AS 1328). Moreover, toilets that are poorly integrated into their environment can create perceptions of unsafety and lack of privacy. Isolation can exacerbate these challenges.

However, co-located facilities are more likely to be characterised by limited accessibility.

Provision of standalone or co-located facilities influences the fitness-for-purpose and accessibility of a facility, and should therefore correspond with a facility's intended Use Typology. For example, Community Facilities- Limited Use toilets are typically co-located because they provide service primarily to a particular user group, and it is therefore appropriate that their access is somewhat restricted.



## Safety

Toilets have historically become known as hotspots for anti-social behaviour. Local governments have a duty of care to their local communities, it is important that Council-provided public toilets seek to protect users and minimise instances of anti-social behaviour. The safety and security of public toilet users should therefore be prioritised ahead of any other decision-making considerations for public toilet provision and management.

User perceptions of safety can be as influential as actual or recorded incidents/level of unsafety. If a toilet is perceived to be unsafe, unhygienic or dangerous, users will generally avoid usage of the facility.

There are many ways that design can minimise anti-social behaviour and contribute to positive perceptions of safety. The Crime Prevention Through Environmental Design (CPTED) framework establishes guiding principles to reduce the incidence and perceptions around crime and safety. Developed by the Queensland Government in association with the Queensland Police in 2007, CPTED principles consider factors such as surveillance, legibility, territoriality, ownership, management and vulnerability. According to the four key CPTED principles, public toilets should be characterised by the following:

- **Visibility**
  - › Facilities should be highly visible to the surrounding area and receive passive surveillance from passers-by and surrounding buildings
  - › Provision should avoid areas of low activity
  - › Maximise use of natural light during day hours and provide artificial external lighting at night
- **Access Control**
  - › Facilities should be clearly identified with visible entry/exit points and appropriate signage
  - › Landscape and vegetation should 'channel' visitors to target areas and deter them from accessing obscured or unauthorised areas

- **Territorial Reinforcement**

- › Clearly mark facilities as public toilets and apply overarching design principles for ease of identification
- › Incorporate landscape and design features that create attractive, high-quality facilities/spaces

- **Space Management**

- › Provide appropriate cleaning and service to facilities to maintain them in good condition
- › Use materials that reduce opportunities for vandalism and are easy to clean/maintain

Council is aware that a number of toilets do not reflect CPTED principles, particularly those in more isolated locations. Any anti-social behaviour hotspots should be identified through regular recording and monitoring of instances of this behaviour, while design/maintenance issues that pose safety risks to users should be identified through an audit process every five years.

CCTV is a tool that is often used to monitor and curtail anti-social behaviour. However, the effectiveness of this technique remains a topic of debate, and it is not the policy of Council to employ CCTV at public facilities as a safety measure. It should therefore only be used as a last-resort option at locations experiencing more serious ongoing issues with safety.

The facility at Ross Point at Lake Colac has been identified by Council officers as a toilet that is often subject to vandalism and reports of anti social behaviour. This may be in part due to the isolated nature of the site and public visibility. Should new toilets be constructed at Western Bay Park in accordance with the Lake Colac Foreshore Masterplan (2016), there may be an opportunity to decommission the Ross Point toilet.

## Internal Design

The existing network of toilets incorporates a range of design features and components. For Council toilets, Table 6 summarises provision of key internal components.

Toilets managed by DELWP and Parks Victoria are often located at environmentally-sensitive sites with limited infrastructure, and therefore may not provide potable water, flush toilets, or washbasins.

### Cubicles

Public toilets are a mixture of gendered, all gender and unisex facilities. The most common configuration of public toilets traditionally is split gender, comprising separate male and female toilet entrances either in a toilet block style or an open unit style. More than half of Council facilities provide gendered cubicles, while a minority provide at least one all gender cubicle. All gender facilities provided are ambulant or disabled facilities.

For split gender toilets, the differences in male and female needs require further consideration. Unable to use urinals, women tend to spend longer in toilets due to biological and cultural factors.

Recent public health research recommends split gender toilet provision of 2:1 female-to-male to achieve equitable access, also referred to as 'potty parity'.<sup>1</sup> Provision of all gender rather than split gender toilets is an alternative method of achieving more equitable access.

Cubicle design should include natural ventilation to maximise natural airflow for odour elimination and hygiene maximisation.

<sup>1</sup> *No Place to Go*, Lezlie Lowe (2018)

### Fixtures & Fittings

Facilities in the Council network should be standardised as outlined in Chapter 3.3 to ensure consistency and efficiency across the network.

Current fixtures and fittings vary significantly.

However, provision of fixtures and fittings at each facility is somewhat dependent on the characteristics of the site and the needs of specific user groups. Internal components will therefore differ somewhat across toilets in a network. For example, facilities adjacent to playgrounds should prioritise the provision of baby change tables and clothing/bag hooks, and environmentally-significant sites should not incorporate hand dryers.

Table 6: Internal components of Council toilets

FEATURE/ COMPONENT	NUMBER OF FACILITIES*
<b>Gendered cubicles (1+ of each male/ female)</b>	26
<b>Internal lighting</b>	30
<b>External lighting</b>	16
<b>Powered</b>	37
<b>Washbasins (2+)</b>	34
<b>Hand dryer(s)</b>	6
<b>Shower(s)</b>	1
<b>Bin(s)</b>	21
<b>Sharps disposal(s)</b>	16
<b>Baby change table(s)</b>	4
<b>Clothing hooks</b>	7

\*Note that for each feature/ component, provision was unreported for a small number of toilets.

## 3.4.5 Equitable Access

### Universal Design

Public toilets play an important role in providing access to public spaces for special user groups, and wherever possible, must be planned around the needs of people with diverse needs.

New facilities are expected to comply with AS 1428.1 and 1428.2 for accessibility under the Disability Discrimination Act (DDA), however, accommodating all these requirements can be challenging when seeking to retrofit older buildings, particularly if a facility is spatially constrained. While some existing Council-owned toilet facilities provide Disabled or Ambulant cubicles, most facilities are not DDA-compliant and therefore present access challenges.

Accessibility is not just about catering for people with additional mobility requirements, it should also consider people with different social, cultural and demographic preferences. Other key user groups include children, parents with young children, the elderly and members of the lesbian, gay, bisexual, transgender and inter sex (LGBTI+) community. In this context, it is appropriate to consider universal design principles that cater for the needs of all users, rather than just those with physical mobility requirements.

Using public toilets can be a confronting experience for different user groups and in order to reduce barriers it is important to ensure that future upgrades and installations of new toilets adopt the key principles of universal design. At its core, universal design promotes fair and inclusive environments that allow people to be safe and independent. The seven principles of universal design are:

- Equitable in Use - the design is useful and marketable to people with diverse abilities.
- Flexibility in Use - the design accommodates a wide range of individual preferences and abilities.
- Simple and Intuitive Use – the design is easy to understand, regardless of the users' experience, knowledge, language skills or current concentration level.
- Perceptible Information – the design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
- Tolerance for Error – the design minimises hazards and adverse consequences of accidental or unintended actions.
- Low Physical Effort – the design can be used efficiently and comfortably with a minimum of fatigue.
- Size and Space for Approach and Use – appropriate size and space is provided for approach, reach, manipulation and use regardless of users' body size, posture or mobility.

Culture, identity and social preferences are also important. For example, in addition to driving up wait times for women, the absence of all gender facilities can also cause issues for single parents with a child of the opposite sex. Most Council facilities currently do not provide at least one all gender cubicle.

Council have received requests for non-binary (all gender) signage at public toilets in Apollo Bay to replace traditional 'unisex' signage. While the fit out of a all gender toilet is the same as unisex, there is a growing preference for all gender terminology and symbolism that does not conform to binary ideas of gender identity.

There is increasing research around the promotion of age-friendly cities and designing for people with dementia. Specific requirements such as use of colour contrasts between materials, tactile surfaces and clear graphic signage are among the key considerations. Many of these principles and considerations cross over with other objectives sought by universal design and CPTED principles.

#### **24-Hour Access**

Not all public toilets must be open 24 hours. In some locations, particularly in remote or otherwise isolated areas, 24-hour facilities may attract antisocial behaviour. At others, hours are restricted to the opening hours of the facility with which the toilet is co-located. At Campgrounds, toilets must be 24 hours, while at Visitor Amenities, dawn to dusk service is likely sufficient.

Opening hours should therefore correspond with a facility's intended Use Typology, but should prioritise safety over other considerations.

#### **Showers**

Shower facilities at public toilets play a key role in certain situations such as at coastal swimming beaches and for rough sleepers and other vulnerable community members. Foreshore facilities in Colac Otway Shire are typically provided by non-Council authorities. Council currently provides showers for vulnerable community members in Colac at the Bluewater Leisure Centre. While this facility does not provide public toilets (as defined by this Strategy) it is considered an appropriate location for this service as the showers can be provided in a safe environment. It is therefore not recommended that showers be provided in other public toilets in Colac Otway Shire, unless similar levels of surveillance and safety can be provided for users.

FOR ADOP

## Changing Places

Changing Places facilities were introduced in Australia in 2014 and there are currently over 50 certified facilities across the country. Originating in the United Kingdom in 2006, Changing Places facilities are designed for people who require a hoist to use a toilet. The facilities differ from standard accessible or disabled toilets as they include additional features such as an adult change table, hoist, shower, screens and large circulation spaces.

Research has shown that Changing Places Facilities (also referred to as Accessible Adult Change facilities) are best located within a high use area, such as a shopping precinct or regional open space. Provision of a Changing Places facility are a requirement in new buildings of a certain class such as galleries, museums, performing arts centres or sports stadiums. They are almost always accessed by car as part of a pre-planned trip.

There has been an increasing interest in the provision of Changing Places facilities across both the private and government sectors, particularly in locations that attract regular crowds, such as regional sports and recreation facilities.

Changing Places facilities are vital pieces of community infrastructure which allow members of the public with specific needs to participate in the day-to-day activities across the municipality.

However, there are a number of barriers and perceptions around Changing Places facilities that may constrain Council in providing these facilities:

- Lack of broad community understanding or awareness of Changing Places;
- Expense of facilities (upward of \$150,000 each); and
- Space/footprint requirements of the facility.

The Victorian State Government has previously released funding to assist Councils in building Changing Places facilities.

Colac Otway Shire does not currently contain any Changing Places facilities; Council has expressed interested in providing such a facility at an appropriate location. Due to the significant costs associated with Changing Places facilities, it is likely only feasible for Council to provide one within Colac and one within Apollo Bay. Preference should therefore be given to the location that provides convenience to the highest number of users.

It is recommended that a Changing Places facility be provided at key locations in the Shire that:

- service a regional catchment; and/or
- attract significant visitation; and/or
- that have an all abilities focus.

Potential suitable locations are:

- Memorial Square, Colac;
- Lake Colac foreshore in association with a regional all abilities playspace (as per the Masterplan);
- COPACC;
- Apollo Bay.

Consultation with special needs groups is recommended regarding potential locations and design requirements prior to implementation.

## Signage & Wayfinding

Signage and wayfinding are important factors in promoting an accessible and well-distributed public toilet network. Often considered a minor detail, signage assists residents and visitors alike in Colac Otway Shire to navigate the widespread toilet network.

Existing signage on public toilet facilities is varied across the Shire. Some Council facilities have signage on the exterior of facilities that identify the name of the toilet, while others have minimal signage or lack signage completely. Some toilets also have external signage and content unique to the Shire that illustrates the local history and character of the area, such as native vegetation or Indigenous art.

Industry best practice recommends that basic information should be provided on the exterior of all public toilets to convey key aspects of the facility including:

- Gender accessibility;
- Opening hours;
- Contact information (to report repairs, maintenance or closures);
- Cleaning schedules; and
- Consideration for vision impaired users.

In addition to standard signage, it is important that wayfinding signage be provided to direct visitors to public toilet facilities at key destinations in urbanised areas and at visitor sites.

Users may also utilise online resources such as the National Public Toilet Map ([toiletmap.gov.au](http://toiletmap.gov.au)) or Council's website to locate a facility. Developed as part of the National Continence Program, the National Public Toilet Map provides information and the location of more than 16,000 toilets across Australia.

Almost all Council toilets are currently listed on the National Public Toilet map. The map also shows listings for toilets owned/managed by other managing authorities and some toilets in private businesses such as petrol stations and shopping centres. Information about the level of accessibility, opening hours, and other facilities is provided.

The map is available as an app for smartphones and tablet devices. While this tool allow users to easily locate toilets, some members of the community are unable to access

or have difficulty connecting to digital communication platforms, and the platform may provide incorrect or outdated information. Moreover, Community Facilities-Limited Use facilities may be listed as public toilets despite their use being restricted to specific groups and/or hours.

The inclusion of toilet locations on key maps and appropriate signage throughout the Shire should be provided, especially for Standard Plus and Premium facilities that are capable of servicing significant user demand. The location of these facilities should particularly be promoted to tourist coaches and other tourism operators so that visitor use is directed to these locations.

In order to best direct visitors to preferred locations, Council should collaborate with the other managing authorities of the area to ensure a consistent approach to wayfinding signage and online and map-based toilet listings.

## 3.4.6 Well-maintained & Hygienic

### Condition of Facilities

As with all structures, the elements of a public toilet will deteriorate over time. This may be exacerbated by the type of construction materials and frequency of maintenance. Facilities that appear old and poorly maintained may be perceived as less hygienic or safe than their newer counterparts. When coupled with poor location and design elements, these facilities may see an increase in anti-social behaviour and create the need for more maintenance.

Council have noted some ongoing typical maintenance needs related to vandalism (graffiti or damage), leaks, and taps or flush not functioning.

The condition of each Council-owned toilet was assessed based on a general inspection of each facility to determine its overall presentation as either Poor, Fair or Well Maintained. A breakdown of the condition of Council toilets is shown in Figure 18. Council toilets are most commonly considered to be in Fair condition.

It should be noted that the assessment of the current condition of Council toilets represents a point in time. The overall condition of a facility is largely based on its age, but can also vary from day to day based on cleanliness and the functionality of toilet components.

Facilities considered to be in Poor condition should be prioritised for upgrades that would improve their condition. At some facilities this may be as simple as increasing the frequency of cleaning, however some may require major works. Further investigation is required for each of these sites to determine how best to improve their condition.

Based on the last condition assessments and facility audit undertaken for development of this Strategy, the following toilets have been identified as high priorities for short-term action:

- Yeo Tennis Courts
- Paradise Reserve
- Irrewillipe Recreation Reserve
- Forrest Caravan Park
- Barongarook Hall

Facilities in Poor condition that are nearing the end of their lifespan should not be prioritised for investment

but rather decommissioned (at the end of their lifespan), particularly if they are experiencing low usage and necessary repairs/upgrades would incur significant costs.

Council should monitor the overall condition of facilities to assist with planning and prioritising repairs and upgrades to facilities through an audit every four years.

Alongside routine site inspections by Council staff, there are other ways to collect information about damaged facilities or broken fixtures. Apps such as Snap Send Solve allow users to directly report issues about Council's assets. These systems typically provide informational signage on the interior of facilities encouraging users to report issues via their Smartphone.

Such digital tools are not preferred or accessible to all community members. Facilities should also provide a copy of the cleaning schedule and contact details to report faults/cleaning issues on-site.

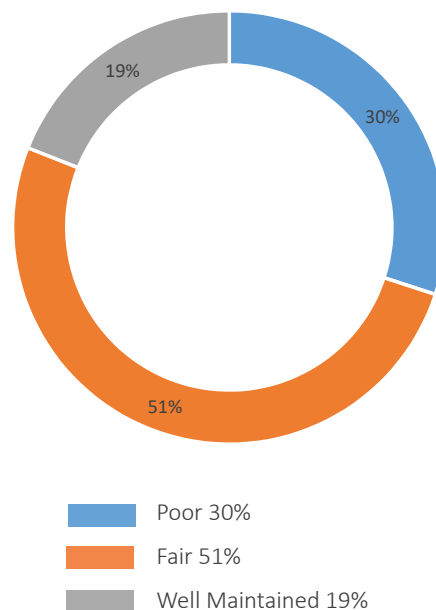


Figure 18: Condition of Council-owned facilities

## Cleaning

The level of hygiene or cleanliness of a facility can be influenced by a range of interrelated factors. For instance, the structural elements and design features of a facility may make it easier or more difficult to clean. Facilities in isolated locations or otherwise difficult to access are likely to be both used and cleaned less frequently. It may be more common for older structures or those in Poor condition to appear less hygienic than modern facilities.

Components and fixtures that can help determine the cleanliness of a facility include:

- Soap dispensers;
- Hand dryers;
- Sharps disposal units; and
- The quality of ventilation.

Table 2 at Chapter 3.3 provides recommendations for fixtures and fittings that are easy to clean and maintain.

It is anticipated that a COVID-normal and even post-COVID environment will pose additional challenges for the hygiene and cleanliness of public toilets as authorities seek to help stop the spread, particularly in indoor spaces and though initiatives such as social distancing and hand-washing.

There will be a strong commitment to ensuring COVID safe- touch free fixtures and fittings into the future.

The cleanliness and general condition of a toilet facility can greatly impact user experience. It is therefore important to undertake cleaning of public toilet facilities that helps to maintain them in good condition and promote positive perceptions of facilities.

Council toilet facilities are cleaned according to a schedule determined by their location and level of usage, with heavily-trafficked sites cleaned several times per day and facilities with less usage cleaned as infrequently as once per week. Cleaning frequency is summarised at Table 7.

Cleaning costs represent a significant expense for Council, with an average of approximately \$5,000 spent per toilet annually.

Cleaning of Council-owned toilets is generally undertaken by independent contractors, and Council have noted that it is difficult to oversee cleaning schedules at some of the more isolated facilities.

Other managing authorities noted similar challenges with the maintenance and cleaning of toilets in more isolated locations, particularly when using contractors.

Most Council toilets include natural ventilation that helps to mitigate odours, which is key to contributing to perceptions of cleanliness at public toilets.

Ongoing monitoring of toilet usage should continue to inform Council cleaning schedules. Usage can be measured in a number of ways, including:

- Installation of temporary pedestrian counters at toilet entrances;
- Measuring toilet paper and/or soap usage (expenditure, reports from cleaning contractors);
- Monitoring utility consumption (e.g. water, electricity); and
- Targeted surveying and observations; and anecdotal feedback and word of mouth from the community.

### Peak Periods

Approximately one-third of Council toilet facilities are cleaned according to a more frequent schedule in summer. Heightened use of facilities (necessitating more frequent cleaning) typically occurs at sites that experience heightened visitation and recreation activity over peak periods.

Multiple schedules of cleaning are useful for such sites, and should be implemented for any sites that experience fluctuating demand.

### Responsibility for Cleaning

Toilet ownership and management is shared across a number of government authorities and community groups in the Shire.

Council responsibilities for cleaning duties and costs are limited to facilities which are Council-owned and Council-managed, except where they have agreed otherwise under a SSA.

Council is therefore generally not responsible for the cleaning of Community Facilities- Limited Use toilets, as most of these are managed by a Community Asset Committee.

Table 7: Public toilet cleaning frequency

CLEANING FREQUENCY	NUMBER OF FACILITIES*
1x / week	10
2x / week	11
3x / week	1
4x / week	1
5x / week	1
1x / day	8
2x / day	3
5x / day	1

\*Note that for 7 Council-owned toilets, cleaning and maintenance is undertaken by a Community Asset Committee (CAC); cleaning data on these toilets is therefore not reported.



Chapter 4

**STRATEGIC  
RECOMMENDATIONS &  
ACTION PLAN**

Figure 19: Lake Elizabeth

## 4.1 Strategic Recommendations

### Strategic Recommendations Provision

REFERENCE	STRATEGIC RECOMMENDATIONS PROVISION
P1	<p>Support the provision of public toilets in the following locations:</p> <ul style="list-style-type: none"> <li>• Regional tourist activity nodes and campgrounds with high levels of regional visitation and demand for facilities</li> <li>• Local tourist destinations including: key stops along the Old Beechy Rail Trail (Barongarook Hall, Colac Performing Arts &amp; Cultural Centre, Kawarren, Gellibrand and Beech Forest), Forrest, Birregurra, Lavers Hill, Paradise Reserve and at small retail or commercial precincts (which serve both the local community and local tourism)</li> <li>• In major urban centres: within 400-800 metres of a key destination, and within a 400 metre walkable catchment of a shopping precinct</li> <li>• At open space reserves, including key recreational linear links, with facilities that attract higher levels of visitation and longer stays</li> <li>• Within 150 metres of new higher order playgrounds</li> <li>• At community facilities which are considered higher order facilities servicing a large catchment.</li> </ul>
P2	Support the provision of “limited use” amenities at smaller community facilities where there is a demonstrated need.
P3	Investigate the consolidation of Council amenities, or advocate for consolidation of amenities, in areas where there are a number of facilities within a small geographic area servicing the same user groups, and where a single set of amenities would allow for a higher level of service.
P4	Support the provision of shower facilities at coastal swimming beaches and for rough sleepers and other vulnerable community members.
P5	Require event organisers to provide toilets for patrons and staff/volunteers at an event.

# Strategic Recommendations Investment

REFERENCE	STRATEGIC RECOMMENDATIONS INVESTMENT
11	Manage resource contributions between Council, another managing authority, Community Asset Committee or user group through a Shared Service Agreement, based on the 'stewardship agreement' model in the Colac Otway Public Open Space Strategy.
12	Fund toilet provision, maintenance and ongoing management costs of public toilets classified as Community Facilities where sited on Council land.
13	Invest in public toilets on non-Council land that are classified as Community Facilities and Visitor Amenities- Local, in accordance with an assessment to determine the level of benefit to the community and local economy.
14	Assume cleaning responsibilities and costs for ongoing maintenance for facilities that are Council owned and Council managed, unless as otherwise agreed through a Shared Service Agreement.
15	Advocate for, and support the provision of, public toilet facilities at key regional tourist destinations. Consider taking the lead on funding applications and help to connect project partners.

# Strategic Recommendations

## Design

REFERENCE	STRATEGIC RECOMMENDATIONS DESIGN
D1	Prioritise the safety of users ahead of any other decision making considerations for public toilet provision and management.
D2	Provide all gender toilets for future Council facilities in preference to split gender toilets.
D3	Provide split gender toilets at a 2:1 female-to-male ratio where considered necessary.
D4	Use design standards for new and upgraded toilet facilities which: <ul style="list-style-type: none"> <li>• Minimise ongoing costs, maximise lifespan potential and are generally standardised across the network (with some flexibility for site-specific considerations)</li> <li>• Incorporate touch-free fixtures and fittings</li> <li>• Correspond with an identified Use Typology to ensure it is fit for purpose</li> <li>• Incorporate CPTED principles</li> <li>• Comply with AS 1428.1 and 1428.2 to achieve DDA compliance</li> <li>• Incorporate universal design where possible</li> <li>• Incorporate ESD principles as much as practicable</li> <li>• Are easy to clean and maintain</li> <li>• Utilise CCTV as a last resort option at locations experiencing more serious ongoing issues with safety</li> <li>• Incorporate lighting if open 24 hours or used after dark</li> </ul>
D5	Install signage at new and upgraded toilet facilities which: <ul style="list-style-type: none"> <li>• Gives preference to all gender terminology</li> <li>• Conveys basic information about the facility, including a copy of the cleaning schedule and contact details to report faults/cleaning issues</li> </ul>
D6	Install wayfinding signage to facilities at or near key local destinations and visitor sites.
D7	Advocate for wayfinding signage for Visitor Amenity – Local and Visitor Amenity- Regional from major roads to direct tourism traffic (particularly coaches) to these locations.
D8	Install enviro toilets at environmentally sensitive sites where Basic or Standard toilet facilities are required. Where this is not feasible, prioritise ESD principles and avoid connection with mains water or power.

# Strategic Recommendations Operations

REFERENCE	STRATEGIC RECOMMENDATIONS OPERATIONS
O1	Match opening hours of toilet facilities with their Use Typology, and prioritise safety above other considerations.
O2	Implement multiple cleaning schedules for toilets that experience significant fluctuations in demand related to peak/off peak periods to effectively and efficiently maintain the cleanliness of facilities.

FOR ADOPTION

## 4.2 Action Plan

The Draft Public Toilet Strategy has identified the key issues and opportunities facing the public toilet network in Colac Otway Shire, with recommendations across a number of themes for each principle.

The Strategy's recommendations have been translated into an **Action Plan**, categorised by theme and each assigned an indicative timing.

This Action Plan sets out a comprehensive list of physical and operational actions for public toilets in the Shire to assist with planning and decision-making regarding toilet facilities and associated infrastructure.

The time line provided is indicative and Council should determine the most appropriate phasing and timing of implementation in accordance with budget and expenditure. Prioritisation of actions are categorised as:

PRIORITY	DURATION
High priority / short term	1-3 years
Medium term	3-7 years
Long term*	7+ years

\*Long term – delivery is dependent on population growth and community demand

The relative priority of actions is determined according to the following criteria:

- Upgrading/replacing toilets in higher demand locations;
- Concurrent projects and opportunities for works in the immediate future;
- Upgrading/replacing toilets in other locations, based on the condition of facilities, particularly DDA compliance.
- Decommissioning toilets in over-serviced areas, taking into consideration upgrades and new toilets in proximity to the facility.

It is recommended that this action plan is reviewed every 3 years to monitor performance of the Strategy and evolving demand for facilities.

A review of action ratings will be included in the 3 year review considering additional data and community feedback.

FOR ADOP

REFERENCE	ACTION ITEM	DESCRIPTION	RATING
1	<b>Data Collection</b>	Invest in smart technology, tools and processes to enable data collection on toilet demand and usage, e.g. counters	High
2	<b>Lake Colac Foreshore Public Toilets</b>	Determine the best location and required service levels for the Lake Colac Foreshore Public Toilets considering current and future demand generated by the precinct, future major playspace development and other improvements identified in the Lake Colac Foreshore Masterplan.	High
3	<b>Pascoe Street, Apollo Bay</b>	Consider constructing permanent public toilets at the Pascoe Street commercial area. Responsibility for provision and on-going maintenance for permanent toilets in this location should be determined by conducting an assessment to determine community benefit as outlined in Chapter 3.4.2.	High
4	<b>Cressy Public Toilets</b>	Investigate the public toilets in Cressy to determine current and likely future demand and need as part of the public toilet network.	High
5	<b>Yeo Public Hall and Tennis Courts</b>	Consider the future of the facilities at the Yeo Public Hall and Tennis Courts in the context of the broader recreation and social infrastructure assessment currently underway. Undertake a demand assessment to inform future improvements, if warranted.	High
6	<b>Reclassification</b>	Investigate the re-classification of the typology of the public toilets at the following locations to Community Facilities- Limited Use in consultation with user groups: <ul style="list-style-type: none"> <li>a. Larpent Public Hall</li> <li>b. Swan Marsh Public Hall</li> <li>c. Warrion Public Hall</li> </ul>	Medium
7	<b>Irrewillipe Recreation Reserve</b>	Investigate a Limited Use arrangement for the existing public toilets at the Irrewillipe Recreation Reserve. Construct new public amenities (limited use) as part of a broader recreation facility redevelopment, and decommission the existing public toilets once the new facilities are constructed and operational.	High
8	<b>Changing Places</b>	Provide a Changing Places facility in Colac at Memorial Square	High
9.	<b>Hesse Street Comfort Station</b>	Investigate the Hesse Street Comfort Station facility to determine current and likely future demand and need as part of the public toilet network.	High
10.	<b>Paradise Reserve</b>	Undertake a review of the current management model for facilities at Paradise Reserve and conduct a demand assessment to determine an appropriate service level and scope for future investment.	High
11	<b>Forrest Caravan Park</b>	Further consultation with the Forrest community and other managing authorities to determine short and long term needs and options considering local restraints.	High
12	<b>Revenue raising</b>	Investigate options to offset operational costs in high use areas such as Apollo Bay and Colac central shopping precinct.	High

REFERENCE	ACTION ITEM	DESCRIPTION	RATING
13	<b>Barongarook Hall</b>	Consider the future of the facilities at Barongarook Hall and Tennis Courts in the context of the broader recreation and social infrastructure assessment currently underway. Undertake a demand assessment to inform future improvements, if warranted. Transfer maintenance responsibility for the facility to Council in the short-term, in recognition that the facility services a broader community use.	High
14	<b>Facility Assessment</b>	Assess other Council facilities identified as in 'Poor' condition against the Principles in this Strategy to determine future levels of investment. Where investment is appropriate, prioritise the upgrade and cleaning to improve their condition to Average at minimum. Where future investment is not warranted, consider decommissioning at the end of the facility's lifespan.	High
15	<b>Mapping</b>	Update and maintain information on Council's public toilet facilities on the National Public Toilet Map. Do not include Limited Use facilities on any online listing of public toilet facilities	High
16	<b>Usage Monitoring</b>	Set up a process and system to for ongoing monitoring of toilet usage to inform cleaning schedules	High
17	<b>Vandalism Monitoring</b>	Set up a process and system to record all reports of vandalism and anti-social behaviour and monitor over time to identify key hot spots.	High
18	<b>Apollo Bay Changing Places Facility</b>	Consult with special needs groups to determine an appropriate location for a Changing Places facility in Apollo Bay.	High
19	<b>Kawarren</b>	Support the renovation and upgrade of toilets at the Kawarren Recreation Reserve (Echidna House) and consider decommissioning the public toilets at Loves Creek once the new facilities at the Reserve are operational.	Medium
20	<b>Lavers Hill</b>	Investigate the option to consolidate public toilet facilities in Lavers Hill and upgrade a set of amenities to cater to all users. Consult with the local community to understand local use of facilities and locational considerations and undertake a demand assessment to determine facility requirements (e.g. number of cubicles and levels of service)	Medium
21	<b>Maintenance Reporting</b>	Promote the Snap Send Solve App as a tool to allow individual users to report maintenance issues directly to Council	Medium
22	<b>Audit Review</b>	Review cyclical building condition audits to inform the planning and prioritisation of repairs and upgrades.	Medium
23	<b>Western Bay Park, Colac and Ross Point</b>	Provide public toilets in Western Bay Park in accordance with the Lake Colac Foreshore Masterplan (2016) after further community consultation to re-confirm need, location and management models.	Low
24	<b>Carlisle River Recreation Reserve</b>	Consolidate public toilet facilities at the Carlisle River Recreation Reserve to one set of amenities in consultation with the community and user groups.	Low



Chapter 5

FRAMEWORK  
ASSESSMENT

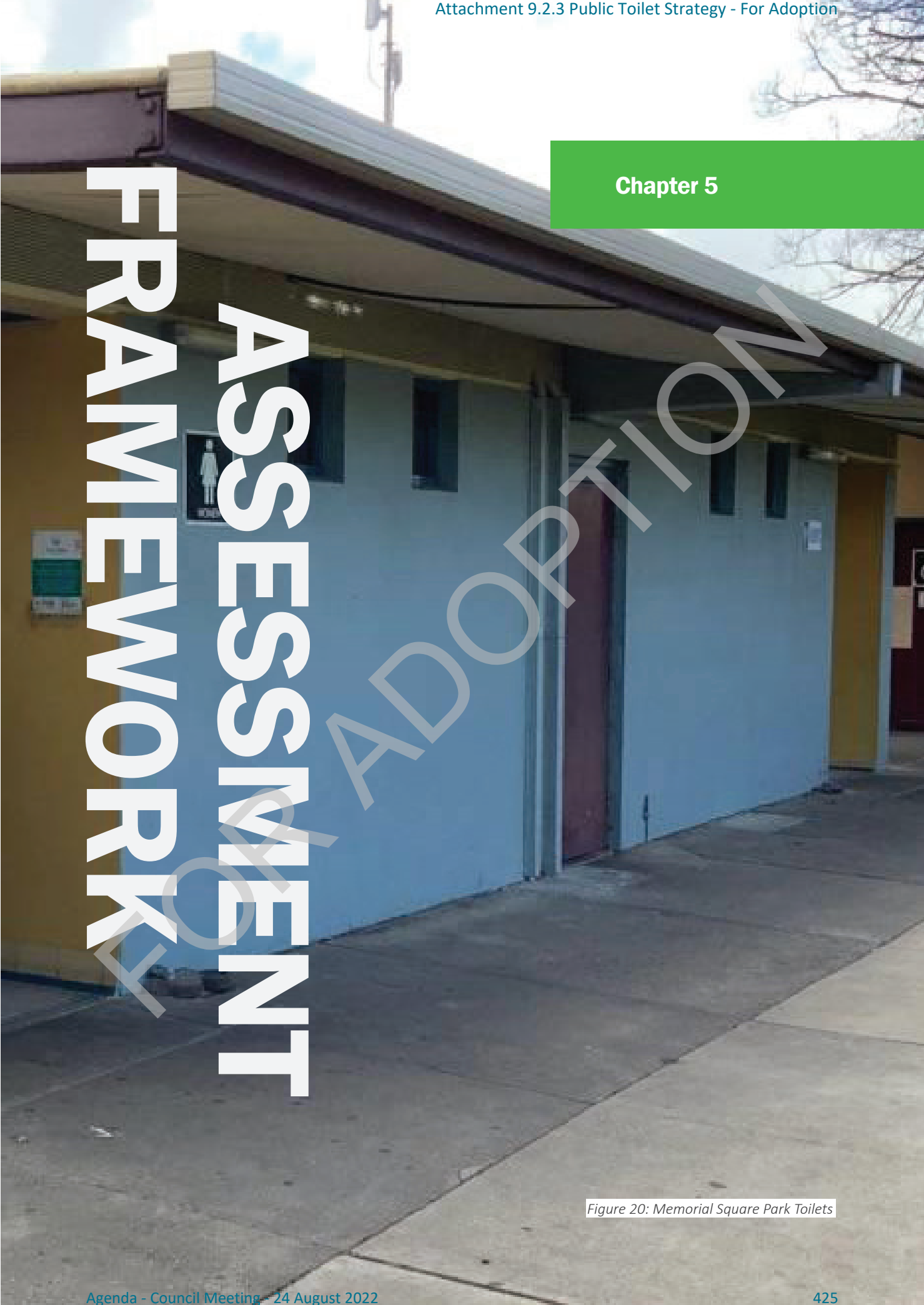


Figure 20: Memorial Square Park Toilets

# How to Use the Assessment Framework

Two **Assessment Frameworks** have been developed to assist Council in determining future upgrades to public toilets (or installation of new toilet). The Assessment Frameworks should be reviewed in conjunction with the recommendations of the Strategy and in the following instances:

- Opportunities to consider a new facility, upgrade or removal of a public toilet as part of a planning process (e.g. Recreation Reserve Master Plan);
- Opportunities to decommission facilities when they may no longer be needed or where services may be consolidated elsewhere; and
- Where there is a volume of community requests for a new facility, upgrade or removal of a public toilet in a location outside of the Capital Works Plan. This refers to occasions where there are consistent community requests or persistent maintenance issues associated with a public toilet facility.

The Assessment Frameworks will also assist with future audits of facilities.

FOR ADOPTION

# Assessment Framework 1: Existing Facilities

QUESTION	CONSIDERATION	RESOURCE
Is the facility required to ensure an adequate provision of public toilets as part of the public toilet network?	<ul style="list-style-type: none"> <li>• What is the use typology of the facility?</li> <li>• Are there other facilities with the same use typology within 400-800 metres of this facility?</li> <li>• Are there other facilities planned for nearby?</li> <li>• Does the facility service a local tourist destination?</li> <li>• Is the facility located in a higher order open space reserve or park, or is it located along a key recreational linear link?</li> <li>• Is the facility part of a community facility with a broad catchment with high levels of demand?</li> <li>• Is the facility for specific user groups of an associated building/reserve and not available to the general public?</li> <li>• Are there privately operated public toilets within close proximity (e.g. shopping plaza)?</li> </ul>	<ul style="list-style-type: none"> <li>• GIS database mapping</li> <li>• National Toilet Map</li> <li>• Regional Policy</li> <li>• Municipal Policy</li> <li>• Township Plans</li> </ul>
Is there a demonstrated demand or volume of requests for this facility to be replaced or refurbished?		<ul style="list-style-type: none"> <li>• Evidence from the community or Council audits/ records that the existing facility is not adequately functioning</li> <li>• Maintenance requests from community</li> <li>• Community surveys</li> <li>• Open Space Strategy</li> <li>• Local masterplans or structure plans</li> <li>• Tourism Data</li> </ul>
Is the existing public toilet in poor condition?	<ul style="list-style-type: none"> <li>• Presence of vandalism or graffiti</li> <li>• Facilities are unhygienic and difficult to maintain/clean</li> <li>• Obvious signs of wear on the existing facilities within the toilet</li> <li>• Features within the toilet are broken or do not work</li> <li>• Issues with odour or presence of vermin</li> <li>• Environment/facilities are unsafe or dangerous</li> <li>• Negative perceptions of safety or presence of antisocial behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• Public toilet audit data</li> <li>• Empirical observations or anecdotal information from the community, Council staff, cleaning, service or maintenance contractors</li> </ul>
What is the current level of usage for the public toilet?	<ul style="list-style-type: none"> <li>• Location and siting</li> <li>• Opening hours and availability</li> </ul>	<ul style="list-style-type: none"> <li>• Counters</li> <li>• Empirical observations or anecdotal information from the community, Council staff, cleaning, service or maintenance contractors</li> <li>• Maintenance costs</li> <li>• Water usage, levels of toilet paper, soap consumed weekly, monthly or annually</li> </ul>
Does the toilet have appropriate fixtures or fittings?	<ul style="list-style-type: none"> <li>• DDA Compliance</li> <li>• Universal access</li> <li>• Site specific features</li> </ul>	<ul style="list-style-type: none"> <li>• Service Provision Hierarchy and Fixtures and Fittings</li> <li>• List of Fixtures and Fittings</li> </ul>

## Assessment Framework 2: New Facilities

QUESTION	CONSIDERATION	RESOURCE
<p><b>Is the facility required to ensure an adequate provision of public toilets as part of the public toilet network?</b></p>	<ul style="list-style-type: none"> <li>• What is the use typology of the facility?</li> <li>• Are there other facilities with the same use typology within 400-800 metres of this facility?</li> <li>• Are there other facilities planned for nearby?</li> <li>• Does the facility service a local tourist destination?</li> <li>• Is the facility located in a higher order open space reserve or park, or is it located along a key recreational linear link?</li> <li>• Is the facility part of a community facility with a broad catchment with high levels of demand?</li> <li>• Is the facility for specific user groups of an associated building/reserve and not available to the general public?</li> <li>• Are there privately operated public toilets within close proximity (e.g. shopping plaza)?</li> </ul>	<ul style="list-style-type: none"> <li>• GIS database mapping</li> <li>• National Toilet Map</li> <li>• Regional Policy</li> <li>• Municipal Policy</li> <li>• Township Plans</li> </ul>
<p><b>Is there a high movement of pedestrian, cycling or other active transport modes and is the proposed location in an area with a growing catchment?</b></p>	<ul style="list-style-type: none"> <li>• Activity generators and diversity of land uses</li> <li>• Transport and connectivity</li> <li>• Is there adequate parking and disability access nearby?</li> </ul>	<ul style="list-style-type: none"> <li>• ABS Population projections</li> <li>• Surrounding mixture of land uses</li> <li>• Regional Policy</li> <li>• Municipal Policy</li> <li>• Local masterplans or structure plans</li> </ul>
<p><b>Will the new toilet provide a benefit to the community by enhancing safety, health and wellbeing or by leveraging spending in the local economy?</b></p>	<ul style="list-style-type: none"> <li>• Contribution to the existing public toilet network</li> <li>• Social indicators</li> <li>• Needs of different user groups</li> <li>• Potential benefits to the local economy</li> </ul>	<ul style="list-style-type: none"> <li>• State Policy</li> <li>• Municipal Policy</li> <li>• Township Plans</li> <li>• Community Consultation</li> </ul>

# Appendices

FOR ADOPTION

# A. Audit Summary of Existing Facilities

The audit summary of the existing network contained in the table below provides the map reference number, name, ownership, management, and use typology of each public toilet in the network. Detailed information was collected for Council toilets that also allows their classification by service level (according to the Public Toilet Toolkit hierarchy) and condition.

MAP REF.	NAME	OWNERSHIP	MANAGEMENT	USE TYPOLOGY	CURRENT SERVICE LEVEL	CONDITION
1	Aire Crossing Campground	Crown land/Parks Victoria	Parks Victoria	Campground		
2	Aire East Campground	Crown land/Parks Victoria	Parks Victoria	Campground		
3	Aire West Campground	Crown land/Parks Victoria	Parks Victoria	Campground		
4	Alvie Recreation Reserve	Colac Otway Shire	Community Asset Committee	Community Facilities		Fair
5	Apollo Bay Foreshore	Crown land/DELWP	GORA	Visitor Amenities - Regional		
6	Apollo Bay Golf Club car park	Crown land/DELWP	GORA	Visitor Amenities-Regional		
7	Apollo Bay Harbour car park (Mother's Beach)	Crown land/Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Regional	Basic	Fair
8	Apollo Bay Harbour- Point Bunbury	Crown land/Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Regional	Standard	Fair
9	Apollo Bay Recreation Reserve	Crown land/DELWP	GORA	Community Facilities- Limited Use		
10	Apollo Bay Visitor Information Centre	Crown land/DELWP	GORA	Visitor Amenities - Regional		
11	Apollo Bay Visitor Information Centre	Crown land/Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Regional	Standard plus	Fair
12	Barongarook Creek, Colac	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Local	Standard	Fair
13	Barongarook Public Hall	Colac Otway Shire	Community Asset Committee	Community Facilities & Visitor Amenities - Local	Standard	Poor
14	Barwon Downs Public Hall	Colac Otway Shire	Community Asset Committee	Community Facilities- Limited Use	Standard	Well maintained
15	Barwon Downs	Colac Otway Shire	Colac Otway Shire	Community Facilities	Basic	Fair
16	Beauchamp Falls Campground	Crown land/DELWP	DELWP	Campground		
17	Beaac- Main Street	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Local	Standard plus	Fair
18	Beaac Recreation Reserve	Crown land/DELWP	DELWP Committee of Management	Community Facilities- Limited Use		

MAP REF.	NAME	OWNERSHIP	MANAGEMENT	USE TYPOLOGY	CURRENT SERVICE LEVEL	CONDITION
19	Beech Forest Recreation Reserve- Ditchley Park	Colac Otway Shire	Community Asset Committee	Community Facilities- Limited Use		Poor
20	Beech Forest- John Gardiner Reserve	Colac Otway Shire	Colac Otway Shire	Visitor Amenities- Local	Standard plus	Fair
21	Birregurra Park	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard plus	Well maintained
22	Birregurra Public Hall- External	Colac Otway Shire	Community Asset Committee	Visitor Amenities- Local	Standard plus	Fair
23	Birregurra Recreation Reserve	Crown land/DELWP	DELWP Committee of Management	Community Facilities- Limited Use		
24	Blanket Bay Campground	Crown land/Parks Victoria	Parks Victoria	Campground		
25	Blanket Bay Day Visitor Area	Crown land/Parks Victoria	Parks Victoria	Visitor Amenities- Regional		
26	Cape Otway Lightstation carpark	Crown land/Parks Victoria	Parks Victoria	Visitor Amenities- Regional		
27	Carlisle River Public Hall	Crown land/DELWP	DELWP Committee of Management	Community Facilities- Limited Use		
28	Carlisle River Recreation Reserve	Colac Otway Shire	Community Asset Committee	Community Facilities	Standard	Fair
29	Carlisle River Recreation Reserve*	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard	Fair
30	Central Reserve	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard plus	Poor
31	Chapple Vale Public Hall	Colac Otway Shire	Colac Otway Shire	Community Facilities- Limited Use	Basic	Well maintained
32	Colac Otway Performing Arts and Cultural Centre	Colac Otway Shire	Colac Otway Shire	Community Facilities- Limited Use		Fair
33	Colac Visitor Information Centre	Colac Otway Shire	Colac Otway Shire	Visitor Amenities- Regional		Well maintained
34	Cororooke Public Toilet	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard plus	Well maintained
35	Cressy Public Toilets (external)	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard	Fair
36	Cressy Recreation Reserve	Crown land/DELWP	DELWP Committee of Management	Community Facilities- Limited Use		
37	Dandos Campground	Crown land/DELWP	DELWP	Campground		
38	Eastern Reserve	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard	Poor
39	Elliminyt Recreation Reserve	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard plus	Poor
40	Forrest Caravan Park	Colac Otway Shire	Colac Otway Shire	Community Facilities		

MAP REF.	NAME	OWNERSHIP	MANAGEMENT	USE TYPOLOGY	CURRENT SERVICE LEVEL	CONDITION
41	Forrest Mountainbike Trailhead	Crown land	DELWP	Visitor Amenities-Regional		
42	Forrest Public Hall	Crown land	DELWP Committee of Management	Community Facilities-Limited Use		
43	Forrest Recreation Reserve	Crown land	DELWP Committee of Management	Community Facilities-Limited Use		
44	Gellibrand Recreation Reserve	Crown land	DELWP Committee of Management	Community Facilities-Limited Use		
45	Gellibrand- Rex Norman Park	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Local	Basic	Well maintained
46	Gerangamete Tennis Courts	Crown land	DELWP Committee of Management	Community Facilities-Limited Use		
47	Great Ocean Walk- COLS Campground	Crown land	Parks Victoria	Campground		
48	Great Ocean Walk- Elliot Hike-in Campground	Crown land	Parks Victoria	Campground		
49	Great Ocean Walk - Johanna Beach Campground	Crown land	Parks Victoria	Campground		
50	Great Ocean Walk- Ryans Den	Crown land	Parks Victoria	Visitor Amenities-Regional		
51	Hesse Street Comfort Station	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Local	Standard plus	Fair
52	Irrewillipe Recreation Reserve	Colac Otway Shire	Community Asset Committee	Community Facilities	Standard plus	Poor
53	Johanna Beach Camping Area	Crown land	Parks Victoria	Campground		
54	Johanna Beach Day Visitor area	Crown land	Parks Victoria	Visitor Amenities-Regional		
55	Kennett River Temporary	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Regional	Standard plus	Fair
56	Lake Colac Foreshore	Crown land	Colac Otway Shire	Visitor Amenities-Local	Standard plus	Poor
57	Lake Elizabeth Campground	Crown land	Parks Victoria	Campground		
58	Larpen Public Hall	Colac Otway Shire	Community Asset Committee	Community Facilities	Standard	Fair
59	Lavers Hill Public Hall	Colac Otway Shire	Community Asset Committee	Community Facilities	Standard plus	Well maintained
60	Lavers Hill	Road reserve/Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Local	Standard plus	Fair
61	Loves Creek- Kawarren	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Local	Standard	Poor
62	Melba Gully Picnic area	Crown land	Parks Victoria	Visitor Amenities-Regional		
63	Memorial Square	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Regional & Local	Standard plus	Fair
64	Meredith Park- Foreshore Reserve	Crown land	Colac Otway Shire	Campground	Standard plus	Fair



MAP REF.	NAME	OWNERSHIP	MANAGEMENT	USE TYPOLOGY	CURRENT SERVICE LEVEL	CONDITION
65	Paddy's Swamp Trailbike Visitor Area	Crown land	DELWP	Visitor Amenities-Regional		
66	Paradise Reserve	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Regional	Standard	Poor
67	Parker Hill Campground	Crown land	Parks Victoria	Campground		
68	Pascoe Street, Apollo Bay	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Regional & Local	Standard	Poor
69	Pennyroyal Public Hall	Pennyroyal Hall Committee	Pennyroyal Hall Committee	Community Facilities-Limited Use		
70	Red Rock	Crown land	Colac Otway Shire	Visitor Amenities-Local	Standard plus	Poor
71	Redwoods Picnic Area	Crown land	Parks Victoria	Visitor Amenities-Regional		
72	Ross Point, Lake Colac	Colac Otway Shire	Colac Otway Shire	Visitor Amenities-Local	Basic	Poor
73	Shelly Beach Picnic Area	Crown land	Parks Victoria	Visitor Amenities-Regional		
74	Skenes Creek	Crown land/Barwon Water	GORA	Visitor Amenities-Regional		
75	Stevensons Falls Campground	Crown land	DELWP	Campground		
76	Swan Marsh Public Hall	Colac Otway Shire	Community Asset Committee	Visitor Amenities-Regional	Standard	Fair
77	Triplet Falls Day Visitor Area	Crown land	Parks Victoria	Visitor Amenities		
78	Warncoort Tennis Courts	Colac Otway Shire	Community Asset Committee	Community Facilities-Limited Use	Basic	Well maintained
79	Warrion Public Hall	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard	Fair
80	Warrion Recreation Reserve	Crown land	DELWP Committee of Management	Community Facilities-Limited Use		
81	Warrobie Recreation Reserve	Crown land	DELWP Committee of Management	Community Facilities-Limited Use		
82	West Barwon Reservoir	Barwon Water	Barwon Water	Visitor Amenities-Local		
83	Western Reserve Colac	Colac Otway Shire	Colac Otway Shire	Community Facilities	Standard plus	Poor
84	Wye River Foreshore	Crown land	GORA	Visitor Amenities-Regional		
85	Yaugher Mountainbike Trailhead	Crown land	DELWP	Visitor Amenities-Regional		
86	Tennis Courts	Colac Otway Shire	Community Asset Committee	Community Facilities	Standard	Poor
87	Yeodene Public Hall and Recreation Reserve	Crown land	DELWP Committee of Management	Community Facilities-Limited Use		
88	Colac Coles Complex	Private	Private	Community Facilities-Limited Use		
89	Colac Woolworths Complex	Private	Private	Community Facilities-Limited Use		

## B. Policy Review

STRATEGY/ POLICY	IMPLICATIONS FOR THE PUBLIC TOILET STRATEGY
Disability Discrimination Act (2009) and associated Australian Standards	<ul style="list-style-type: none"> <li>• The Disability Discrimination Act (DDA) sets out the legislative framework for providing universal access under Australian Standard AS1428. AS1428 is a suite of building codes that specifies the design requirements for new building work, as required by the Building Code of Australia (BCA) and the Disability (Access to Premises – Buildings) Standards (Premises Standards), to provide access for people with disabilities. Particular attention is given to:               <ul style="list-style-type: none"> <li>› Continuous accessible paths of travel and circulation spaces for people who use wheelchairs.</li> <li>› Access and facilities for people with ambulatory disabilities; and</li> <li>› Access for people with sensory disabilities.</li> </ul> </li> <li>• AS1248 sets out the design of circulation spaces, at grade access, design fixtures and fittings (including height and spacing), floor surfaces and lighting.</li> <li>• Accommodating all these requirements can be challenging when seeking to retrofit older buildings, particularly if a facility is spatially constrained. Many older facilities constructed from the 1970s to 1990s are usually not DDA compliant and are expensive to retrofit.</li> <li>• Designs for public toilets are expected to comply with Australian Standards AS 1428.1 and AS 1428.2.</li> </ul>
National Construction Code (2019)	<ul style="list-style-type: none"> <li>• The National Construction Code adopted a new model of public toilets, inspired by the Changing Places design in 2019.</li> <li>• An accessible adult change facility is now required at the following public facilities:               <ul style="list-style-type: none"> <li>› class 6 buildings: shopping centres with a design occupancy of not less than 3,500</li> <li>› museum or art gallery or similar buildings with a design occupancy of not less than 1,500</li> <li>› class 9b sports venues with a design occupancy of not less than 35,000 or which contain a swimming pool that has a perimeter of not less than 70m</li> <li>› theatre and entertainment venues having a design occupancy of not less than 1,500 patrons</li> <li>› domestic and international passenger airports.</li> </ul> </li> <li>• The National Construction Code specifies design requirements for the facilities.</li> </ul>
Absolutely Everyone: Victoria State Disability Plan (2017-2020)	<ul style="list-style-type: none"> <li>• The Plan sets out strategies and actions to ensure that people with a disability have full equality, inclusion, and participation in society.</li> <li>• The Plan seeks to ensure that all government buildings, public infrastructure, and other facilities used every day by Victorians are accessible.</li> <li>• Contribute to the accessibility of facilities, the Plan commits to building a number of new Changing Places facilities at key community locations close to public transport.</li> <li>• Changing Places facilities are defined as public toilets with full-sized change tables and hoists in major public spaces that meet the needs of people with a disability having high support needs</li> <li>• Under this policy, the State Government has since funded the construction of 26 Changing Places toilets in major public spaces in Victoria.</li> <li>• The 2018 Funding Round provided \$2 million to construct facilities in popular tourist locations, parks, and community hubs.</li> </ul>

Victorian Health and Human Services Building Authority Changing Places Design Specifications 2020	<ul style="list-style-type: none"> <li>• Updated Changing Places design specifications were recently released. They provide all necessary information needed to construct a Changing Places facility, including cost estimates. The specifications offer a choice of four design options that vary the configuration of the shower facility.</li> <li>• It is recommended that Changing Places facilities are accredited and approved by a Changing Places Assessor to ensure they are fit for purpose</li> </ul>
G21 Regional Growth Plan (2013)	<ul style="list-style-type: none"> <li>• Colac is a District Town, providing essential services and infrastructure for the rural hinterland, with key health, education, and research facilities.</li> <li>• Colac township has a long term population target of approximately 20,000</li> <li>• The Shire's strengths are: <ul style="list-style-type: none"> <li>› Eco-tourism</li> <li>› Renewable energy research</li> <li>› Agriculture</li> <li>› Forestry</li> <li>› Food production</li> </ul> </li> <li>• Key infrastructure and project work is identified for Colac in the Strategy, with no discussion of toilet-specific works</li> </ul>
G21 Physical Activity Strategy (2014-2017)	<ul style="list-style-type: none"> <li>• At a community level, the following factors can have a negative impact on physical activity participation: <ul style="list-style-type: none"> <li>› Inadequate facilities and areas of open space as a result of poor planning and lack of activation.</li> </ul> </li> <li>• At a societal level, participation can be limited if:</li> <li>• People don't feel that facilities and areas of open space are safe.</li> </ul>
Great Ocean Road Action Plan (2019)	<ul style="list-style-type: none"> <li>• The Great Ocean Road attracts more visitors than Uluru and the Great Barrier Reef combined and its visitors spend \$1.3 billion a year, supporting 11,200 jobs in the region.</li> <li>• Objectives include growing the local, state and national visitation economies. This involves enhancing the experience of the touring route and its destinations for all visitors.</li> </ul>
Strategic Master Plan for the Great Ocean Road Region Visitor Economy (2015-2025)	<ul style="list-style-type: none"> <li>• The population growth west of Geelong will increase the pressure on beaches and create additional challenges for existing infrastructure to meet demand for usage, particularly parking and toilets. Maintaining good access, facilities and infrastructure will require continued development and investment.</li> </ul>
Council Plan (2017-2021)	<ul style="list-style-type: none"> <li>• Relevant strategies to achieve goals outlined in The Plan: <ul style="list-style-type: none"> <li>› Improve public toilets and amenities in Colac and throughout the Shire.</li> <li>› Improve Great Ocean Road and supporting assets (e.g. roadside edges quality of the road, toilet blocks and drainage).</li> </ul> </li> </ul>
Colac Otway Public Open Space Strategy (2011)	<ul style="list-style-type: none"> <li>• Additional walking and cycling paths and toilet facilities and improved maintenance were the four most important reasons given in the community feedback on the Issues and Opportunities Paper that would encourage more use of open space.</li> <li>• Upgrade the public toilets and provide changing facilities at the Apollo Bay Harbour. Those provided in state level open spaces would be those needed by visitors from outside the local area such as car parking and toilets</li> </ul>

Active Transport Strategy (2013-2023)	<ul style="list-style-type: none"> <li>• Nothing of direct relevance.</li> </ul>
Apollo Bay Destination Action Plan (2018-2020)	<ul style="list-style-type: none"> <li>• Improve visitor experience through better maintenance of visitor facilities such as public toilets, walking trails and lookouts.</li> </ul>
Otway Coast Hamlets Destination Action Plan (2017 – 2020)	<ul style="list-style-type: none"> <li>• Challenges: <ul style="list-style-type: none"> <li>› Local government support for facilities e.g. parking and toilets.</li> </ul> </li> <li>• Prepare a priority list of infrastructure maintenance and improvements for the GOR Central Coast towns (Wye River, Kennett River, Separation Creek, Wongarra). <ul style="list-style-type: none"> <li>› Consider accessible public toilets and wayfinding signing.</li> </ul> </li> </ul>
Memorial Square Masterplan (2018)	<ul style="list-style-type: none"> <li>• A Masterplan was prepared in 2018 for Memorial Square in Colac.</li> <li>• The vision for the Square is to maintain the formal layout while making it more attractive and accessible.</li> <li>• Memorial Square serves as a popular stop-over due to its toilet facilities, long vehicle parking spaces, playspace and proximity to retail shops, cafes and restaurants.</li> <li>• Background documents recommend upgrades to the toilet facility</li> <li>• More up to date toilets are required if the square is to continue to be utilised more and hold more events in the future. Toilet capacity cannot cater for the high intensity of use when one or more bus tours arrive at the square and shops for a rest period.</li> <li>• A mural from a historical perspective should be incorporated on the toilet block.</li> <li>• The Masterplan recommends a new toilet block on Gellibrand Street <ul style="list-style-type: none"> <li>› 6 cubicle unisex toilets plus two disabled toilets and two baby change rooms (10 in total) at a cost of \$1.37 million</li> </ul> </li> </ul>
Colac CBD & Entrances Project Report (2012)	<ul style="list-style-type: none"> <li>• A Colac CBD &amp; Entrances Project was undertaken in 2012 on the design the buildings and spaces of the Colac CBD and the eastern and western entrances to Colac.</li> <li>• The Project report notes that the toilet block is outdated.</li> <li>• The project recommends demolition of the existing toilet block and construction of new facilities.</li> <li>• A concept plan was proposed which included an upgraded/expanded toilet block with: <ul style="list-style-type: none"> <li>› Baby change facilities</li> <li>› Male and female toilets</li> <li>› Disabled toilets</li> </ul> </li> </ul>
Cororooke Open Space Landscape Masterplan (2019)	<ul style="list-style-type: none"> <li>• A Landscape Masterplan was prepared in 2019 for the Cororooke Open Space, and an upgraded playspace and other facilities have since been installed.</li> <li>• The Reserve now has a toilet block that has a disabled-access pathway to the toilets from the carpark.</li> </ul>
Forrest Common Masterplan (2019)	<ul style="list-style-type: none"> <li>• A Masterplan was prepared in 2019 for Forrest Common, an open space adjacent to the Forrest Caravan Park.</li> <li>• The space currently has a playspace, BBQ shelter, information board, and seating.</li> <li>• Forrest is a popular stopping-off point for travellers to/from the coast and the Otway Ranges.</li> <li>• The adjacent Caravan Park has toilets, and the Masterplan suggests upgrades to these toilets for shared use with the park.</li> </ul>

Gellibrand Rex Normal Park Masterplan (2016)	<ul style="list-style-type: none"> <li>This masterplan was prepared in 2016; it aims to provide a realistic and achievable vision for the Park, where the needs and requirements of the user groups, community and Council are established and balanced.</li> <li>The existing toilet block is somewhat hidden- the plan recommends installing directional signage to the toilet block from nearby key sites</li> <li>The Plan recommends extending the existing toilet block in the long-term, should demand require.</li> </ul>
Barwon Downs Township Master Plan (2006)	<ul style="list-style-type: none"> <li>Construct new public toilets within the Old School Grounds behind the proposed tourist information building (Bank replica).</li> </ul>
Beeac Township Master Plan (2002)	<ul style="list-style-type: none"> <li>Renovation and upgrading of public toilets including provision for disabled access.</li> </ul>
Beech Forest Township Master Plan (2004)	<ul style="list-style-type: none"> <li>Development of a low-key self-sufficient camping reserve including a small amenities block, a basic camp kitchen and powered / unpowered camp sites. The development of the camp site to be subject to a feasibility study.</li> </ul>
Birregurra Structure Plan (2013)	<ul style="list-style-type: none"> <li>Improve existing public toilets, with construction of new public toilets in Birregurra Park once sewerage infrastructure is installed.</li> <li>Development of internal and external facilities at Forrest Hall, including kitchen upgrades, sound proofing, paving and insulation, septic and toilet upgrade and an extension to include storage and art space.</li> <li>Work with the DSE to develop an integrated strategy for development and investment in the Forrest mountain bike riding area, e.g. change/toilet facilities.</li> </ul>
Carlisle River Township Master Plan (2004)	<ul style="list-style-type: none"> <li>Construction of public toilets with disabled access (near the Hall and visible from the Carlisle River and Colac Road).</li> <li>New toilet facilities, with male and female toilets which both accommodate disabled access requirements. Toilet design to be sympathetic to Hall architecture and colours. Link toilets to Hall with a sealed path.</li> <li>Replace existing toilets with new, easily accessible facilities adjacent to the Hall.</li> </ul>
Cressy Township Master Plan (2002)	<ul style="list-style-type: none"> <li>Nothing of direct relevance.</li> </ul>
Forrest Structure Plan (2011)	<ul style="list-style-type: none"> <li>To capture the tourist dollar as effectively as possible, opportunities for people to spend longer in town should be facilitated. It is considered infrastructure for bike and equipment storage should be located at the current mountain bike drop off location, to be used in conjunction with the picnic facilities and toilets.</li> <li>Explore opportunities to develop public showers and lockers in association with existing public toilets and picnic areas at the mountain bike drop off locations to the north of town.</li> </ul>
Gellibrand Township Master Plan (2005)	<ul style="list-style-type: none"> <li>Gellibrand River Recreation Reserve: New toilets (long term) short term option to improve drainage works.</li> </ul>

Lake Colac Foreshore Masterplan (2016-2026)	<ul style="list-style-type: none"> <li>• Consider the need to retain the toilet box at the end of Stodart Street when new public toilets are provided in the yacht/sea scout/park precinct at the end of Hamilton Street.</li> <li>• The playspace is to be upgraded; if it is upgraded to a regional-level facility, this will require the toilet block to also be upgraded.</li> <li>• Replace existing toilet at Meredith Park, locating the new facility to the eastern edge of the camping grounds to enable septic lines into the plantation. Shower to be included in new facility.</li> </ul>
Lavers Hill Township Master Plan (2006)	<ul style="list-style-type: none"> <li>• Construction of the new toilet block behind the Hall, which will include dual access from outside and inside the Hall.</li> </ul>
Red Rock Region Community Infrastructure Plan (2013)	<ul style="list-style-type: none"> <li>• Warrion: <ul style="list-style-type: none"> <li>› Upgrades to the Public Hall to include disabled access, renovation of toilets and the introduction of outdoor seating and a BBQ.</li> </ul> </li> <li>• Cororooke: <ul style="list-style-type: none"> <li>› Consider creation of a Central Park hub area to include public toilets, picnic facilities, shelter shade trees, pedestrian paths as well as paths linking the Gallery, General Store, Tennis Courts and Hall.</li> <li>› Lake Corangamite Nature Reserve: Explore the viability of enviro-toilets such as those along the Great Ocean Walk.</li> </ul> </li> </ul>
Swan Marsh Township Master Plan (2008)	<ul style="list-style-type: none"> <li>• Toilet upgrades including improved lighting, towel railings, mirrors, shelter between hall and toilets, bins and child proof gates at both ends of toilets</li> </ul>

Item: 9.3

## Combined Amendment C111cola and Planning Permit Application PP219/2020 - Consideration of Planning Panel Report

<b>OFFICER</b>	Erin Sonego and Ravi Ayyagari
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Community and Economy
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. Amended Planning Permit - Post Panel Changes for Council Approval [9.3.1 - 12 pages]</li> <li>2. Panel Report [9.3.2 - 36 pages]</li> <li>3. Application Plans [9.3.3 - 7 pages]</li> <li>4. Proposed Liquor License Red Line Area [9.3.4 - 1 page]</li> <li>5. Proposed Advertising Signage [9.3.5 - 1 page]</li> <li>6. Proposed Fire Protective Fence Detail [9.3.6 - 1 page]</li> <li>7. Amendment C111cola Zone Map [9.3.7 - 1 page]</li> <li>8. Proposed Plan of Subdivision [9.3.8 - 2 pages]</li> </ol>

### 1. PURPOSE

The purpose of this report is to present Council with the Panel Report in relation to submissions received to the combined amendment and planning permit application for the Red Rock Region Theatre and Art Gallery expansion proposal.

### 2. EXECUTIVE SUMMARY

Council considered submissions received in respect of combined Amendment C111cola and planning permit application PP219/2020 on 23 March 2022 and resolved to refer unresolved submissions to an independent planning panel, appointed by the Minister for Planning. The appointed Planning Panel conducted a public hearing on 14 June 2022 when it heard from the parties to the hearing, including one submitter.

Council has received the Panel report (refer to Attachment 2). The Panel report supports the amendment and grant of a planning permit generally as presented to the Panel, with minor amendments to the permit conditions. Council must now consider the report and resolve to either

adopt the amendment (with or without changes) or to abandon the amendment. If adopted, the amendment will be forwarded to the Minister for Planning for approval.

### 3. RECOMMENDATION

**That Council:**

1. ***Pursuant to Section 96F of the Planning and Environment Act 1987, receives and considers the Panel Report.***
2. ***Pursuant to Section 96G of the Planning and Environment Act 1987, adopts the Amendment in full, with the changes to planning permit conditions recommended by the Panel.***
3. ***Pursuant to Section 96H of the Planning and Environment Act 1987, resolves to submit the Amendment and permit application to the Minister for Planning for approval.***

### 4. KEY INFORMATION

#### **The Amendment and Planning Permit Application**

The proposal is a combined planning scheme amendment and planning permit application, requested pursuant to Section 96A of the *Planning and Environment Act 1987* (the Act). The amendment and planning permit affects land at 520 Corangamite Lake Road and 30 Factory Road, Cororooke.

The **planning scheme amendment** proposes to rezone an area of land at the rear of the existing theatre and art gallery (approximately 4,900 square metres – to be verified through formal survey) from Farming Zone to Township Zone.

The **planning permit application** seeks permission for the following:

- Boundary realignment to incorporate the rezoned land into the existing Red Rock Region Theatre and Art Gallery (RRRTAG) site, and consolidation of all existing and proposed infrastructure on the one lot.
- Subdivision of the balance land at 30 Factory Road into two lots, creating separate titles for the existing Farming Zone and Township Zone portions of that balance land.
- Construction of a café and tram lounge on the RRRTAG site, as well as associated works comprising car parking and upgrades to the onsite wastewater system.
- A number of minor additional works, including updating signage and construction of fences and drainage.
- Change of use to allow the operation of the café, with an on-premises liquor licence (including operating hours).

#### **Exhibition and submissions**

The combined amendment and permit application was exhibited for six weeks between 2 December 2021 and 21 January 2022. Notice was published in the Colac Herald and on Council's and DELWP's websites, and letters were sent to all adjoining property owners and occupiers.

Seven submissions were received; out of these, three were unresolved. One of the unresolved submissions raised concerns that were not planning issues and therefore were unable to be addressed through the planning process. However, that submitter was invited to attend a Consultation Meeting (i.e. a meeting between objectors and the applicant facilitated by Council) and the Planning



Committee meeting, and the submission was provided to the Panel. The Panel considered the submission and determined that it was not relevant to the amendment and therefore unable to be considered.

Following consultation with submitters, and prior to consideration by the Panel, the following changes were made to the draft planning permit to address submitter concerns about potential amenity impacts from the proposal:

- Inclusion of additional landscaping requirement.
- Amendment of the CFA condition relating to defensible space between the tram lounge and the southern boundary of the site.
- Inclusion of a condition preventing the use of the eastern deck adjoining the tram lounge for external theatre events.
- Inclusion of a condition requiring the applicant to enter into an agreement under section 173 of the Act relating to the implementation and maintenance of bushfire protection measures.

These changes formed part of Council's submission to the Panel and have been considered in the Panel's assessment of the proposal.

### **Unresolved submissions**

As stated above, three submissions were unresolved and referred to a Panel, with one of those submissions being outside the scope of matters that the Panel was able to consider. In summary, the two remaining submissions raised the following matters:

- Lack of policy support for the rezoning
- Fragmentation of agricultural land and impact of the proposed use on existing farming activities (noise and light would impact on livestock and residential amenity)
- Opportunity to accommodate a wider range of uses once rezoned
- Alternative options exist to upgrade buildings and associated infrastructure
- Amenity and community impact of the liquor licence
- Impact on privacy of the residents of the dwelling on the adjoining land

### **Planning Panel Hearing**

The Panel Hearing was held on Tuesday 14 June 2022 at the Civic Hall. The hearing was held in person due to the available web conferencing facilities not meeting the specific requirements of the Panel. Specifically, no camera was available that would provide a complete view of the room. The alternative meeting rooms were unavailable for a full-day booking within a reasonable time-frame of the Directions Hearing.

### **Planning Panel Report**

The Planning Panel Member, having reviewed the submissions and other material, makes the following recommendations in the Panel Report:

- 1. *"Amendment C111cola to the Colac Otway Planning Scheme be adopted as exhibited.***
- 2. *Planning Permit PP219/2020-1 be granted to allow the subdivision of the land at 30 Factory Road and 520 Corangamite Lake Road into three lots, extension and alteration to buildings and associated works, construction of car parking and fencing, use of land as a food and drink premises (café) and for the sale and consumption of liquor (on-premises license), temporary use of the land as a store (storage of tram), alteration of access to a Road in a***

***Transport Zone 2, display of signs and reduction of bicycle parking requirements subject to conditions in Appendix D. “***

The Panel makes the following points in relation to the justification of the amendment against relevant policy, in response to the submissions which pose that there is insufficient strategic justification for the amendment:

- *“The amendment will result in the loss of a very small area of strategic agricultural land. The Rural Living Strategy acknowledges and accepts that this will be a consequence of future development in Cororooke. The Panel has weighted this loss accordingly.*
- *The Panel is not persuaded that the Rural Living Strategy and Rural Land Strategy are so instructive in opposition to the amendment that it should fail. The modest expansion of the Township Zone to achieve a specific outcome for a community facility aiming to broaden its appeal for tourism is, in the Panel’s view, aligned with the outcome of the Rural Living Strategy to accommodate demand for, and consolidate community infrastructure. Importantly, it is consistent with the Municipal Planning Strategy which seeks to facilitate development of small towns through tourism and economic development responsive to environmental conditions.*
- *As with all planning matters, policy objectives must be balanced to determine what an appropriate outcome or decision is, in this case, the Panel finds that the amendment will result in a net community benefit by facilitating a modest expansion of a local enterprise that will continue to meet the community’s need for entertainment and community facilities and broaden its appeal for tourism. “*

The Panel report contains the following commentary in support of the planning permit application, in response to the submission which raises concerns that the proposal will result in a range of adverse impacts on the adjoining property:

- *“Permit conditions will manage the potential amenity impacts of the proposal on adjoining land. The Panel was satisfied that these conditions, combined with the separation between the dwelling and RRRTAG, will manage potential amenity impacts.*
- *The Panel considers that the restriction on events should extend to the grassed area adjoining the proposed deck. This is consistent with undertakings given by RRRTAG that outdoor entertainment is not proposed.*
- *The proposed licensed area and hours of operation for sales and consumption of liquor are appropriate”.*

The second dot point above is an additional recommended permit condition, which reinforces the condition proposed by the proponent and drafted by Council to prevent outdoor noise sources.

Additionally, the Panel undertook an assessment of the application against the relevant policies of the planning scheme, and provides the following summary in relation to each of the authorisations sought by the application:

- The scale of the development is proportionate to existing buildings and is supported by Council’s Heritage Advisor
- Increased on-site parking will provide convenient and safe operations for patrons and reduce overflow onto Corangamite Lake Road
- The minor waiver of bicycle parking is appropriate
- Access arrangements are appropriate and supported by Department of Transport
- Bushfire risk has been satisfactorily addressed in the Bushfire Management Plan and is supported by the CFA, subject to conditions.

A revised draft planning permit, incorporating the changes recommended by the Panel, has been attached to this report. The changes are as follows:

- The permit preamble updated to replace reference to Road Zone Category 1 with Transport Zone 2
- The multiple permit conditions for construction management consolidated. (Note: because these conditions had been in specific parts of the draft permit relating separately to development and subdivision, they have had to be moved out of those specific sections of the draft permit to the start of the permit, with subsequent conditions re-numbered.)
- Conditions requiring changes to the current plans consolidated under condition 1
- Restriction on the holding of theatre events expanded to include the grassed area to the east of the tram lounge

**Other matters:**

The submitters, through their representative, raised concerns about the accuracy of the material associated with the planning permit application, and specifically the size of the area to be rezoned. The application documents as exhibited, notated the area to be rezoned as 4,274m<sup>2</sup>. However, using the land's proposed dimensions to calculate the area, a more accurate figure is 4,904m<sup>2</sup>.

Following receipt of the Panel report, the submitter has again raised concerns about the accuracy of the area to be rezoned, and points to a plan within the application (site plan for the development) which notates lot boundaries of 75.954m x 65m. Using these dimensions to calculate the lot area would give a figure of 4,937.01 m<sup>2</sup>.

The Panel accepted Council's submission that an exact lot area is not a significant material issue in the consideration of the impact of the amendment or planning permit application, and therefore not fatal to the amendment. This is for the following reasons:

- The boundary dimensions on the exhibited plan can take precedence over the lot areas.
- Final boundary dimensions will be subject to a survey prior to certification of a plan of subdivision.
- There is flexibility in the draft conditions that can accommodate any variation between the future survey plans submitted for certification and the application plans referred to in the permit conditions.
- The exhibited amendment map showing the area to be rezoned is correct, and the lot boundary can only align exactly with the zone boundary.

Since the release of the Panel report and the further claims of inaccuracy, the proponent has supplied a plan, using the dimensions of the rezoned area, that calculates the area to be 4,907m<sup>2</sup> (attached). It is evident that until the formal plans of subdivision plans are prepared that accord with the proposed zone map, an absolute figure for the site area will not be able to be obtained. However, the position of the Panel is reiterated, i.e. that it does not change the issues requiring consideration and is therefore not material.

Should Council be advised by Planning Panels Victoria of any further change to the Panel's report arising from the concerns expressed by the submitter on these matters prior to the Council meeting, Councillors will be informed, along with any advice as to the implications for Council's consideration of the report.

## 5. CONSIDERATIONS

### **Overarching Governance Principles** (s(9)(2) LGA 2020)

The combined amendment and planning permit application has been processed in accordance with the provisions of the *Planning and Environment Act 1987*. Affected persons have had opportunity to make a submission and have any concerns addressed through changes to the proposed conditions of the planning permit. Any submitters with unresolved concerns have been given opportunity to have their concerns independently considered.

### **Policies and Relevant Law** (s(9)(2)(a) LGA 2020)

The *Planning and Environment Act 1987* and relevant Ministerial Directions govern the processing of a planning scheme amendment and, in this case, an amendment combined with a planning permit application. The amendment has been processed in accordance with the Directions. The amendment and associated planning permit are supported by the relevant policies of the Colac Otway Planning Scheme.

### **Environmental and Sustainability Implications** (s(9)(2)(c) LGA 2020)

It is considered that the proposed amendment would benefit sustainability by allowing the on-site wastewater system to be upgraded. Given the number of patrons currently permitted on site, which would remain the same following the proposed development, this upgrade would be likely to result in improvements to the performance of on-site wastewater treatment and therefore a reduction in potential environmental pollution. It is not anticipated that any adverse environmental impacts would arise from the planning scheme amendment or proposed use/development.

### **Community Engagement** (s56 LGA 2020 and Council's Community Engagement Policy)

Community engagement has been undertaken in accordance with the Act, with the exhibition period being 6 weeks rather than the required one month under section 96C of the Act. Notification and consultation with the relevant agencies and submitters have been undertaken, to ensure that any concerns/issues are understood by Council and where possible, changes made to the amendment. Council heard from submitters who wished to verbally present their submissions, and the Planning Panel also provided a further opportunity for objectors to present their submissions.

### **Public Transparency** (s58 LGA 2020)

All amendment documentation, including the permit application and proposed permit, has been made publicly available as part of the exhibition process. All decisions relating to the amendment have been made at public meetings.

### **Alignment to Plans and Strategies**

Alignment to Council Plan 2021-2025:

Theme 1 - Strong and Resilient Community

Objective 2: Attract, retain and grow business in our Shire

Objective 4: Colac Otway Shire is a destination to visit

Theme 2 - Valuing the Natural and Built Environment

Objective 5: Provide and maintain an attractive and safe built environment

Theme 3 – Healthy and Inclusive Community

Objective 2: People are active and socially connected through engaging quality spaces and places

### **Financial Management** (s101 *Local Government Act 2020*)

All fees and costs associated with the amendment are borne by the proponent, including the cost of the Planning Panel. The proponent must pay a fee to Council for considering submissions, which will cover any costs incurred.

### **Service Performance** (s106 *Local Government Act 2020*)

Not applicable.

### **Risk Assessment**

Any foreseeable risks (e.g., environmental risks such as bushfire) will be managed through planning permit conditions.

### **Communication/Implementation**

Should Council support the recommendation contained in this report, officers will contact submitters, informing them of the outcome and forward the amendment and proposed planning permit to the Minister for Planning for approval.

### **Human Rights Charter**

The amendment and proposed permit application do not contravene any human rights. There has been a thorough assessment of submitter's concerns including through an independent planning panel process.

### **Officer General or Material Interest**

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.

### **Options**

#### Option 1 – Adopt the Amendment as presented to the Panel, with the changes recommended by the Panel

This option is recommended by officers as it is supported by the findings of the Independent Panel and the previous resolution of Council.

#### Option 2 – Adopt the Amendment as exhibited

This option is not recommended by officers as a number of changes were made following exhibition that either partly or fully resolve the concerns of submitters, and this is not the application that was considered by the Panel.

#### Option 3 – Abandon the Amendment

This option is not recommended by officers as the amendment is supported by policy and has passed independent scrutiny. Council is obligated to consider a proposal on its merits, which in this case have been well-established and subject to thorough review.

# PLANNING PERMIT



**PERMIT NO –** PP219/2020-1  
**PLANNING SCHEME –** Colac Otway Scheme  
**RESPONSIBLE AUTHORITY -** Colac Otway Shire

## ADDRESS OF THE LAND:

520 Corangamite Lake Road COROROOKE  
Lot 1 TP: 563474 V/F: 2921/077 Parish of Nalangil

30 Factory Road COROROOKE  
Lot 2 PS135009 Parish of Nalangil V/F: 9415/342

## THE PERMIT ALLOWS:

~~Re-Sub~~ subdivision of the Land into Three Lots, Extensions and Alterations to Building and Associated Works, Construction of Car Park and Erection of Fence, Use of the Land as a Food and Drink Premises (Café) and for the Sale and Consumption of Liquor (On-Premises Licence), Temporary Use of the Land as a Store (Storage of Tram), Alteration of Access to a Road in a ~~Road Zone Category 1~~ Transport Zone 2, Display of Signage and Reduction of Bicycle Parking Requirements in accordance with the endorsed plans.

## THE FOLLOWING CONDITIONS APPLY TO THIS PERMIT

### Amended Plans

1. Prior to the commencement of development, amended plans to the satisfaction of the Responsible Authority must be submitted to and approved by the Responsible Authority. When approved the plans will be endorsed and will then form part of the permit. The plans, which must be drawn to scale with dimensions, must be generally in accordance with the following plans: ~~plans submitted with the application~~
  - Proposed Site Plan prepared by GD Architecture, dated 23 June 2021
  - Proposed Floor plan prepared by GD Architecture, dated 06 July 2021
  - Proposed Elevations prepared by GD Architecture, dated 06 July 2021
  - Liquor Licensing Plan prepared by GD Architecture, dated July 2021
  - Plan of Subdivision prepared by Rod Bright and Associated Pty. Ltd., dated 08 January 2021

but modified to show:

- a) the proposed solid non-combustible fence located along the southern boundary running the distance from the front elevation of the existing former church and gallery/theatre to the rear elevation of the tram lounge building.

Date Issued <<insert date>>

Signature for the  
Responsible Authority

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

b) the location, dimensions, height and materials of the deck to the east of the tram lounge, including details of balustrading and steps, where the width of the deck does not exceed 3.5 metres, and any associated structures (such as balustrading and steps) to the east of the tram lounge, including a section showing the height of the deck above natural ground level.

c) The timber cladding on the proposed café and lounge extension in a dark brown tone.

**Endorsed Plans**

2. The use and development as shown on the endorsed plans must not be altered without the written consent of the Responsible Authority.
3. The location and details of the signage and any supporting structures, as shown on the endorsed plans, must not be altered without the written consent of the Responsible Authority.
4. The area in which liquor is allowed to be consumed or supplied under a licence hereby permitted must not be altered without the written consent of the Responsible Authority.
5. The layout and site dimensions of the subdivision hereby permitted, as shown on the endorsed plan/s, must not be altered or modified without the written consent of the Responsible Authority. There are no requirements to alter or modify the endorsed plan if a plan is certified under the provisions of the Subdivision Act 1988 that is generally in accordance with the endorsed plan/s.

**Construction Management Plan**

6. Prior to the commencement of development or the issue of statement of compliance under the Subdivision Act 1988, whichever is the sooner, a Construction Management Plan must be submitted to and approved by the Responsible Authority. The plan must detail how the site will be managed prior to and during the construction period, and must set out requirements for managing:

- Erosion and sediment.
- The deposit of any sediment or other material by vehicles on the abutting roads.
- Dust.
- Runoff.
- Litter, concrete and other construction wastes.
- Chemical contamination.
- Vegetation and natural features planned for retention.

The plan must include a detailed photographic record of the road reserve/s in the vicinity of the site, which shows the condition of the existing public infrastructure

7. All construction works must be undertaken in accordance with the approved Construction Management Plan. The developer must ensure that all contractors are aware of the requirements of the approved Construction Management Plan and understand how to implement them. No polluted and/or sediment laden runoff is to be discharged directly or indirectly into Colac Otway Shire drains and/or watercourses at any time during construction or operation to the satisfaction of the Responsible Authority.

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

**USE AND DEVELOPMENT CONDITIONS**

**Timing of Development/Use**

~~6-8.~~ Other than works associated with the subdivision hereby permitted, which may commence following the certification of the plan of subdivision under the *Subdivision Act* 1988, the development permitted outside Lot 1 PS563474 must not commence until the land has been subdivided in accordance with the endorsed plans.

~~7-9.~~ The use of the premises as a café must not commence until the approved wastewater system has been installed and is operational.

**Hours of Operation**

~~8-10.~~ The café must only operate between the hours of:

- 10am and 10pm, Sunday – Thursday
- 10am and 12am on Fridays and Saturdays.

~~9-11.~~ The sale and consumption of liquor must only occur between the hours of:

- 10am and 10pm, Sunday – Thursday
- 10am and 11pm on Fridays and Saturdays
- 12 noon and 10pm on Good Friday and ANZAC day

~~10-12.~~ Unless otherwise approved in writing by the Responsible Authority, deliveries to and from the site (excluding fresh produce) must only take place between the hours of 7am and 6pm from Monday to Friday (inclusive).

**Patron Numbers**

~~11-13.~~ No more than 179 patrons in total may be on the site at any time and no more than 80 seats may be made available at any one time to café patrons, unless otherwise approved in writing by the Responsible Authority. All seating must be within the areas identified as the 'artist café' and 'courtyard' on the endorsed plans.

**External Deck**

~~12-14.~~ The deck and grassed area to the east of the tram lounge must not be used for any outdoor theatre events.

**Liquor Licence**

~~13-15.~~ The owner/operator must take all responsible measures to ensure that patrons consuming alcohol remain within the licensed area, so as not to breach conditions of the liquor licence, and that patrons' behaviour is acceptable, so as not to create a nuisance to pedestrians or road users.

---

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate



**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

**Access**

~~44-16.~~ Details of any alterations proposed to the access from Corangamite Lake Road must be submitted to and approved in writing by the Responsible Authority prior to such works being undertaken. Any alterations to the access must be in accordance with the approved details, to the satisfaction of the Responsible Authority.

**Car Parking**

~~45-17.~~ Prior to the commencement of the café use hereby permitted, the area/s set aside for the parking of vehicles and access lanes as shown on the endorsed plans must be:

- a) Constructed;
- b) Properly formed to such levels that they can be used in accordance with the plans;
- c) Surfaced with an all-weather seal coat to the satisfaction of the Responsible Authority;
- d) Drained;
  
- e) Line-marked to indicate each car space and all access lanes;
- f) Clearly marked to show the direction of traffic along access lanes/driveways;
- g) Properly illuminated for both pedestrians and vehicles, with lighting designed, baffled and located to the satisfaction of the Responsible Authority to prevent any adverse effect on adjoining land;

to the satisfaction of the Responsible Authority.

The areas must be constructed, and drained to prevent diversion of flood or drainage waters, and maintained in a continuously useable condition to the satisfaction of the Responsible Authority.

Car spaces, access lanes and driveways must be kept available for these purposes at all times

**Loading/Unloading**

~~46-18.~~ The loading and unloading of goods from service vehicles must only be carried out in the designated loading bay on the site and must not disrupt the circulation and parking of vehicles in the car park to the satisfaction of the Responsible Authority.

**Stormwater Management**

~~47-19.~~ Prior to the commencement of development, a Stormwater Management Plan to the satisfaction of the Responsible Authority must be submitted to and approved by the Responsible Authority. The Stormwater Management Plan must show how the developed site will be effectively drained without causing detrimental downstream effects, which includes construction details of the works on the drainage easement, to the satisfaction of the Responsible Authority.

The design must also provide details on the bio-retention swale drain to the satisfaction of the Responsible Authority.

All works must be undertaken in accordance with the approved Stormwater Management Plan to the satisfaction of the Responsible Authority.

---

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

~~18-20.~~ During construction works, the site must be developed and managed to ensure there is no stormwater pollution through the contamination of runoff by chemicals, sediments, wastes or pollutants in accordance with 'Best Practice Environmental Management Guidelines for Stormwater Management and Construction Techniques for Sediment Pollution Control' (EPA), to the satisfaction of the Responsible Authority.

**Construction Management Plan**

~~19.1.~~ Prior to the commencement of development, unless otherwise approved in writing by the Responsible Authority, a Construction Management Plan must be submitted to and approved by the Responsible Authority. The plan must detail how the site will be managed prior to and during the construction period, and must set out requirements for managing:

- ~~• Erosion and sediment.~~
- ~~• The deposit of any sediment or other material by vehicles on the abutting roads.~~
- ~~• Dust.~~
- ~~• Runoff.~~
- ~~• Litter, concrete and other construction wastes.~~
- ~~• Chemical contamination.~~
- ~~• Vegetation and natural features planned for retention.~~

~~The plan must include a detailed photographic record of the road reserve/s in the vicinity of the site, which shows the condition of the existing public infrastructure.~~

~~20.1.~~ All construction works must be undertaken in accordance with the approved Construction Management Plan. The developer must ensure that all contractors are aware of the requirements of the approved Construction Management Plan and understand how to implement them. No polluted and/or sediment laden runoff is to be discharged directly or indirectly into Colac Otway Shire drains and/or watercourses at any time during construction or operation to the satisfaction of the Responsible Authority.

**Wastewater**

21. An onsite wastewater management system must be constructed concurrently with the extensions hereby permitted, so that all liquid waste is at all times contained within the curtilage of proposed Lot 1 on the endorsed plans. The design and installation of any wastewater disposal system for any building on the land must comply with 'Code of Practice - Onsite Wastewater Management', July 2016 (EPA Publication No. 891.4, or as amended), to the satisfaction of the Responsible Authority.
22. Prior to the commencement of development, EPA approval must be obtained for the proposed onsite wastewater treatment and disposal system and, if required by the EPA prior to works, also a development licence and operating licence.

**Noise Management**

23. The use hereby permitted must comply with the *Environment Protection Regulations 2021* in relation to noise assessment, control and management from commercial premises and from premises that provide outdoor or indoor entertainment or events, including with noise limits set for day, evening and night.

---

Date Issued <<insert date>>

Signature for the  
Responsible Authority

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

24. The use hereby permitted must comply with the Noise Control Guidelines (EPA publication 1254.2) in relation to noise from deliveries to shops, public address systems, commercial and industrial waste collection, mobile vendors and truck mounted refrigeration units.

**External Colours**

25. Unless otherwise approved in writing by the Responsible Authority, the timber cladding on the proposed café and lounge extensions must be a mid-brown tone rather than a dark-brown tone.

**Landscaping**

26. Prior to the commencement of development, a landscape plan to the satisfaction of the Responsible Authority must be submitted to and approved by the Responsible Authority. When approved, the plan will be endorsed and will then form part of the permit. The plan, which must be drawn to scale with dimensions, must show:

- a) a survey (including botanical names) of all existing vegetation within proposed Lot 1.
- b) landscaping within the site in the vicinity of the boundary shared with 480 Corangamite Lake Road and around the proposed car park, to provide screening of the proposed development

from that adjacent property. This landscaping must accord with the defensible space requirements specified in condition 34a.

- c) a planting schedule of all proposed trees, shrubs and ground covers in the subject site, including botanical names, common names, sizes at maturity, and quantities of each plant.

All species selected must be to the satisfaction of the Responsible Authority.

27. Prior to commencement of the use hereby permitted, or by such later date as is approved by the Responsible Authority in writing, the landscaping works shown on the endorsed plans must be completed to the satisfaction of the Responsible Authority. The landscaping must thereafter be maintained to the satisfaction of the Responsible Authority, including that any dead, diseased or damaged plants are to be replaced.

**General Amenity**

28. All security alarms or similar devices installed on the land must be of a silent type in accordance with any current standard published by Standards Australia International Limited and must be connected to a security service.
29. External lighting must be designed, baffled and located so as to prevent any adverse effect on adjoining land to the satisfaction of the Responsible Authority.
30. No external sound amplification equipment or loudspeakers are to be used for the purpose of announcement, broadcast, playing of music or similar purpose, except with the prior written approval of the Responsible Authority for an individual event.

---

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

31. The use must be managed so that the amenity of the area is not detrimentally affected, through the:

- a) transport of materials, goods or commodities to or from the land;
- b) appearance of any building, works or materials;
- c) emission of noise, artificial light, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil;

all to the satisfaction of the Responsible Authority.

**Signage**

32. The sign must be constructed and maintained to the satisfaction of the Responsible Authority, and must not be illuminated by external or internal light except with the prior written consent of the Responsible Authority.

**Temporary Store**

33. Unless otherwise approved in writing by the Responsible Authority, or the tram is moved into the building as shown on the endorsed plans, the use of the land to store the tram must cease within 5 years of the date of this permit.

**CFA Conditions**

Bushfire Management Plan

34. Before the development starts, a Bushfire Management Plan (BMP) must be submitted to and endorsed by the Responsible Authority. The plan must show the following bushfire protection measures, unless otherwise agreed in writing by the CFA and the Responsible Authority:

a) Defendable Space

Show an area of defendable space for a distance of:

- 19 metres to the east,
- 19 metres or to the property boundary to the north whichever is closest, and
- To the property boundary to the south and west.

Where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.

---

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

- Trees must not overhang or touch any elements of the building.
  - The canopy of trees must be separated by at least 2 metres.
  - There must be a clearance of at least 2 metres between the lowest tree branches and ground level.
- b) Construction Standard  
Nominate a minimum Bushfire Attack Level of BAL – 12.5 that the building will be designed and constructed.
- c) Water Supply  
Show 10,000 litres of effective water supply for fire fighting purposes which meets the following requirements:
- Be stored in an above ground water tank constructed of concrete or metal.
  - Have all fixed above ground water pipes and fittings required for firefighting purposes made of corrosive resistant metal.
  - Include a separate outlet for occupant use.
  - Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority.
  - Be located within 60 metres of the outer edge of the approved building.
  - The outlet/s of the water tank must be within 4 metres of the accessway and unobstructed.
  - Incorporate a separate ball or gate valve (British Standard Pipe (BSP 65 millimetre) and coupling (64 millimetre CFA 3 thread per inch male fitting).
  - Any pipework and fittings must be a minimum of 65 millimetres (excluding the CFA coupling)
- d) Access  
Show the access for fire fighting purposes which meets the following requirements:
- All weather construction.
  - A load limit of at least 15 tonnes.
  - Provide a minimum trafficable width of 3.5 metres
  - Be clear of encroachments for at least 0.5 metre on each side and at least 4 metres vertically.
  - Curves must have a minimum inner radius of 10m.

Bushfire Emergency Plan

Certification of emergency management arrangements

35. Within six (6) months from the works commencing, a suitably qualified person in emergency planning must provide certification to CFA and the Responsible Authority that an Emergency Management Plan (or other named document) for the entire site/facility has been prepared that:
- a) Is generally consistent with Australian Standard AS3745-2010 Planning for emergencies in facilities (as appropriate).

---

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

- b) Specifically identifies bushfire as a hazard to which the facility and occupants may be vulnerable to.
- c) Contains appropriate procedures so that the facility is closed on a days of a Code Red Fire Danger Rating.

**SUBDIVISION CONDITIONS**

**Easements**

36. Prior to the certification of the plan of subdivision under the *Subdivision Act* 1988, all easements deemed necessary to protect existing or future drainage lines within the subject site, and any easements required between the subject site and the nominated legal point of discharge must be created to the satisfaction of the Responsible Authority.

**Stormwater Management**

37. Prior to the issue of a statement of compliance under the *Subdivision Act* 1988, all stormwater runoff from the development, including overflow from water storage, must be taken to a legal point of discharge to the satisfaction of the Responsible Authority.

38. Prior to the issue of a statement of compliance under the *Subdivision Act* 1988, a Stormwater Management Plan to the satisfaction of the Responsible Authority must be submitted to and approved by the Responsible Authority. The Stormwater Management Plan must show how the developed site will be effectively drained without causing detrimental downstream effects, which includes construction details of the works on the drainage easement, to the satisfaction of the Responsible Authority.

The design must also provide details on the bio-retention swale drain to the satisfaction of the Responsible Authority.

All works must be undertaken in accordance with the approved Stormwater Management Plan to the satisfaction of the Responsible Authority, prior to the issue of a statement of compliance under the *Subdivision Act* 1988.

**Construction Management Plan**

~~39. Prior to the issue of a statement of compliance under the *Subdivision Act* 1988, a Construction Management Plan must be submitted to and approved by the Responsible Authority. The plan must detail how the site will be managed prior to and during the construction period, and must set out requirements for managing:~~

- ~~• Erosion and sediment.~~
- ~~• The deposit of any sediment or other material by vehicles on the abutting roads.~~
- ~~• Dust.~~
- ~~• Runoff.~~
- ~~• Litter, concrete and other construction wastes.~~
- ~~• Chemical contamination.~~
- ~~• Vegetation and natural features planned for retention.~~

~~The plan must include a detailed photographic record of the road reserve/s in the vicinity of the site, which shows the condition of the existing public infrastructure.~~

Date Issued <<insert date>>

Signature for the Responsible Authority

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

~~40. All construction works must be undertaken in accordance with the approved Construction Management Plan. The developer must ensure that all contractors are aware of the requirements of the approved Construction Management Plan and understand how to implement them. No polluted and/or sediment laden runoff is to be discharged directly or indirectly into Colac Otway Shire drains and/or watercourses at any time during construction or operation to the satisfaction of the Responsible Authority.~~

**Section 173 Agreement**

~~41-39.~~ Prior to the issue of a statement of compliance under the *Subdivision Act* 1988, the owner of the land must enter into an agreement under Section 173 of the *Planning and Environment Act* 1987 with the Responsible Authority. The agreement must be in a form to the satisfaction of the Responsible Authority, and the applicant must be responsible for the expense of the preparation and registration of the agreement, including the Responsible Authority's reasonable costs and expenses (including legal expenses) incidental to the preparation, registration and enforcement of the agreement. The agreement must contain covenants to be registered on the Title of the property so as to run with the land, and must provide for the following:

Compliance with the Bushfire Protection Measures

- a) If development is constructed on the lot, the bushfire protection measures must be:
  - i. implemented; and
  - ii. maintained at all times,

in accordance with any requirements specified in the endorsed Bushfire Management Plan, at the full cost of the Owner and to the satisfaction of the Responsible Authority;

Defendable Space

- b) Unless the prior written consent of the Responsible Authority is obtained, the defendable space set out in the Bushfire Management Plan must be:
  - i. implemented on the land prior to the issue of a statement of compliance for the subdivision authorised by planning permit PP219/2020-1, or any subsequent amendment to that permit; and
  - ii. maintained on a continuing basis by the owner of each lot regardless of whether development is constructed on that lot,

to the satisfaction of the Responsible Authority; and

Amendments to the Bushfire Management Plan

- c) The Bushfire Management Plan must not be amended unless the prior written consent of the Responsible Authority is obtained.

The agreement will be registered on title in accordance with Section 181 of the Planning and Environment Act 1987.

---

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate

**CONDITIONS CONTINUED FOR PERMIT NO. PP219/2020-1**

**Servicing Authorities**

42-40. The owner of the land must enter into agreements with the relevant authorities for the provision of water supply, drainage, sewerage facilities, electricity and gas services to each lot shown on the endorsed plan in accordance with the authority's requirements and relevant legislation at the time.

43-41. All existing and proposed easements and sites for existing or required utility services and roads on the land must be set aside in the plan of subdivision submitted for certification in favour of the relevant authority for which the easement or site is to be created.

44-42. The plan of subdivision submitted for certification under the *Subdivision Act 1988* must be referred to the relevant authority in accordance with Section 8 of that Act.

**Telecommunications**

45-43. The owner of the land must enter into an agreement with:

- a telecommunications network or service provider for the provision of telecommunication services to each lot shown on the endorsed plan in accordance with the provider's requirements and relevant legislation at the time; and
- a suitably qualified person for the provision of fibre ready telecommunication facilities to each lot shown on the endorsed plan in accordance with any industry specifications or any standards set by the Australian Communications and Media Authority, unless the applicant can demonstrate that the land is in an area where the National Broadband Network will not be provided by optical fibre.

46-44. Before the issue of a Statement of Compliance under the *Subdivision Act 1988*, the owner of the land must provide written confirmation from:

- a telecommunications network or service provider that Lots 1 and 2 are connected to or are ready for connection to telecommunications services in accordance with the provider's requirements and relevant legislation at the time; and
- a suitably qualified person that fibre ready telecommunication facilities have been provided in accordance with any industry specifications or any standards set by the Australian Communications and Media Authority, unless the applicant can demonstrate that the land is in an area where the National Broadband Network will not be provided by optical fibre.

**Expiry**

47-45. This permit will expire if one of the following circumstances applies:

- a) The plan of subdivision has not been certified within two (2) years of the date of this permit;
- b) The development has not commenced within three (3) years of the date of this permit;
- c) A statement of compliance is not issued within five (5) years of the date of certification;
- d) The development is not completed within five (5) years of the date of this permit.

In accordance with section 69 of the *Planning and Environment Act 1987*, an application may be made to the Responsible Authority to extend the periods referred to in this condition.

---

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate



**Notes:**

1. This permit does not authorise the commencement of any building works. Prior to commencement of development, it will also be necessary to obtain a building permit.
2. Prior to preparing drainage plans, a legal point of discharge (LPOD) must be obtained in accordance with Building Regulation 133. A copy of the LPOD, which incurs a fee in accordance with the Building Regulations, must be submitted with the engineering plans.
3. The conditions in this permit relating to telecommunications do not apply to the lot in the Farming Zone.
4. A works within road reserve permit is required prior to any works being undertaken on Council managed road reserves within the Colac Otway Shire.
5. At least seven (7) days before any works start, an Asset Protection Permit must be obtained from Council. Council infrastructure must be maintained in a safe condition during the construction period. Any damage caused by these works to Council assets must be reinstated to the satisfaction of the Council prior to the completion of works.
6. The consumption of liquor within the development allowed by this permit must not commence until such time as a Liquor Licence has been issued by the Victorian Commission for Gambling and Liquor Regulation (VCGLR), pursuant to the *Liquor Control Reform Act 1988*, as amended.
7. Restrictions to the numbers of persons allowed onsite at the proposed facility (theatre) including the café may be imposed by either the EPA Victoria or Colac Otway Shire's Health Protection Unit should the proposed wastewater volumes (hydraulic/organic loading) pose a risk to the environment or human health and/or where off-site discharge is occurring.

A detailed system design and an addendum to Land Capability Assessment produced by Landtech Consulting project number 596, dated March 27 2021, may be requested by either the EPA of Victoria or Council's Health Protection Unit to support the wastewater application.

Environment Protection Authority (EPA)

8. This permit is not an EPA permission/approval. Before the use or development authorised under this permit starts, the permit holder must ensure that any obligations or duties that arise under the *Environment Protection Act 2017* are met. This may include obtaining an EPA permission, approval or exemption, in accordance with the *Environment Protection Regulations 2021*.
9. The amended *Environment Protection Act 2017* has now come into effect as of 1 July 2021.

The amended *Environment Protection Act 2017* imposes new duties on individuals and/or businesses undertaking the activity permitted by this permit. If your business engages in activities that may give rise to a risk to human health or the environment from pollution or waste, you must understand those risks and take action to minimise them as far as reasonably practicable.

---

**Date Issued <<insert date>>**

**Signature for the  
Responsible Authority**

\_\_\_\_\_  
Delegate

**Planning  
Panels  
Victoria**

**Colac Otway Planning Scheme Amendment C111cola and  
Planning Permit Application PP219/2020-1  
Red Rock Regional Theatre and Gallery**

**Panel Report**

*Planning and Environment Act 1987*

**29 July 2022**

**How will this report be used?**

This is a brief description of how this report will be used for the benefit of people unfamiliar with the planning system. If you have concerns about a specific issue you should seek independent advice.

The planning authority must consider this report before deciding whether or not to adopt the Amendment.

[section 27(1) of the *Planning and Environment Act 1987* (the PE Act)]

For the Amendment to proceed, it must be adopted by the planning authority and then sent to the Minister for Planning for approval.

The planning authority may also recommend to the Minister that a permit that applies to the adopted Amendment be granted. The Minister may grant or refuse the permit subject to certain restrictions. [sections 96G and 96I of the PE Act]

The planning authority is not obliged to follow the recommendations of the Panel, but it must give its reasons if it does not follow the recommendations. [section 31 (1) of the PE Act, and section 9 of the *Planning and Environment Regulations 2015*]

If approved by the Minister for Planning a formal change will be made to the planning scheme. Notice of approval of the Amendment will be published in the Government Gazette. [section 37 of the PE Act]

*Planning and Environment Act 1987*

Panel Report pursuant to section 25 of the PE Act

Colac Otway Planning Scheme Amendment C111cola and Planning Permit Application PP219/2020-1

Red Rock Regional Theatre and Gallery

29 July 2022

Alison McFarlane, Chair

## Contents

	<b>Page</b>
<b>1 Introduction.....</b>	<b>1</b>
1.1 The Amendment.....	1
1.2 Background .....	3
1.3 Site inspections .....	4
1.4 Summary of issues raised in submissions .....	4
1.5 Procedural issues.....	5
1.6 The Panel’s approach .....	5
1.7 Limitations .....	6
<b>2 Planning context.....</b>	<b>7</b>
2.1 Planning policy framework.....	7
2.2 Other relevant planning strategies and policies .....	9
2.3 Planning scheme provisions .....	12
<b>3 Strategic justification.....</b>	<b>14</b>
3.1 The issue .....	14
3.2 Submissions.....	14
3.3 Discussion .....	15
3.4 Conclusion and recommendation .....	15
<b>4 Amenity impacts of use and development.....</b>	<b>17</b>
4.1 The issues .....	17
4.2 Evidence and submissions .....	17
4.3 Discussion .....	18
4.4 Conclusions.....	19
<b>5 Planning permit .....</b>	<b>20</b>
<b>Appendix A Submitters to the Amendment</b>	
<b>Appendix B Parties to the Panel Hearing</b>	
<b>Appendix C Document list</b>	
<b>Appendix D Panel recommended changes to conditions</b>	

## List of Tables

	<b>Page</b>
Table 1: Panel recommended changes to conditions.....	28

## List of Figures

	Page
Figure 1: Amendment site .....	1
Figure 2: Proposed site plan .....	2
Figure 3 Subject land and surrounds.....	3
Figure 4: Colac Otway Shire Strategic Framework Plan .....	9
Figure 5: Cororooke proposed settlement boundary and investigation area .....	10
Figure 6: Farmland of Strategic Significance.....	11
Figure 7: Proposed licensed area.....	18

## Glossary and abbreviations

Amendment	Colac Otway Planning Scheme Amendment C111cola
CFA	Country Fire Authority
Council	Colac Otway Shire Council
EPA	Environment Protection Authority
MPS	Municipal Planning Strategy
PE Act	<i>Planning and Environment Act 1987</i>
Planning Scheme	Colac Otway Planning Scheme
RRRTAG	Red Rock Regional Theatre and Gallery
Rural Land Strategy	Colac Otway Rural Land Strategy, 2007
Rural Living Strategy	Colac Otway Rural Living Strategy, 2011

## Overview

Amendment summary	
The Amendment	Colac Otway Planning Scheme Amendment C111cola and Planning Permit Application PP219/2020-1
Common name	Red Rock Regional Theatre and Gallery
Brief description	<p>The Amendment proposes to rezone part of the land at 30 Factory Road, Cororooke from Farming Zone to Township Zone.</p> <p>The Amendment is accompanied by Planning Permit Application PP219/2020-1 applying to 520 Corangamite Lake Road and 30 Factory Road and proposes to subdivide the land into three lots, extend and alter buildings and associated works, construct car parking and fencing, use the land as a food and drink premises (café) and for the sale and consumption of liquor (on-premises licence), temporary use of the land as a store (storage of tram), alter access to a Road in a Transport Zone 2, display signs and reduce bicycle parking requirements.</p>
Subject land	520 Corangamite Lake Road and 30 Factory Road, Cororooke
The Proponent	Andrew Beale of Red Rock Regional Theatre and Gallery
Planning Authority	Colac Otway Shire Council
Authorisation	5 November 2021
Exhibition	2 December 2021 to 21 January 2022
Submissions	Number of Submissions: 7 Opposed: 5 (2 later withdrawn)

Panel process	
The Panel	Alison McFarlane, Chair
Directions Hearing	28 April 2022 by video conference
Panel Hearing	14 June 2022 at Colac Otway Performing Arts Centre
Site inspections	10 June 2022, accompanied
Parties to the Hearing	Refer Appendix B
Citation	Colac Otway PSA C111cola [2022] PPV
Date of this report	29 July 2022

## Executive summary

The Red Rock Theatre and Gallery opened in 2011 in the former St David's Presbyterian Church in the small town of Cororooke, located eight kilometres north-west of Colac. The theatre and gallery are operated by a volunteer Committee of Management and host a variety of cultural and performing arts events, including live theatre, films, and exhibitions.

The purpose of Colac Otway Planning Scheme Amendment C111cola is to provide a single, consolidated site to accommodate an expansion of the theatre and gallery. The Amendment proposes to do this by rezoning part of the land at 30 Factory Road from Farming Zone to Township Zone.

The Amendment is accompanied by Planning Permit Application PP219/2020-1 that applies to the existing theatre and gallery site located at 520 Corangamite Lake Road and 30 Factory Road. The application proposes to subdivide the land to reflect the proposed new zone boundaries and to use and develop a café and artist's green room.

Key issues raised in submissions included:

- lack of policy support for the rezoning
- fragmentation of agricultural land and impact of the proposed use on existing farming activities
- opportunity for site to accommodate a wider range of uses in the future
- alternative options to upgrade buildings and associated infrastructure
- amenity and community impact of the liquor licence.

The Panel finds the modest expansion of the Township Zone for the purpose of expanding the theatre and galley is appropriate. The proposal is aligned with the strategic directions of the Colac Otway Planning Scheme which supports development of small towns through tourism and economic development responsive to environmental conditions.

It is appropriate to grant a planning permit for proposal, subject to conditions to manage potential amenity impacts on adjoining land, including by restricting hours of operation, external lighting and sound amplifications, and the areas where alcohol may be consumed. In addition to restrictions, privacy of adjoining dwellings will be protected through landscaping and restricting use of the proposed deck and grassed area for outdoor theatre events.

### Recommendations

Based on the reasons set out in this Report, the Panel recommends:

- 1. Amendment C111cola to the Colac Otway Planning Scheme be adopted as exhibited.**
- 2. Planning permit PP219/2020-1 be granted to allow the subdivision of the land at 30 Factory Road and 520 Corangamite Lake Road, Cororooke, into three lots, extension and alteration to buildings and associated works, construction of car parking and fencing, use of the land as a food and drink premises (café) and for the sale and consumption of liquor (on-premises licence), temporary use of the land as a store (storage of tram), alteration of access to a Road in a Transport Zone 2, display of signs and reduction of bicycle parking requirements subject to conditions in Appendix D.**

# 1 Introduction

## 1.1 The Amendment

### (i) Amendment description

The purpose of the Colac Otway Planning Scheme Amendment C111cola (the Amendment) is to provide a single, consolidated site to accommodate an expansion of the Red Rock Regional Theatre and Gallery (RRRTAG). The Amendment proposes to do this by rezoning part of the land at 30 Factory Road, Cororooke from Farming Zone to Township Zone (Figure 1, blue shading).

The Amendment is accompanied by Planning Permit Application PP219/2020-1 applying to the existing RRRTAG site at 520 Corangamite Lake Road and 30 Factory Road. The application proposes:

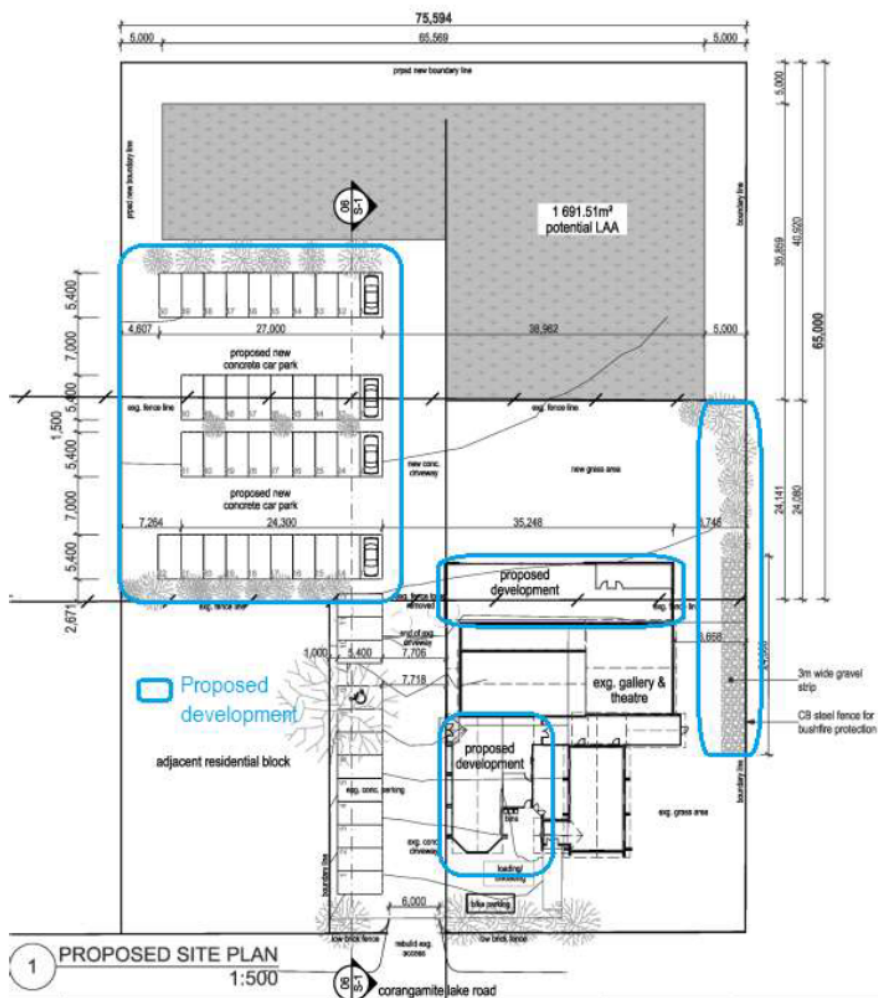
- to subdivide the land into three lots to create two lots in the Township Zone and a balance lot in the Farming Zone
- extend the existing building to accommodate a café/restaurant, with seating for up to 80 patrons across indoor and courtyard areas
- develop a shelter around a former W class tram which is proposed to be used as a 'green room' (Place of assembly). The shelter is to be connected to the other buildings via a walkway
- an on-premises liquor licence, in place of the temporary limited licences applied for previously. The licence would enable patrons to carry drinks into the gallery space and theatre and allow for liquor to be served for consumption on-premises at special events in the Red Line Plan licensed area
- a range of associated works including updating the existing signs, construction of drainage and wastewater systems, and the expansion of the car park from 18 to 50 spaces.

Figure 1: Amendment site





Figure 2: Proposed site plan



## (ii) The subject land and surrounds

Figure 3 shows the location of the subject land and surrounds.

The Amendment applies to part of the land at 30 Factory Road, Cororooke. This land has an area of 36.7 hectares and is currently included in two zones, the majority of which is in the Farming Zone with a smaller area of 5,446 square metres fronting Corangamite Lake Road in the Township Zone. The Amendment proposed to rezone an additional 4,904 square metres of this lot to Township Zone.

The existing RRRTAG site at 520 Corangamite Lake Road is located at the southern entry of the Cororooke township. It has an area of 2,026 square metres, with existing buildings comprising the former St David's Presbyterian Church and a later-constructed hall and amenities. The site is in the Township Zone. All of the site is included in Heritage Overlay HO166 and the Designated Bushfire Prone Area.

The RRRTAG site is adjoined to the north by a residential dwelling on a small lot (1,013 square metres), and rural land to the east, south and south-west. There are dwellings opposite the site within the Township Zone to the west, and a dwelling in the Farming Zone to the south at 500 Corangamite Road.

Further north of the site, on the northern side of Factory Road, is the former Fonterra milk factory. The factory ceased operation in 2013 and has not been used for any formal purpose since its closure.

**Figure 3 Subject land and surrounds**



## 1.2 Background

RRRTAG was founded in July 2011 by Andrew and Mary Beale in memory of their daughter Carolyn. It is operated by a volunteer Committee of Management and hosts a variety of cultural and performing arts events, including live theatre, films, and exhibitions.

Colac Otway Shire Council granted a Planning Permit for the use of the site as a 'Place of assembly' in 2011<sup>1</sup>. The officer report on the application notes *"the proposed use assists in meeting the community's need for entertainment and community facilities. It also assists in further consolidating the use of a significant heritage building whilst increasing its long term viability"*.<sup>2</sup>

There are three primary reasons for the Amendment. The first is the requirement to accommodate wastewater treatment facilities in the same lot as the gallery and proposed café. The existing wastewater treatment system is aged and must be upgraded to meet demand

<sup>1</sup> A 'Place of assembly' is defined at Clause at Clause 73.03 of the Planning Scheme as *"Land where people congregate for religious, spiritual or cultural activities, entertainment, or meetings"*.

<sup>2</sup> Document 20.

generated by the proposal. There is insufficient area to accommodate an upgraded system within the bounds of 520 Corangamite Lake Road.

The second reason for the Amendment is to accommodate car parking required by the proposed use and development. The existing use is supported by 18 concrete car parking spaces located on the northern boundary of the site and there is no available site area to accommodate additional spaces.

The third reason for the Amendment is to achieve the restoration and public use of the historic W Class Tram gifted to the RRRTAG in 2019 by the Victorian government through VicTrack's Reinventing Trams Program. The tram was originally stored on the former Fonterra site, but has since been relocated to the rear of 520 Corangamite Lake Road. Retrospective permission to store the tram is sought by permit application accompanying the Amendment.

### 1.3 Site inspections

The Panel visited the subject site, adjoining land and the broader Cororooke area on 10 June 2022 and observed:

- the subject site
- surrounding environs, including the location of the former Fonterra factory
- the proposed location for the building extension, tram lounge, landscaping and car parking
- the proximity and views to the sites from the dwelling located at 480 Corangamite Lake Road.

The Panel was accompanied by Council representatives and the Proponent for its inspection of the Amendment and permit sites. The Panel was accompanied by Council representatives and representatives of submitters 2 and 7 for its inspections at 480 Corangamite Lake Road.

### 1.4 Summary of issues raised in submissions

Seven submissions were received from exhibition, of which:

- two were agency submissions from the Environment Protection Authority (EPA) and Country Fire Authority (CFA)
- five were community submissions.

Council advised that it worked with all submitters to resolve concerns raised. Two community submissions were withdrawn following changes to the draft permit. These submissions were not referred to the Panel.

While the EPA and CFA submissions were referred to the Panel, both confirmed in writing prior to the Hearing that their concerns had also been resolved through changes to the draft permit.

The key issues for three unresolved submissions were:

- lack of policy support for the rezoning
- fragmentation of agricultural land and impact of the proposed use on existing farming activities
- opportunity site to accommodate a wider range of uses once rezoned
- alternative options to upgrade buildings and associated infrastructure
- amenity and community impact of the liquor licence.

## 1.5 Procedural issues

During the Hearing, Council acknowledged the Plan of Subdivision exhibited with the Amendment incorrectly labelled the area to be rezoned as 4,274 square metres. Council later confirmed the correct area was 4,904 square metres. This was a significant issue for Mr and Mrs Dunlop who concluded the error should be fatal to the Amendment and Planning Permit Application progressing.

In response Council advised:

- the boundary dimensions on the exhibited plan should take precedence over the incorrect areas
- final boundary dimensions will be subject to a survey prior to certification of a plan of subdivision
- there is flexibility in the draft conditions that can accommodate any variation between the future survey plans and the plans referred to in the permit conditions
- the exhibited Amendment map showing the area to be rezoned is correct.

The Panel acknowledges that inaccurate documentation is frustrating for all parties participating in the Hearing process. Having reviewed the error and submissions received, the Panel is satisfied it does not change the issues requiring consideration.

The Dunlop submissions also suggested there was insufficient community consultation on the proposal. Council advised it followed the statutory notice requirements set out in the PE Act and allowed additional time for submissions to account for the Christmas period.

Ultimately, it is not the role of a Panel to make legal rulings about the validity or otherwise of an amendment or procedure. A person who is substantially and materially affected by a technical defect can refer the matter to the Victorian Civil and Administrative Tribunal for resolution.

## 1.6 The Panel's approach

The Panel has assessed the Amendment against the principles of net community benefit and sustainable development, as set out in Clause 71.02-3 (Integrated decision making) of the Planning Scheme.

The Panel considered all written submissions made in response to the exhibition of the Amendment and planning permit, observations from site visits, and submissions and other material presented to it during the Hearing. It has reviewed a large volume of material and has had to be selective in referring to the more relevant or determinative material in the Report. All submissions and materials have been considered by the Panel in reaching its conclusions, regardless of whether they are specifically mentioned in the Report.

This Report deals with the issues under the following headings:

- Planning context
- Strategic justification
- Amenity impacts of use and development
- Planning permit.

## 1.7 Limitations

Submitter 3 raised issues about the governance of the RRRTAG organisation. This is not relevant to the Amendment and has not been considered by the Panel.

## 2 Planning context

### 2.1 Planning policy framework

Various clauses in the Planning Policy Framework and Municipal Planning Strategy are relevant to the Amendment, which the Panel has summarised below.

#### **Clause 11 (Settlement)**

Clause 11.01-1S (Settlement) promotes the sustainable growth and development of Victoria through a network of settlements and seeks to ensure settlements are planned in accordance with their relevant regional growth plan and settlement boundaries are created and reinforced.

Regional strategies relevant to the Amendment at Clause 11.01-1R (Settlement – Geelong G21) require a settlement boundary for all towns and to “*protect critical agricultural land by directing growth to towns*”.

Local strategies relevant to the Amendment at Clause 11.01-1L (Settlement – Colac Otway) include encouraging townships to have a definitive visual edge, delineating the boundary between urban development and the natural landscape beyond. This clause also encourages development of smaller townships that contributes to their economic development, acknowledges and responds to environmental constraints and protects the broader landscapes within which these towns are located.

The objective of Clause 11.02-1S (Supply of urban land) is to ensure a sufficient supply of land for residential, commercial, retail, industrial, recreational, institutional and other community uses. The objective of Clause 11.02-2S (Structure planning) is to facilitate to the orderly development of urban areas.

Clause 11.03-6S (Regional and local places) seeks to facilitate place-based planning by integrating relevant planning considerations to provide specific direction for the planning of sites, place, neighbourhoods and towns.

#### **Clause 12 (Environment and landscape values)**

The objective of Clause 13.05-1S (Noise abatement) is to assist the control of noise effects on sensitive land uses. Relevant strategies are to ensure community amenity is not adversely impacted by noise emissions, using a range of building design, urban design and land use separation techniques as appropriate to the land use functions and character of the area.

The objective of Clause 13.07-1S (Land use compatibility) is to protect community amenity while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.

#### **Clause 13 (Environmental risks and amenity)**

The objectives of Clause 13.02-1S (Bushfire planning) is strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life. This policy must be applied to all planning and decision making relating to land within the designated bushfire prone area or subject to a Bushfire Management Overlay.

**Clause 14 (Natural resource management)**

The objective of Clause 14.01 (Agriculture) is to protect the state's agricultural base by preserving productive farmland. For proposals to use, subdivide or development agricultural land it requires consideration of:

- desirability and impacts of removing the land from primary production, given its agricultural productivity.
- impacts on the continuation of primary production on adjacent land, with particular regard to land values and the viability of infrastructure for such production.
- compatibility between the proposed or likely development and the existing use of surrounding land.
- the potential impacts of land use and development on the spread of plant and animal pests from areas of known infestation into agricultural areas.
- land capability.

**Clause 15 (Built environment and heritage)**

The objective of Clause 15.01-2S (Building design) is to achieve building design outcomes that contribute positively to the local context and enhance the public realm.

Clause 15.03-1S (Heritage Conservation) supports the conservation of places of heritage significance. Relevant strategies at Clause 15.03-1L (Heritage conservation) are to encourage subdivision or consolidation that complements and supports the significance of heritage places and retain heritage places as significant components of the character and attractiveness of small towns.

**Clause 17 (Economic development)**

Clause 17.01-1L (Diversified economy) encourages the development of small-scale economic activity in small towns which complements the resources and industries of the region. Clause 17.01-1R (Diversified economy – Geelong G21) seeks to build on the region's competitive strengths, including tourism and agricultural land resources and economic, social and natural assets.

The objective of Clause 17.02-1S (Business) is to encourage development that meets the community's needs for retail, entertainment, office and other commercial services.

Clause 17.04-1S (Facilitating tourism) seeks to encourage tourism development to maximise the economic, social and cultural benefits of developing the state as a competitive domestic and international tourist destination. Relevant strategies at Clause 17.04-1L are to support tourism development and use that is at a scale that relates to the land size and surrounding uses.

**Clause 18 (Transport)**

The objective of Clause 18.02-4S (Roads) to facilitate an efficient and safe road network that integrates all movement networks and makes best use of existing infrastructure. Relevant strategies are to plan and adequate supply of car parking.

## 2.2 Other relevant planning strategies and policies

### (i) G21 Regional Growth Plan

The *G21 Regional Growth Plan, 2021* provides broad direction for land use and development across the G21 region. Appendix B notes development in Cororooke should be limited to existing settlement boundaries with some minor growth consistent with the *Colac Otway Rural Living Strategy, 2011*.

### (ii) Municipal Planning Strategy

The Municipal Planning Strategy vision at Clause 02.02 is:

- plan for growth in business and employment in towns and settlements.
- promote healthy, safe environments which enhance community life and wellbeing.
- manage infrastructure assets so they are sustainable for the long term.
- support long term sustainability.

The Strategic Framework Plan (Clause 02.04) (Figure 4) identifies Cororooke as a small town surrounded by farmland of strategic significance.

Figure 4: Colac Otway Shire Strategic Framework Plan





Clause 02.03-1 (Settlement) identifies Cororooke as one of a number of smaller towns with development opportunities that can improve their presentation, however effluent is recognised as a major problem. Council seeks to facilitate the development of small towns by:

Supporting tourism and rural lifestyle opportunities.

Protecting the local character of each town, particularly those located within the Otway Ranges.

Encouraging development to proceed in a manner that contributes to the economic development of these towns, responds to environmental constraints, and protects the broader landscape.

Strategies at Clause 02.03-6 (Economic development) promotes economic development and tourism by:

Encouraging employment focused use and development.

Supporting tourism that contributes to the economic growth of the Shire.

Managing tourism growth to protect the environmental and landscape assets that attract tourists and new residents.

Diversifying tourist attractions that result in all-year round activities.

### (iii) Colac Otway Rural Living Strategy

The *Colac Otway Rural Living Strategy, 2011* (Rural Living Strategy) investigated the suitability of the Shire's small towns and villages, including Cororooke, for further residential development. Cororooke is identified as having moderate growth potential. Some small-scale expansion of the Township Zone is recommended to provide for demand and to consolidate community infrastructure. Cororooke is noted as being well serviced to accommodate growth and small growth is not expected to take up a significant amount of agricultural land.

Figure 5: Cororooke proposed settlement boundary and investigation area



Source: Rural Living Strategy modified by PPV

A long term investigation area for growth is identified to the west of Cororooke away from potential industrial interface conflicts with the (former) Fonterra factory (Figure 5). A structure plan is recommended to examine the capacity for infill development, assess effluent management issues and to investigate potential locations for expansion of the Township Zone.

The Rural Living Strategy is a background document to the Planning Scheme, introduced via Amendment C69 in 2013. The Panel notes it has informed much of the policy content referenced in Chapter 2.2(ii).

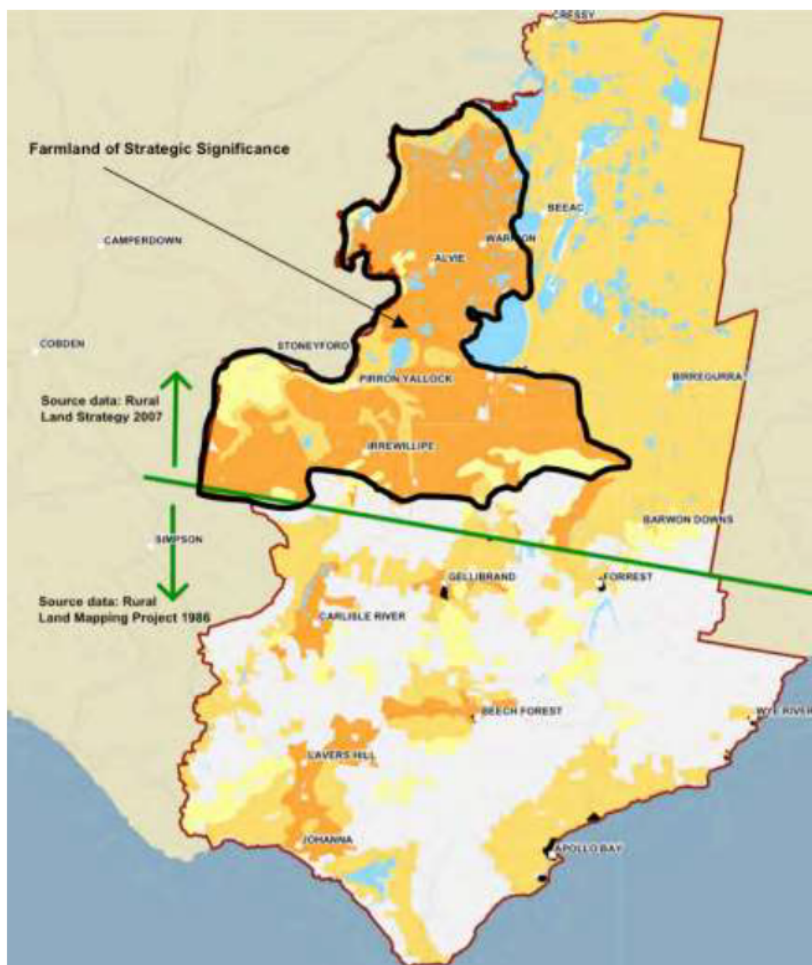
#### (iv) Colac Otway Rural Land Strategy

The *Colac Otway Rural Land Strategy, 2007* (Rural Land Strategy) identifies farmland of strategic significance based on areas of high quality agricultural land, the pattern of allotments and contribution to the local economy. The identified area includes the land surrounding Cororooke (refer Figure 6).

The Rural Land Strategy notes an increasing demand for rural lifestyle opportunities and low supply of Rural Living Zone land across the Colac Otway municipality, which has led to de facto rural living areas establishing in the Farming Zone.

The Rural Living strategy recommended Council prepare a Rural Living Strategy to investigate opportunities for rural residential development at Kawarren, Barongarook, Gellibrand, Forrest, Beech Forest, Lavers Hill and Elliminyt areas and other small towns across the Shire.

Figure 6: Farmland of Strategic Significance



The Rural Land Strategy is a background document to the Planning Scheme, introduced via Amendment C55 in 2009.

## 2.3 Planning scheme provisions

A common zone and overlay purpose is to implement the Municipal Planning Strategy and the Planning Policy Framework.

### (i) Zones

The Amendment land is currently in the Farming Zone. The relevant purposes of the Zone are:

- To provide for the use of land for agriculture.
- To encourage the retention of productive agricultural land.
- To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.
- To encourage the retention of employment and population to support rural communities.
- To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.

The Amendment land is proposed to be rezoned to Township Zone. The purposes of the Zone are:

- To provide for residential development and a range of commercial, industrial and other uses in small towns.
- To encourage development that respects the neighbourhood character of the area.
- To allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.

### (ii) Overlays

The land permit land is included in a site-specific Heritage Overlay (HO166) applying to the (former) St David's Church. The purpose of the Heritage Overlay is:

- To conserve and enhance heritage places of natural or cultural significance.
- To conserve and enhance those elements which contribute to the significance of heritage places.
- To ensure that development does not adversely affect the significance of heritage places.
- To conserve specified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.

### (iii) Particular and other provisions

Development of the site must have regard to the following particular and other provisions:

- Clause 52.06 Car parking
- Clause 52.27 Licensed premises
- Clause 52.29 Land adjacent to the Principal Road Network
- Clause 52.34 Bicycle facilities
- Clause 59.09 Signs.

### (iv) Ministerial Directions and Practice Notes

The Explanatory Report discusses how the Amendment meets the relevant requirements of Ministerial Direction 11 (Strategic Assessment of Amendments) and *Planning Practice Note 46: Strategic Assessment Guidelines*, August 2018 (PPN46). That discussion is not repeated here.

In addition, council identified and responded to the other relevant Ministerial Directions and Planning Practice Notes as follows:

- the Amendment is consistent with the *Ministerial Direction on the Form and Content of Planning Schemes* under Section 7(5) of the PE Act
- the Amendment addresses *Ministerial Direction No. 1 Potentially Contaminated Land, August 2021*. Council is satisfied the environment conditions of the land are suitable for the intended purpose
- the Amendment addresses *Ministerial Direction No. 19 Preparation and content of amendments that may significantly impact the environment, amenity and human health, October 2018* by having sought the views of the Environment Protection Authority (EPA) in relation to the use and development. The EPA has confirmed that the development represents a prescribed activity under the *Environment Protection Regulations 2021* (sewage treatment) and requested the inclusion of notes on the planning permit relating to regulatory approvals for the proposed wastewater system
- *Planning Practice Note 30 Potentially Contaminated Land, July 2021* was considered and informed assessment of the potential contamination of the site. The use of the land proposed by the application is not a sensitive use.

## 3 Strategic justification

### 3.1 The issue

The issue is whether the Amendment is strategically justified.

### 3.2 Submissions

Council submitted:

- Policies relating to agricultural land, if read in isolation, would discourage the proposed rezoning of land because it would result in a permanent loss of a small area of farmland.
- There is conflict in this instance between policies seeking to protect farmland from fragmentation and encroachments, and policies for employment and tourism.
- The Rural Land Strategy identifies the north-western quadrant of the shire (within which Cororooke is located) as farmland of strategic significance. This significance is a function of high agricultural capability (soil and rainfall) as well as larger lot sizes. Smaller lot sizes and existing sensitive uses within the adjoining township would prevent the subject land from being used for intensive scale agriculture.
- The Rural Living Strategy identifies Cororooke as having moderate growth potential given it is relatively less constrained than towns of equivalent size within the shire, and because it has a basic level of social infrastructure including town water, weekly waste collection, post office, recreation reserve, public hall and maternal child health centre. The Amendment aligns with the recommended outcomes of the Rural Living Strategy.
- The Amendment would not compromise or undermine any future structure planning envisaged in the Rural Living Strategy in any meaningful way. The strategy is proposed to be reviewed by Council within the next 2 years.
- The Amendment would achieve a planning purpose, being the provision of an appropriate wastewater treatment system and on site car parking.
- Rural Zones reforms from 2013 opened the list of discretionary uses in the Farming Zone to include 'Restaurant' and 'Place of assembly' meaning a permit could be sought under the existing zone configuration for the proposal.
- The obstacle to the development and use in this instance is the fact the subject land is in two zones and the zone provisions limit subdivision. A boundary realignment is needed to enable an upgrade of the onsite wastewater treatment system within a single lot, consistent with EPA requirements.

Council concluded when balancing the impact of lost agricultural land against the potential improvements of the rezoning, the Amendment would result in a net community benefit. It said:

... there is considered to be adequate policy guidance to support the rezoning as far as the rezoning is required to enable the proposed use, development and associated works to proceed. The rezoning would address a technical planning constraint – it would not itself fundamentally alter the character of the land or the development outcome sought and that which is considered otherwise appropriate. The rezoning of this relatively small piece of land, directly adjoining the township, would neither amount to a significant loss of agricultural land nor would it set a precedent given that there are specific reasons supporting the merits of the proposal.

Mr and Mrs Dunlop argued the Rural Living Strategy and Rural Land Strategy do not support the Amendment. They said the planning intent is to achieve population growth by consolidating

housing within township boundaries and any rezoning to expand boundaries should only occur in exceptional circumstances where a clear strategic justification has been established. They submitted:

What we have is a clear and direct set of policies, framework and guidelines that have come about through years of community engagement and adopted by the elected officials of the day, that state in black and white what can and cannot be rezoned.

...

Without doing a future growth plan for Cororooke how can Council state with certainty that this amendment won't impact the future growth of the town. It is at best an ad hoc approach to planning? The study must be done to allow natural justice and community input into the future growth of Cororooke.

The Planning Report prepared on behalf of RRRTAG noted the proposed café is intended to encourage tourism visitation and build on experiences offered by the theatre and gallery, consistent with tourism and economic development policies in the Planning Scheme.

### 3.3 Discussion

The Panel is not persuaded the Rural Living Strategy and Rural Land Strategy are so instructive in opposition to the Amendment that it should fail. The modest expansion of the Township Zone to achieve a specific outcome for a community facility aiming to broaden its appeal for tourism is, in the Panel's view, aligned with the outcome of the Rural Living Strategy to accommodate demand for, and consolidate community infrastructure. Importantly, it is consistent with the strategic directions of Clause 02.03-1 (Settlement) of the Municipal Planning Strategy which seek to facilitate development of small towns through tourism and economic development responsive to environmental conditions.

The Panel disagrees the proposal represents ad hoc planning, or the Amendment should be delayed while a structure plan is prepared and a town boundary is set for Cororooke. The Amendment site is logically connected to the Township Zone. Any future settlement boundary will need to tackle the environmental constraint presented by the depth of lots in the existing Township Zone, which has largely driven the Amendment.

Future expansion of Cororooke does not need to be limited to the investigation area identified in the Rural Living Strategy (Figure 5). This area was originally preferred because alternatives were constrained by buffers to the Fonterra factory. As the factory no longer operates and its existing use rights have lapsed, there is a new context for future use and development in the town.

The Amendment will result in the loss of a very small area of strategic agricultural land. The Rural Living Strategy acknowledges and accepts this will be a consequence of future development in Cororooke. The Panel has weighted this loss accordingly.

As with all planning matters, policy objectives must be balanced to determine what an appropriate outcome or decision is. In this case, the Panel finds the Amendment will result in a net community benefit by facilitating a modest expansion of a local enterprise that will continue to meet the community's need for entertainment and community facilities and broaden its appeal for tourism.

### 3.4 Conclusion and recommendation

The Panel concludes:

- The Amendment is supported by, and implements, the Planning Policy Framework and is strategically justified.

The Panel recommends:

- 1. Amendment C111cola to the Colac Otway Planning Scheme be adopted as exhibited.**

## 4 Amenity impacts of use and development

### 4.1 The issues

The issues are whether the:

- noise and light from the use would impact livestock and residential amenity
- privacy of residents in the adjoining dwelling would be reduced
- liquor licence arrangements are appropriate.

### 4.2 Evidence and submissions

Council submitted:

- Hours of operation of the existing theatre and gallery are not limited by permit conditions. The operating hours for the café would be formalised through permit conditions allowing the use until 10pm on Sunday to Thursday and 11pm on Friday and Saturday.
- Permit conditions would also restrict external lighting and sound amplification to avoid adverse impacts on adjoining properties. These conditions provide an appropriate level of protection to adjoining residents and livestock grazing on the land. They also enable Council to undertake enforcement action against the landowner for any nuisance caused to surrounding occupiers.
- Licensing as proposed is considered appropriate. The use is not a late night venue and no concerns have been raised by the Victoria Police following referral of the proposal. (The proposed licensed area is shown in Figure 7).
- Additional landscaping has been negotiated with the adjoining owners. The open Land Application Areas for wastewater treatment would need to be protected from access by persons, livestock or vehicles and therefore would function as a buffer to the adjoining land. These, combined with limits on use of outdoor spaces, will prevent privacy impacts.

Submissions from Mr and Mrs Dunlop noted:

- There is an intention to intensify agricultural pursuits on the Dunlop land. The proposal is directly adjacent to a dry sheltered area suitable for animals at night when calving.
- The proposal will mean parts of the Dunlop adjacent to the rezoned area cannot be used for agriculture as the noise, lighting and human activity could cause the stress to stock. This will impact on the right to farm and the protection of significant farmland.
- There is an intent to use the rezoned area for outdoor entertainment. Permit conditions limiting outdoor theatre events do not exclude, for example, a band playing at a wedding.
- The seven-day operation is a complete change from the current theatre activity.

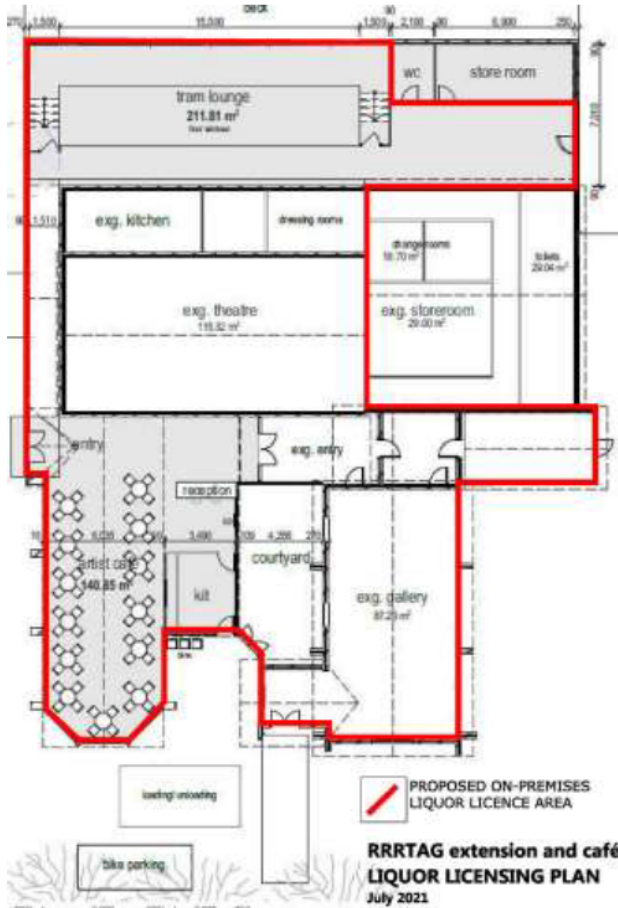
In response to concerns raised about the visibility of the permit site from the Dunlop land, RRRTAG submitted:

I note that currently and historically there is no natural screen between the Dunlop's and the back of the theatre building which has been in place since 1960. The view line to the theatre will be the same view line after the proposed building program except a natural screen will be planted to allow the Dunlop's extra privacy they don't currently have nor historically had. I also note that the Dunlop's house is some 300 metres from the theatre while our proposed project would bring the building 6 metres closer. I fail to see that this minor change would have any impact on the Dunlop's privacy, in fact, the planting of a screen as part of the project would somewhat improve their current situation.



RRRTAG also confirmed all past events at the theatre and gallery have been held indoors. It submitted it *"has no plans to hold outdoor entertainment"*.

Figure 7: Proposed licensed area



In response to questions from the Panel during the Hearing, both Council and the Dunlop's confirmed there was no history of complaints about the existing theatre and gallery operations.

While strongly opposing the Amendment and permit, the Dunlop submissions put forward suggested conditions in the event the proposal was supported. These included at a minimum:

- deletion of the outdoor deck
- restriction on all outdoor entertainment
- a 173 agreement restricting future permits being granted for human activity, new buildings or subdivision on the rezoned land
- restriction on all outdoor consumption of alcohol
- revised hours of operation to 8.00pm Sunday to Thursday and 10.00pm on Friday and Saturday.

### 4.3 Discussion

The Panel's site inspections confirmed that the Dunlop dwelling has broad views towards, but is well separated from the Amendment and RRRTAG sites. The Panel also observes the functional activity areas of the proposal (café and green room) are located well away from the Dunlop residence.

The permit conditions proposed by Council respond to the issues raised by the Dunlops by limiting activity on the proposed deck, imposing time restrictions on hours of operation, restricting lighting and sound amplification and requiring landscape screening. The Panel is satisfied these conditions, combined with the considerable separation between the RRRTAG and Dunlop dwelling, will manage potential amenity impacts and minimise disturbance to livestock. The Panel considers that the restriction on theatre events should extend to the grassed area adjoining the proposed deck. This is consistent with undertakings given by RRRTAG that outdoor entertainment is not proposed.

Any future intensification of activity on the expanded Township Zone will be subject to a new planning permit application and considered on its merits. The Panel disagrees with the Dunlop submissions that a section 173 agreement is needed to curtail future opportunity.

The proposed licensed area, which includes the café, courtyard, gallery, theatre, and green room, is appropriate. This will be reflected on the endorsed plans of any permit granted for the proposal. Draft permit conditions require the owner/operator ensure the alcohol is consumed in the licensed area only and patron behaviour is acceptable. Additional permit conditions are not required.

Over 300 metres separates the Dunlop residence and the eastern elevation of the tram car building and this, with landscape screening required by permit conditions, is sufficient to secure the visual amenity of the Dunlop dwelling. If visual privacy continues to be a concern, the Dunlops have the option of adding to landscaping required by the permit through planting on their own property.

## 4.4 Conclusions

The Panel concludes:

- Permit conditions will manage the potential amenity impacts of the proposal on adjoining land.
- A permit condition should restrict use of the grassed area adjoining the deck for outdoor theatre events.
- The proposed licensed area and hours of operation for sales and consumption of liquor are appropriate.

## 5 Planning permit

### (i) Relevant considerations

Clause 71.02-3 of the Planning Scheme requires a responsible authority considering a permit application to take an integrated approach, and to balance competing objectives in favour of net community benefit and sustainable development.

Clause 65 of the Planning Scheme states:

Because a permit can be granted does not imply that a permit should or will be granted. The Responsible Authority must decide whether the proposal will produce acceptable outcomes in terms of the decision guidelines of this clause.

Clause 65.01 requires the Responsible Authority to consider, as appropriate:

The Municipal Planning Strategy and the Planning Policy Framework.

The purpose of the zone, overlay or other provision.

Any matter required to be considered in the zone, overlay or other provision.

The orderly planning of the area.

The effect on the environment, human health and amenity of the area.

Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.

The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.

The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.

The relevant decision guidelines of the Township Zone are:

The protection and enhancement of the character of the town and surrounding area including the retention of vegetation.

In the absence of reticulated sewerage, a Land Capability Assessment on the risks to human health and the environment of an on site wastewater management system constructed, installed or altered on the lot in accordance with the requirements of the Environment Protection Regulations under the *Environment Protection Act 2017*.

The design, height, setback and appearance of the proposed buildings and works including provision for solar access.

Provision of car and bicycle parking and loading bay facilities and landscaping.

The effect that existing uses on adjoining or nearby land may have on the proposed use.

The scale and intensity of the use and development.

The safety, efficiency and amenity effects of traffic to be generated by the proposal.

The pattern of subdivision and its effect on the spacing of buildings.

For subdivision of land for residential development, the objectives and standards of Clause 56.

Other matters to be taken into account include:

- objections
- comments and decisions of referral authorities
- other matters a Responsible Authority must and may take into account under section 60 of the PE Act, including the Victorian planning objectives and the economic, social and environmental impacts of the proposed use and development
- adopted government policy.

**(ii) What is proposed****Application plans**

Prior to and through the Hearing, the Panel sought clarification on various details in the plans, including the current version of plans, dimensions of the proposed deck and details of proposed landscaping. Council confirmed:

- the current Application plans are those attached to the Council Minutes of 23 March 2022
- the deck proposed on the eastern side of the tram lounge has a proposed width of 3.5 metres
- landscaping is proposed on the east and south boundaries of the site to the nearby dwellings.

**Permit trigger for subdivision**

Council's Part A and Part B submissions did not definitively identify the permit trigger for subdivision of the land. The Panel requested this be clarified. In response, Council advised:

- the subdivision does not achieve the minimum lot size for land in the Farming Zone
- the application relies on Clause 64.03 (Subdivision of land in more than one zone).

Clause 64.03 provides *"if a provision of this scheme provides that a permit is required to subdivide land and the land is in more than one zone a permit may be granted even if one does not comply with the minimum lot size requirements of a zone"*. The permit requirements of Clause 64.03 are:

A permit may be granted to create one lot smaller than specified in the scheme if all of the following are met:

- The lot to be subdivided is in more than one zone and cannot comply with the minimum lot area specified in the scheme.
- The proposed subdivision does not create lots where any lot extends into more than one zone. This does not apply to any lots created for the following purposes:
  - To comply with the requirements of the Urban Floodway Zone.
  - To provide access to a road.
- The remainder of the proposed lots must comply with the minimum lot area specified in the scheme.

Council explained Clause 64.03 could be relied upon because:

- the lot to be subdivided would be in more than one zone (Farming Zone and Township Zone) and the lot in the Farming Zone cannot comply with the minimum lot area specified in the scheme
- the proposed subdivision would not create lots where any lot extends into more than one zone
- there is no minimum lot size in the Township Zone.

**Conditions**

Council advised conditions of the draft exhibited permit were amended following a consultation meeting with objectors. These changes:

- included an additional landscaping condition
- amended the CFA condition relating to defensible space between the tram lounge and the southern boundary
- deleted the CFA conditions relating to amended plans

- included amended plan conditions requiring an extension of the fence along the southern boundary
- included a condition preventing use of the eastern deck adjoining the tram lounge for external theatre events
- included a condition requiring the applicant to enter into an agreement under section 173 of the Act relating to the implementation and maintenance of bushfire protection measures.

A copy of draft permit detailing the amended condition supported by Council was attached to its Part A submission.

### (iii) Discussion

Council's Part A submission provided a helpful summary of the permit triggers (except as noted above), application requirements and referral requirements for the proposal under the Planning Scheme. It also provided a summary of referral authority comments and responses, and a chronology of the Permit Application. The Panel has been assisted by these in its deliberations.

The Panel agrees the application for subdivision can be made under Clause 64.03.

The issues and impacts required to be considered by the decision guidelines have been partially discussed in Chapter 4 of this Report. On those matters, the Panel is satisfied the potential amenity impacts will be acceptably managed by:

- limiting activity on the proposed deck and adjoining grassed area
- imposing time restrictions on hours of operation
- restricting lighting and sound amplification
- landscape screening
- limiting the area where, and hours when, alcohol may be consumed.

In response to the other key matters requiring consideration, the Panel finds:

- the scale of the development is proportionate to existing buildings and is supported by Council's Heritage Adviser
- increased on site car parking will provide convenient and safe options for patrons and reduce overflow onto Corangamite Lake Road
- the minor waiver of bicycle parking sought is appropriate
- access arrangements are appropriate and supported by the Department of Transport
- bushfire risk has been satisfactory addressed in the Bushfire Management Plan and is supported by the CFA, subject to conditions.

The Panel is satisfied that conditions proposed by Council as included in its Part B submissions are fit for purpose and meet drafting requirements, except as noted below:

- the permit preamble requires updating to replace reference to Road Zone Category 1 with Transport Zone 2
- the multiple permit conditions for construction management should be consolidated
- conditions requiring changes to the current plans should be consolidated under Condition 1.

On balance, the Panel considers a permit should be granted with conditions. The proposed is consistent with the requirements of the Planning Scheme and will result sustainable development delivering a net community benefit.

**(iv) Conclusion and recommendation**

The Panel concludes:

- It is appropriate to grant a planning permit for the proposed use and development.
- Conditions proposed by Council are appropriate, except as noted in Appendix D.

The Panel recommends:

- 2. Planning permit PP219/2020-1 be granted to allow the subdivision of the land at 30 Factory Road and 520 Corangamite Lake Road, Cororooke, into three lots, extension and alteration to buildings and associated works, construction of car parking and fencing, use of the land as a food and drink premises (café) and for the sale and consumption of liquor (on-premises licence), temporary use of the land as a store (storage of tram), alteration of access to a Road in a Transport Zone 2, display of signs and reduction of bicycle parking requirements subject to conditions in Appendix D.**

## Appendix A Submitters to the Amendment

No.	Submitter
1	Environment Protection Authority
2	Paul Dunlop
3	Confidential
4	Country Fire Authority
5	Helen Gathercole
6	Keith Gathercole
7	Dianne Dunlop

---

## Appendix B Parties to the Panel Hearing

Submitter	Represented by
Colac Otway Shire Council	Erin Sonego, Senior Strategic Planner (Directions Hearing only), Simon Clarke, Coordinator, Strategic Planning and Major Projects and Ravi Ayyagari, Statutory Planner
Red Rock Regional Theatre and Gallery	Andrew Beale
Paul and Dianne Dunlop	Jason Schram

---



## Appendix C Document list

No.	Date	Description	Provided by
1	4/5/2022	Panel Directions and Hearing Timetable	Planning Panels Victoria (PPV)
2	16/5/2022	Colac Otway Shire Council Meeting Agenda 23 March 2022	Colac Otway Shire Council (Council)
3	"	Colac Otway Shire Council Meeting 23 March 2022 signed minutes	"
4	"	Colac Otway Shire Council Meeting Agenda 27 October 2021	"
5	"	Colac Otway Shire Council Meeting 27 October 2021 signed minutes	"
6	"	Environment Protection Authority letter of confirmation 11 May 2022	"
7	"	Amendment exhibition documents <ul style="list-style-type: none"> <li>• Instruction sheet</li> <li>• Explanatory Report</li> <li>• Zone map</li> </ul>	"
8	"	Bushfire further information BAL method 2	"
9	"	Bushfire report addendum	"
10	"	Draft Planning Permit conditions CFA	"
11	"	Draft Planning Permit	"
12	"	Existing and proposed signage	"
13	"	Fire Fence Detail	"
14	"	Liquor Licence Red Line Plan	"
15	"	Planning Submission	"
16	"	Proposed Plan of Subdivision with Aerial	"
17	"	Revised Proposal Plans	"
18	"	Titles	"
19	"	Planning Permit and Endorsed Plan PP184/2011-1 520 Corangamite Lake Road, Cororooke	"
20	"	Planning Committee Report PP184/2011-1 520 Corangamite Lake Road, Cororooke	"
21	"	Occupancy Permit BSU 23052/20110359 521 Corangamite Lake Road, Cororooke	"
22	27/5/2022	Site inspection itinerary	"
23	6/6/2022	CFA email 19 May 2022	"

No.	Date	Description	Provided by
24	“	Land Capability Assessment for 520 Corangamite Lake Road, Cororooke, 27 March 2021	“
25	7/6/2022	Council Part A submission	“
26	8/6/2022	Timetable Version 2	PPV
27	“	Panel Further Directions	“
28	9/6/2022	Colac Otway Rural Living Strategy 2011	Council
29	“	Heritage Adviser advice May 2021	“
30	“	Heritage Adviser advice March 2022	“
31	“	Letters of support	Red Rock Regional Theatre and Gallery (RRRTAG)
32	10/6/2022	Council Part B submission	Council
33	15/6/2022	Submissions of AE and ME Beale (proponent)	RRRTAG
34	“	Further submissions of AE Beale	“
35	15/6/2022	Panel further Directions	PPV
36	16/6/2022	Council response to Panel request for further information	Council
37	19/6/2022	Submissions of P and D Dunlop – response to Part A	P & D Dunlop
38	“	Submissions of P and D Dunlop – response to Part B	“
39	“	Submissions of P and D Dunlop – response to further information	“
40	“	Submissions of P and D Dunlop – hearing arguments	“
41	“	Copy of email - Response to Questions on existing wastewater Treatment System	“
42	“	Colac Otway Shire Council Meeting Agenda 12 October 2011	“
43	20/6/2022	Submissions of P and D Dunlop – further response to further information	“
44	30/6/2022	Concluding submissions	Council
45	6/7/2022	Corrected concluding submissions	“

## Appendix D Panel recommended changes to conditions

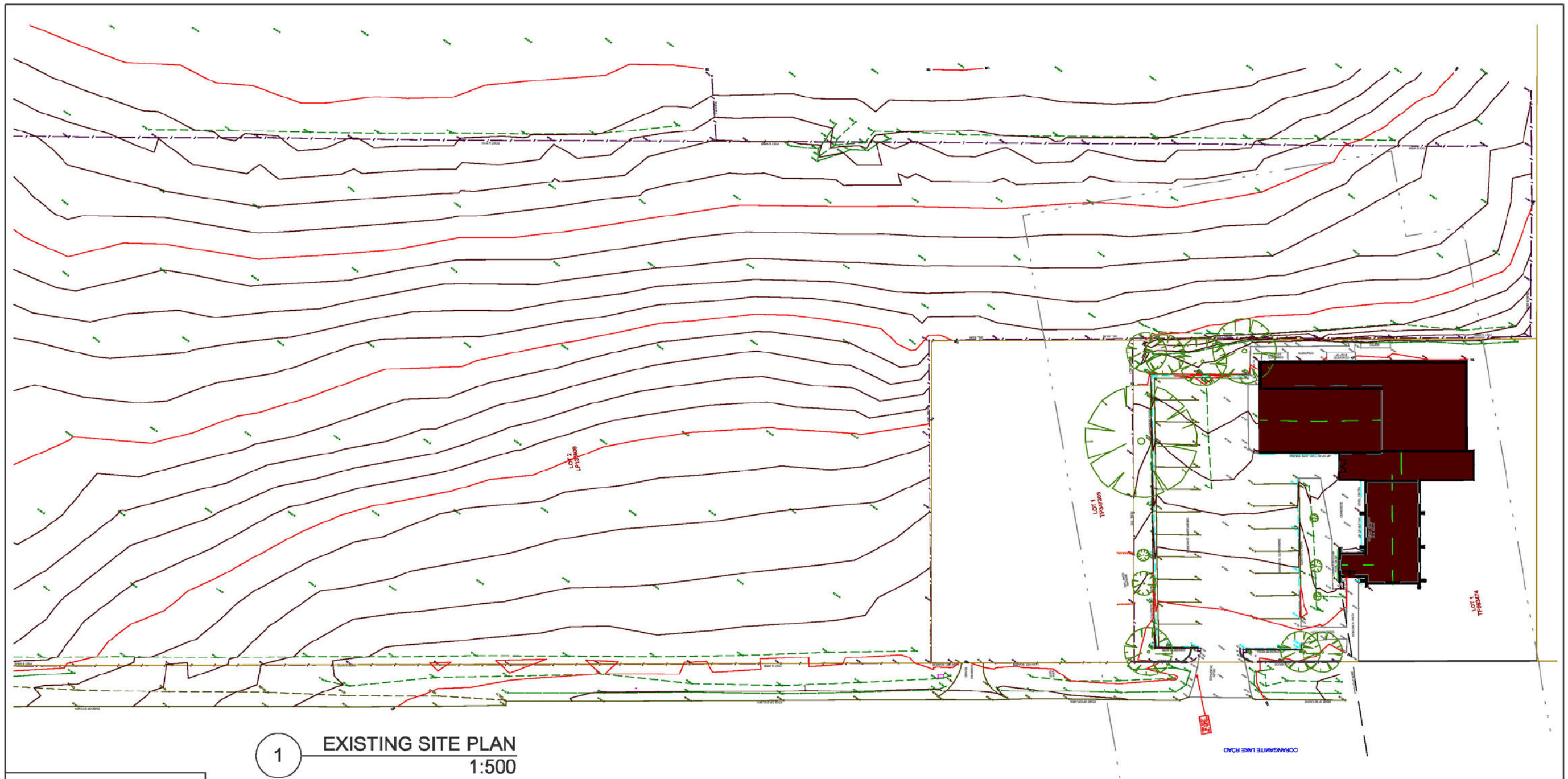
Note: No changes recommended to conditions not listed.

Table 1: Panel recommended changes to conditions

#	Condition	Panel comments and recommendation
-	The Permit allows: Re-subdivision of the Land into Three Lots, Extensions and Alterations to Building and Associated Works, Construction of Car Park and Erection of Fence, Use of the Land as a Food and Drink Premises (Café) and for the Sale and Consumption of Liquor (On-Premises Licence), Temporary Use of the Land as a Store (Storage of Tram), Alteration of Access to a Road in a Road Zone Category 1, Display of Signage and Reduction of Bicycle Parking Requirements in accordance with the endorsed plans.	Replace: - 'Re-subdivision' with 'Subdivision' 'Road Zone Category 1' with 'Transport Zone 2'
1	Prior to the commencement of development, amended plans to the satisfaction of the Responsible Authority must be submitted to and approved by the Responsible Authority. When approved the plans will be endorsed and will then form part of the permit. The plans, which must be drawn to scale with dimensions, must be generally in accordance with the plans submitted with the application but modified to show:  a) the proposed solid non-combustible fence located along the southern boundary running the distance from the front elevation of the existing former church and gallery/theatre to the rear elevation of the tram lounge building.  b) the location, dimensions of the deck and any associated structures (such as balustrading and steps) to the east of the tram lounge, including a section showing the height of the deck above natural ground level.	Replace: 'plans submitted with the application' with specific references to current plans (where the current plans are those appended to the Council Minutes of 23 March 2022).  Revise b) with: 'the location, dimensions, height and materials of the deck to the east of the tram lounge, including details of balustrading and steps, where the width of the deck does not exceed 3.5 metres.'
12	The deck to the east of the tram lounge must not be used for any outdoor theatre events.	Revise as:  The deck and grassed area to the east of the tram lounge must not be used for any outdoor theatre events.

#	Condition	Panel comments and recommendation
19	<p>Prior to the commencement of development, unless otherwise approved in writing by the Responsible Authority, a Construction Management Plan must be submitted to and approved by the Responsible Authority. The plan must detail how the site will be managed prior to and during the construction period, and must set out requirements for managing:</p> <ul style="list-style-type: none"> <li>- Erosion and sediment.</li> <li>- The deposit of any sediment or other material by vehicles on the abutting roads.</li> <li>- Dust.</li> <li>- Runoff.</li> <li>- Litter, concrete and other construction wastes.</li> <li>- Chemical contamination.</li> <li>- Vegetation and natural features planned for retention.</li> </ul> <p>The plan must include a detailed photographic record of the road reserve/s in the vicinity of the site, which shows the condition of the existing public infrastructure.</p>	Consolidate with Condition 41.
20	<p>All construction works must be undertaken in accordance with the approved Construction Management Plan. The developer must ensure that all contractors are aware of the requirements of the approved Construction Management Plan and understand how to implement them. No polluted and/or sediment laden runoff is to be discharged directly or indirectly into Colac Otway Shire drains and/or watercourses at any time during construction or operation to the satisfaction of the Responsible Authority.</p>	
25	<p>Unless otherwise approved in writing by the Responsible Authority, the timber cladding on the proposed café and lounge extensions must be a mid-brown tone rather than a dark-brown tone.</p>	Delete. Insert 'The timber cladding on the proposed café and lounge extension in a dark brown tone' under Condition 1.

#	Condition	Panel comments and recommendation
39	<p>Prior to the issue of a statement of compliance under the Subdivision Act 1988, a Construction Management Plan must be submitted to and approved by the Responsible Authority. The plan must detail how the site will be managed prior to and during the construction period, and must set out requirements for managing:</p> <ul style="list-style-type: none"> <li>- Erosion and sediment.</li> <li>- The deposit of any sediment or other material by vehicles on the abutting roads.</li> <li>- Dust.</li> <li>- Runoff.</li> <li>- Litter, concrete and other construction wastes.</li> <li>- Chemical contamination.</li> <li>- Vegetation and natural features planned for retention.</li> </ul> <p>The plan must include a detailed photographic record of the road reserve/s in the vicinity of the site, which shows the condition of the existing public infrastructure.</p>	Consolidate with conditions 21 and 22.



1 EXISTING SITE PLAN  
1:500

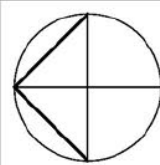


**Geoff De La Rue**  
**h arch, rala, hdav**

26 murray street colac  
po box 92 colac 3250  
phone 03 5231 4787  
mobile  
info@gdarchitecture.com.au  
www.gdarchitecture.com.au

REVISIONS:		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

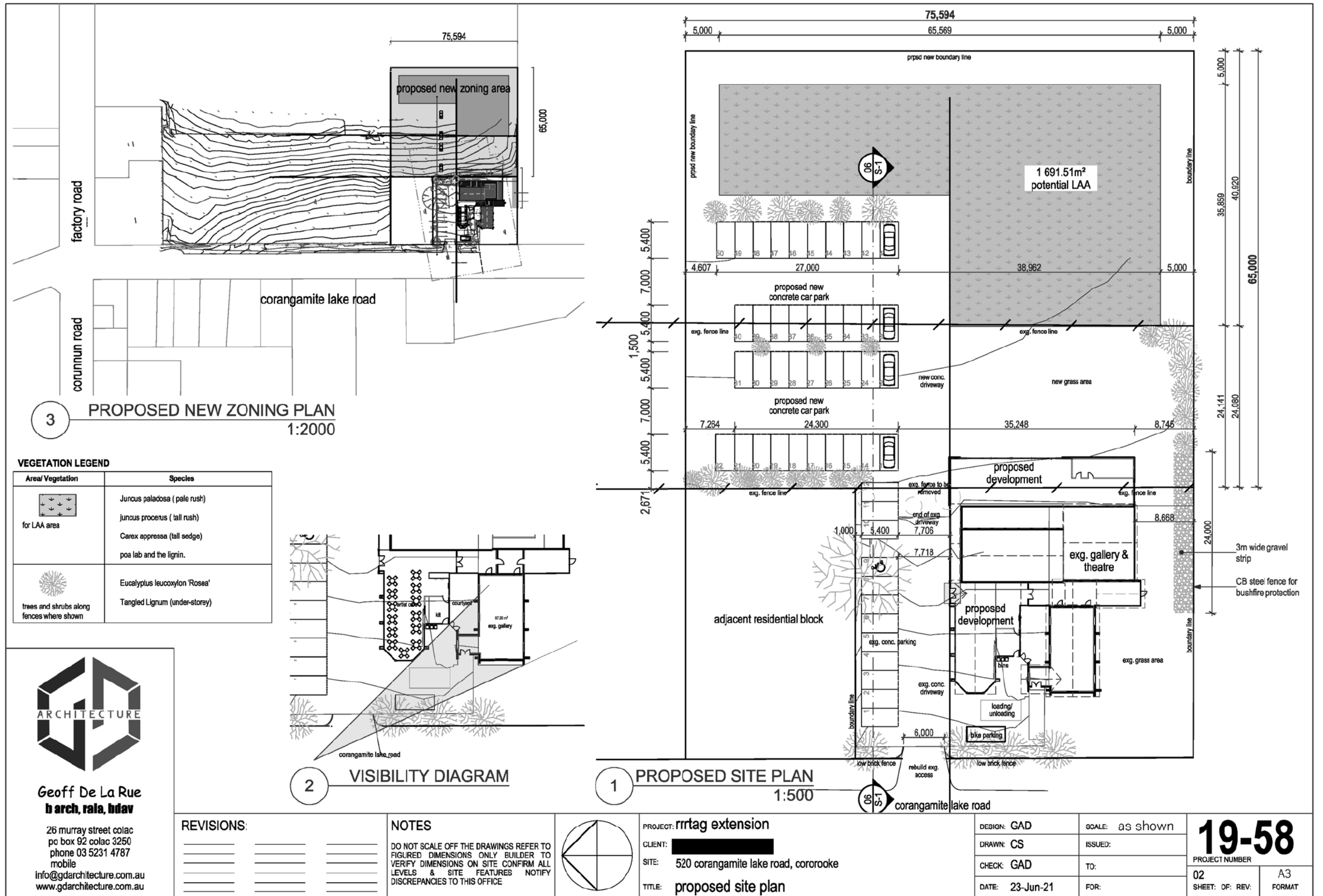
**NOTES**  
DO NOT SCALE OFF THE DRAWINGS REFER TO FIGURED DIMENSIONS ONLY BUILDER TO VERIFY DIMENSIONS ON SITE CONFIRM ALL LEVELS & SITE FEATURES NOTIFY DISCREPANCIES TO THIS OFFICE



PROJECT: rrrtag extension  
CLIENT: [REDACTED]  
SITE: 520 corangamite lake road, cororooke  
TITLE: existing site plan

DESIGN: GAD	SCALE: as shown
DRAWN: CS	ISSUED:
CHECK: GAD	TO:
DATE: 16-Jun-21	FOR:

**19-58**  
PROJECT NUMBER  
01 SHEET: OF: REV: A3 FORMAT



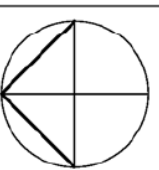
**Geoff De La Rue**  
b arch, rala, hdav

26 murray street colac  
po box 92 colac 3250  
phone 03 5231 4787  
mobile  
info@gdarchitecture.com.au  
www.gdarchitecture.com.au

**REVISIONS:**


**NOTES**

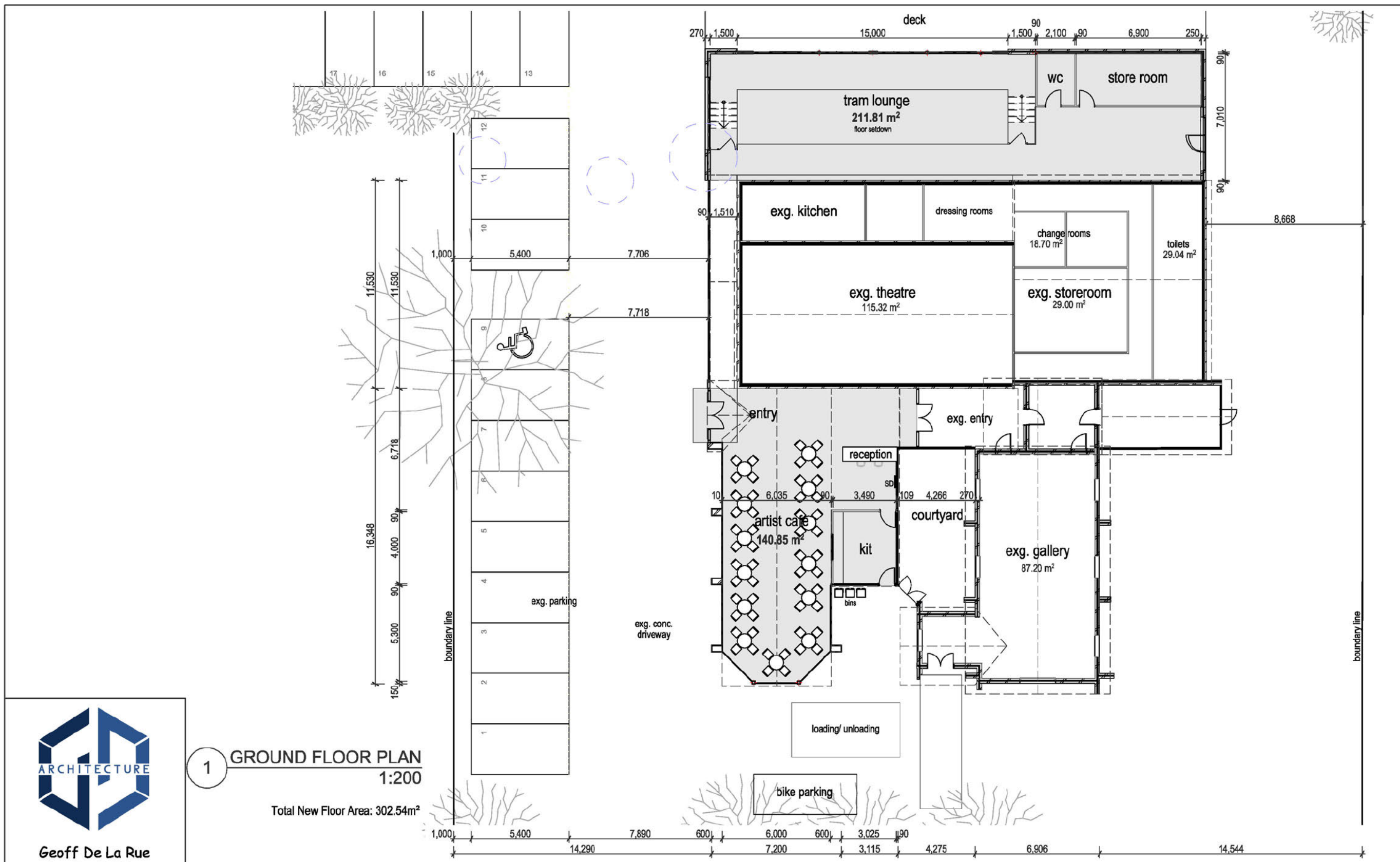
DO NOT SCALE OFF THE DRAWINGS REFER TO FIGURED DIMENSIONS ONLY BUILDER TO VERIFY DIMENSIONS ON SITE CONFIRM ALL LEVELS & SITE FEATURES NOTIFY DISCREPANCIES TO THIS OFFICE



**PROJECT:** rrtag extension  
**CLIENT:** [REDACTED]  
**SITE:** 520 corangamite lake road, cororooke  
**TITLE:** proposed site plan

<b>DESIGN:</b> GAD	<b>SCALE:</b> as shown
<b>DRAWN:</b> CS	<b>ISSUED:</b>
<b>CHECK:</b> GAD	<b>TO:</b>
<b>DATE:</b> 23-Jun-21	<b>FOR:</b>

**19-58**  
PROJECT NUMBER  
02  
SHEET: OF: REV: A3  
FORMAT



**1 GROUND FLOOR PLAN**  
1:200

Total New Floor Area: 302.54m<sup>2</sup>

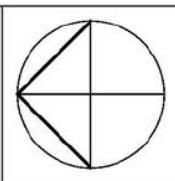


**Geoff De La Rue**  
**h arch, rala, hdav**

26 murray street colac  
po box 92 colac 3250  
phone 03 5231 4787  
mobile  
info@gdarchitecture.com.au  
www.gdarchitecture.com.au

**REVISIONS:**


**NOTES**  
DO NOT SCALE OFF THE DRAWINGS REFER TO FIGURED DIMENSIONS ONLY BUILDER TO VERIFY DIMENSIONS ON SITE CONFIRM ALL LEVELS & SITE FEATURES NOTIFY DISCREPANCIES TO THIS OFFICE

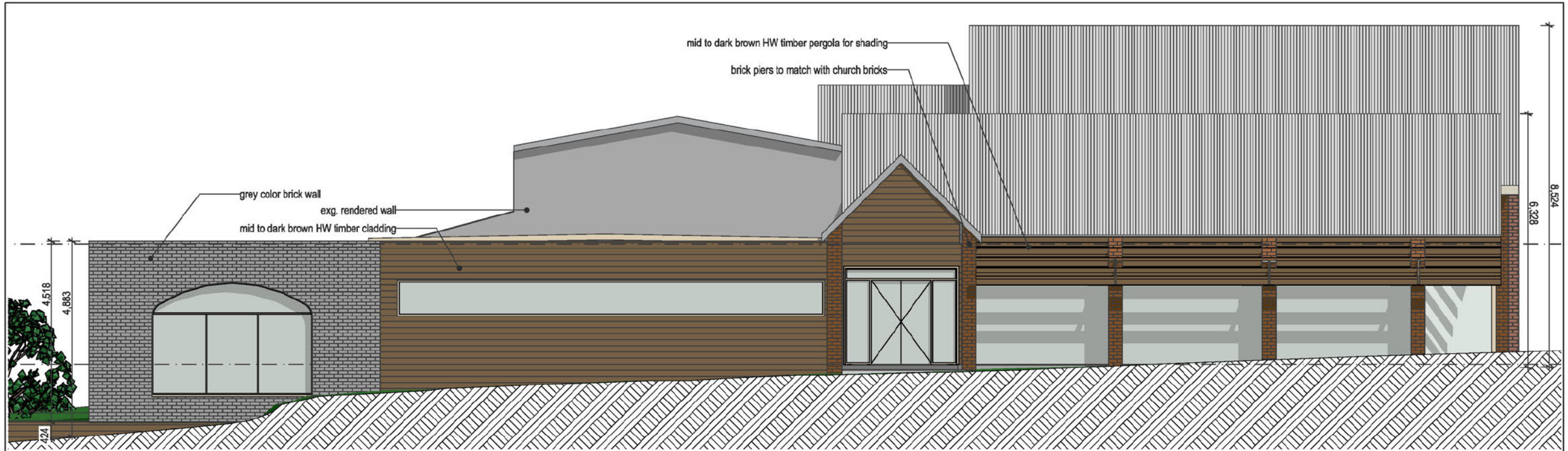


**PROJECT:** rrtag extension  
**CLIENT:** ██████████  
**SITE:** 520 corangamite lake road, cororooke  
**TITLE:** floor plan

<b>DESIGN:</b> GAD	<b>SCALE:</b> as shown
<b>DRAWN:</b> CS	<b>ISSUED:</b>
<b>CHECK:</b> GAD	<b>TO:</b>
<b>DATE:</b> 06-Jul-21	<b>FOR:</b>

**19-58**  
PROJECT NUMBER  
03 SHEET: OF: REV: A3 FORMAT





**E-1** NORTH ELEVATION  
1:100



**E-2** EAST ELEVATION  
1:100



**Geoff De La Rue**  
**Architecture**

26 murray street colac  
po box 92 colac 3250  
phone 03 5231 4787  
mobile  
info@gdarchitecture.com.au  
www.gdarchitecture.com.au

REVISIONS:	

**NOTES**  
DO NOT SCALE OFF THE DRAWINGS REFER TO FIGURED DIMENSIONS ONLY BUILDER TO VERIFY DIMENSIONS ON SITE CONFIRM ALL LEVELS & SITE FEATURES NOTIFY DISCREPANCIES TO THIS OFFICE

PROJECT: rrtag extension  
CLIENT: [REDACTED]  
SITE: 520 corangamite lake road, cororooke  
TITLE: elevation 1

DESIGN: GAD	SCALE: as shown
DRAWN: CS	ISSUED:
CHECK: GAD	TO:
DATE: 06-Jul-21	FOR:

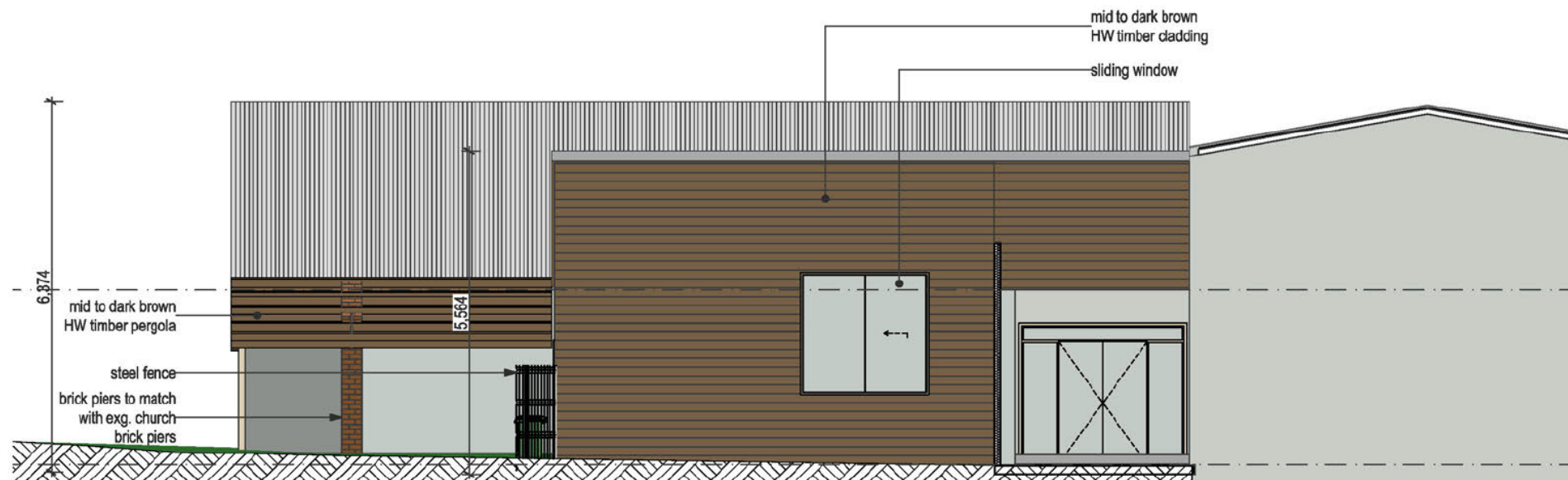
**19-58**  
PROJECT NUMBER  
04  
SHEET: OF: REV: A3  
FORMAT



E-3 WEST ELEVATION  
1:100

proposed artist cafe

exg. church



E-4 CAFE SOUTH ELEVATION  
1:100

proposed artist cafe

exg. theatre



**Geoff De La Rue**  
**h arch, rala, hdav**

26 murray street colac  
po box 92 colac 3250  
phone 03 5231 4787  
mobile  
info@gdarchitecture.com.au  
www.gdarchitecture.com.au

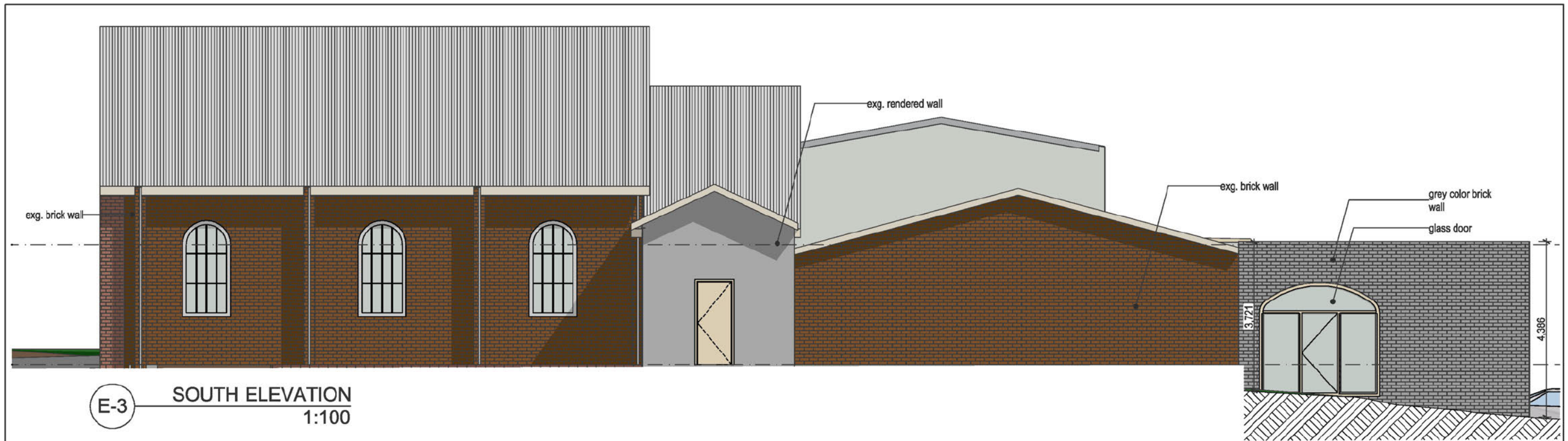
REVISIONS:


NOTES  
DO NOT SCALE OFF THE DRAWINGS REFER TO FIGURED DIMENSIONS ONLY BUILDER TO VERIFY DIMENSIONS ON SITE CONFIRM ALL LEVELS & SITE FEATURES NOTIFY DISCREPANCIES TO THIS OFFICE

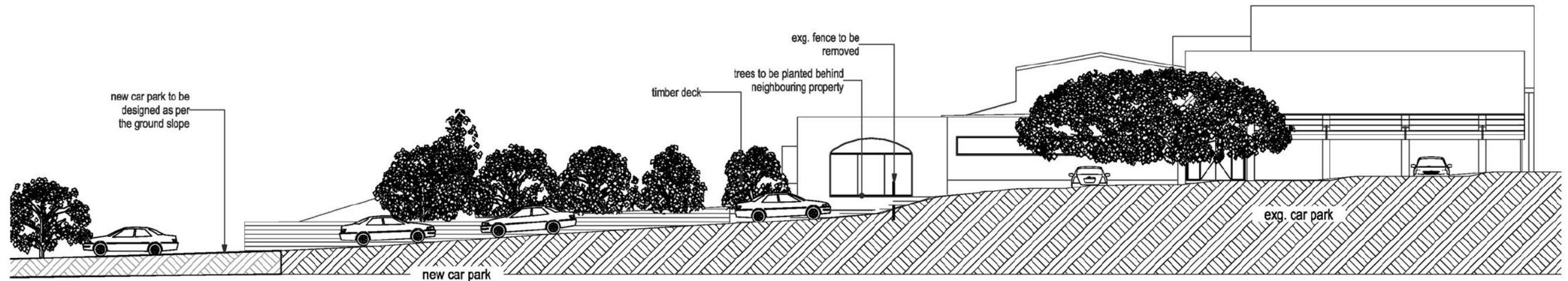
PROJECT: rrtag extension  
CLIENT: [REDACTED]  
SITE: 520 corangamite lake road, cororooke  
TITLE: elevation 2

DESIGN: GAD	SCALE: as shown
DRAWN: CS	ISSUED:
CHECK: GAD	TO:
DATE: 06-Jul-21	FOR:

<b>19-58</b>	
PROJECT NUMBER	
05	A3
SHEET: OF: REV:	FORMAT



**E-3** SOUTH ELEVATION  
1:100



**S-1** SITE SECTION  
1:200



**Geoff De La Rue**  
b arch, rala, hdav

26 murray street colac  
po box 92 colac 3250  
phone 03 5231 4787  
mobile  
info@gdarchitecture.com.au  
www.gdarchitecture.com.au

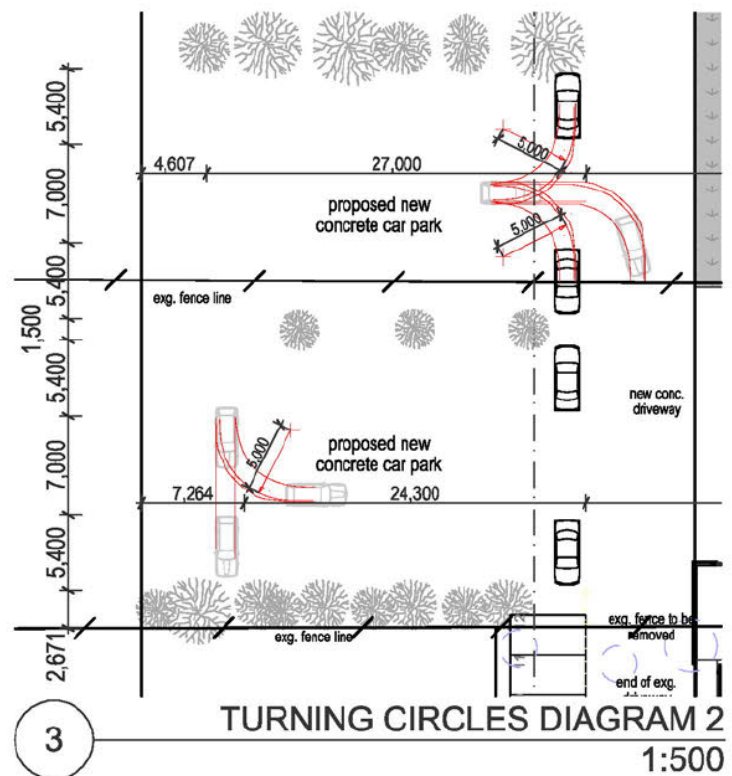
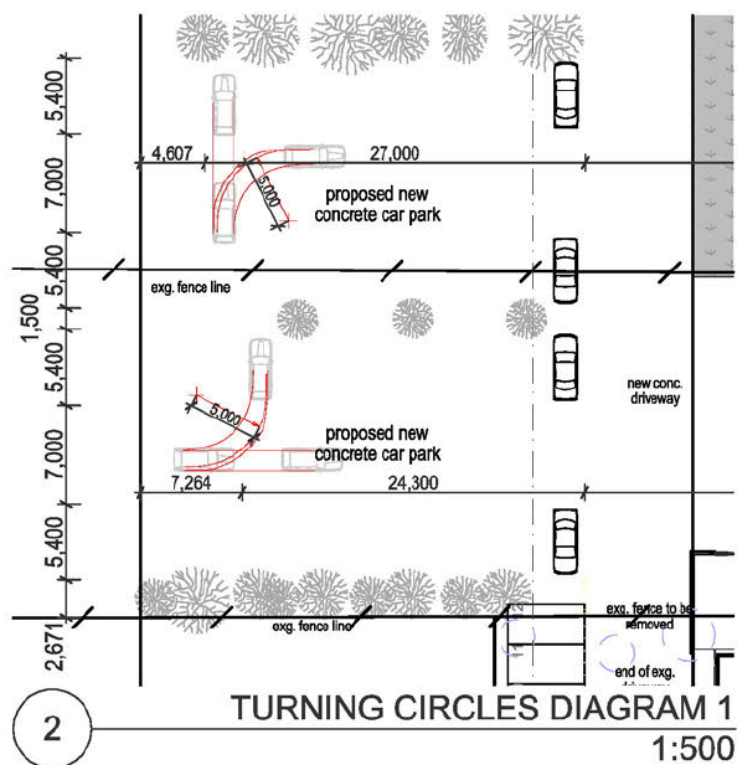
REVISIONS:		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**NOTES**  
DO NOT SCALE OFF THE DRAWINGS REFER TO FIGURED DIMENSIONS ONLY BUILDER TO VERIFY DIMENSIONS ON SITE CONFIRM ALL LEVELS & SITE FEATURES NOTIFY DISCREPANCIES TO THIS OFFICE

PROJECT: rrtag extension  
CLIENT: [REDACTED]  
SITE: 520 corangamite lake road, cororooke  
TITLE: elevation 3

DESIGN: GAD	SCALE: as shown
DRAWN: CS	ISSUED:
CHECK: GAD	TO:
DATE: 06-Jul-21	FOR:

**19-58**  
PROJECT NUMBER  
06 SHEET: OF: REV: A3  
FORMAT

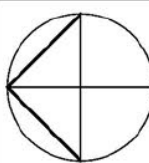


**Geoff De La Rue**  
b arch, rala, hdav

26 murray street colac  
po box 92 colac 3250  
phone 03 5231 4787  
mobile  
info@gdarchitecture.com.au  
www.gdarchitecture.com.au

REVISIONS:		

**NOTES**  
DO NOT SCALE OFF THE DRAWINGS REFER TO FIGURED DIMENSIONS ONLY BUILDER TO VERIFY DIMENSIONS ON SITE CONFIRM ALL LEVELS & SITE FEATURES NOTIFY DISCREPANCIES TO THIS OFFICE



PROJECT: rrrtag extension  
CLIENT: [REDACTED]  
SITE: 520 corangamite lake road, cororooke  
TITLE: parking layouts

DESIGN: GAD	SCALE: as shown
DRAWN: CS	ISSUED:
CHECK: GAD	TO:
DATE: 16-Jun-21	FOR:

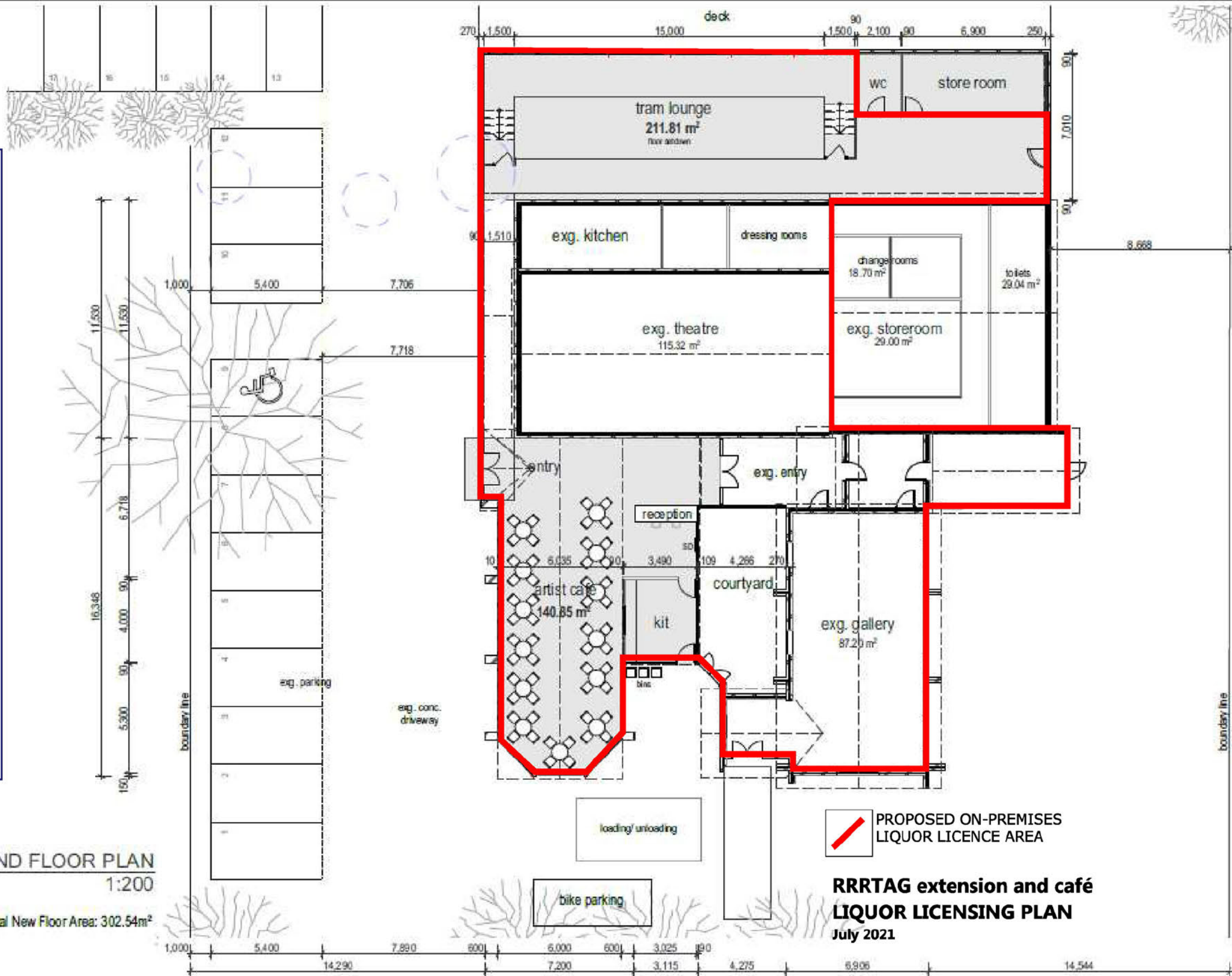
<b>19-58</b>	
PROJECT NUMBER	
07	A3
SHEET: OF: REV:	FORMAT

**Liquor Trading Hours:**

- Sunday:  
Between 10am and 10pm
- Good Friday & Anzac DAY:  
Between 12noon and 10pm
- Friday & Saturday:  
Between 10am and 11pm
- Any other day:  
Between 10am and 10pm

**Café/Restaurant Opening Hours:**

- Sunday  
Between 10am and 10pm
- Good Friday & ANZAC Day:  
Between 10am and 10pm
- Friday & Saturday:  
Between 10am and midnight
- Any other day:  
Between 10am and 10pm



1 GROUND FLOOR PLAN  
1:200

Total New Floor Area: 302.54m<sup>2</sup>

PROPOSED ON-PREMISES LIQUOR LICENCE AREA

**RRRTAG extension and café  
LIQUOR LICENSING PLAN  
July 2021**

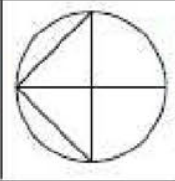


**Geoff De La Rue  
h arch, rala, lval**

26 murray street colac  
po box 92 colac 3250  
phone 03 5231 4787  
mobile  
info@gdararchitecture.com.au  
www.gdararchitecture.com.au

REVISIONS:


NOTES  
DO NOT SCALE OFF THE DRAWINGS REFER TO FIGURED DIMENSIONS ONLY BUILDER TO VERIFY DIMENSIONS ON SITE CONFIRM ALL LEVELS & SITE FEATURES NOTIFY DISCREPANCIES TO THIS OFFICE



PROJECT: rrrtag extension  
CLIENT: [REDACTED]  
SITE: 520 corangamite lake road, cororooke  
TITLE: floor plan

DESIGN: GAD	SCALE: as shown
DRAWN: CS	ISSUED:
CHECK: GAD	TO:
DATE: 06-Jul-21	FOR:

**19-58**  
PROJECT NUMBER  
03 SHEET OF REV. A3 FORMAT

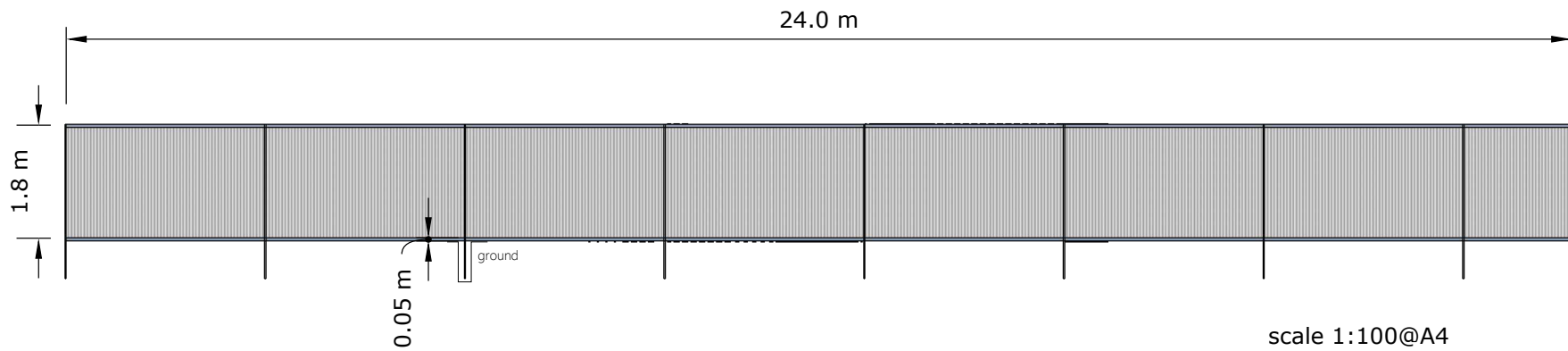
# RRRTAG extension - proposed signage



Existing signage (above). 'Now Open' sign (as shown below) is currently utilised and hung from frame with hooks and eyes.



Proposed signage (above). No change to overall sign dimensions.

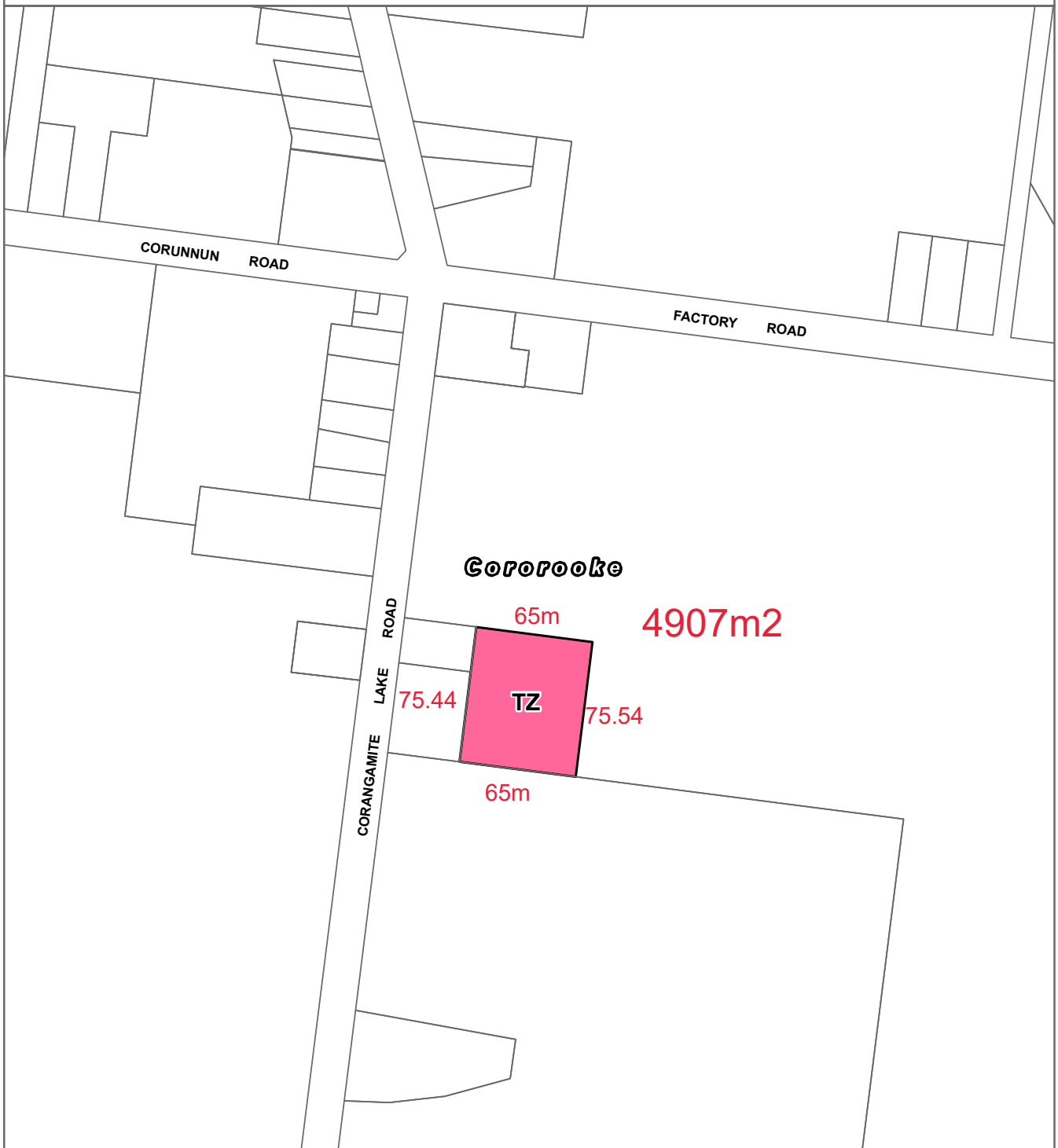


Proposed steel fence.  
Refer to site plan for location.  
Colorbond® Woodland Grey or similar.  
Detailed specifications and design in accordance with registered building surveyor, manufacturer and installer's instructions.  
Minimise separation between ground and fence panel.

**RRRTAG proposed fencing detail for fire protection from south.**

Version 2: 29.06.21

**COLAC OTWAY PLANNING SCHEME - LOCAL PROVISION  
AMENDMENT C111cola**



**LEGEND**

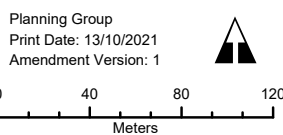
- TZ - Township Zone
- Local Government Area



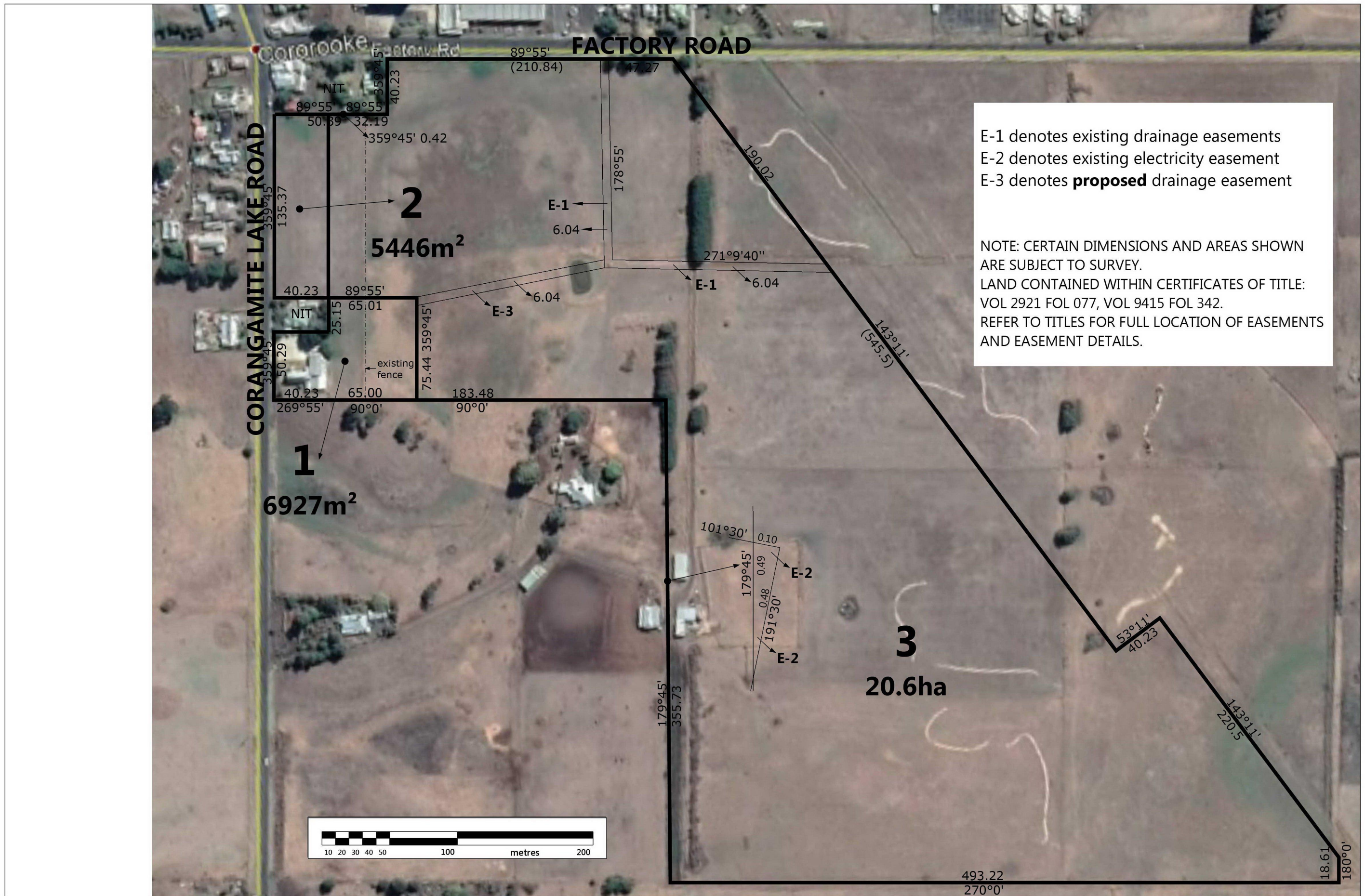
Part of Planning Scheme Map 7

**Disclaimer**  
This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

© The State of Victoria Department of Environment, Land, Water and Planning 2021

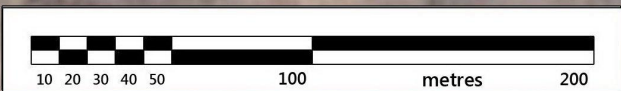


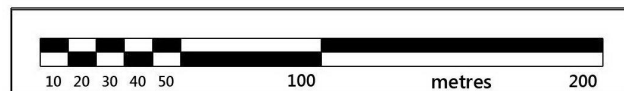
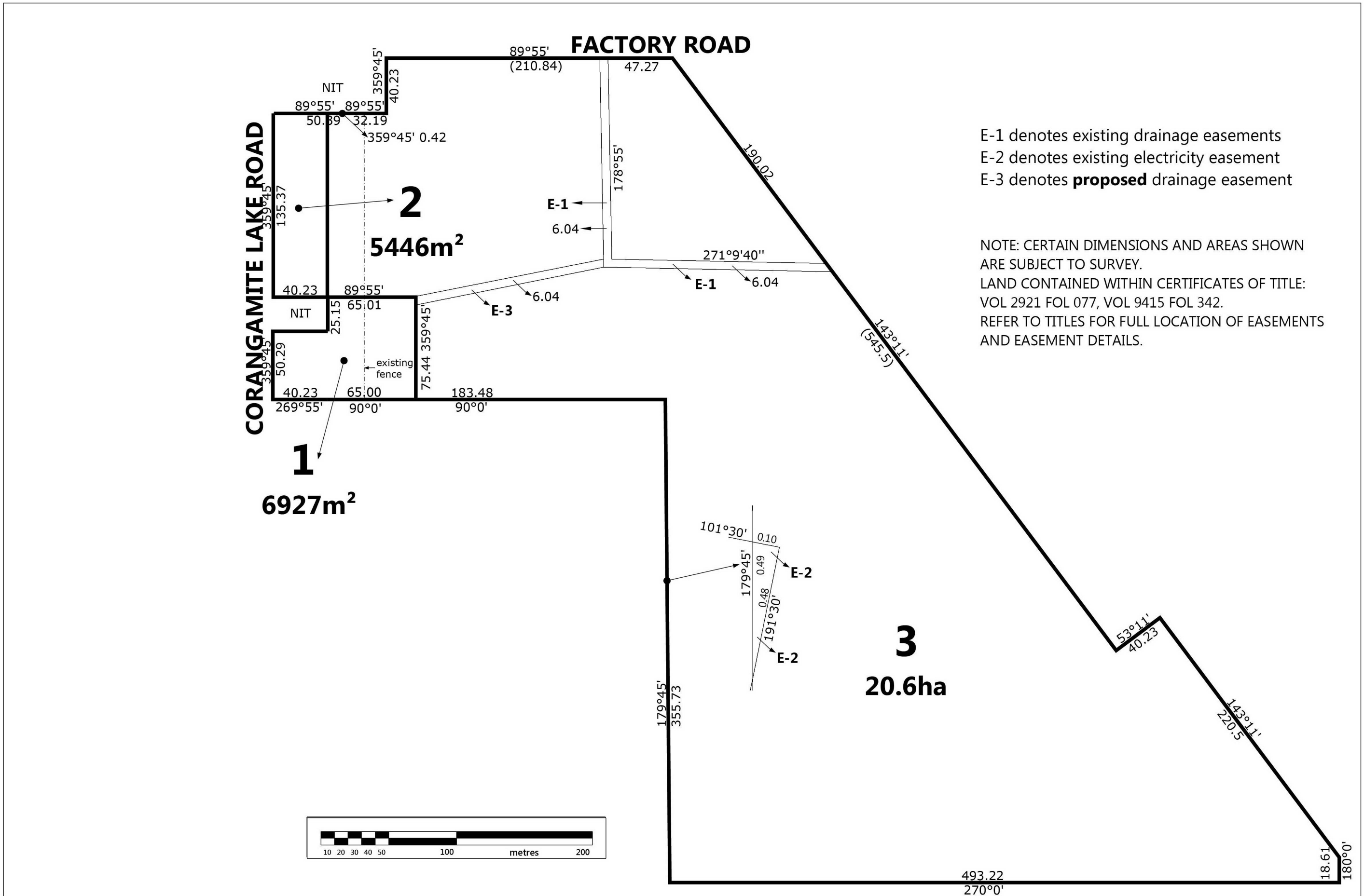




E-1 denotes existing drainage easements  
 E-2 denotes existing electricity easement  
 E-3 denotes **proposed** drainage easement

NOTE: CERTAIN DIMENSIONS AND AREAS SHOWN ARE SUBJECT TO SURVEY.  
 LAND CONTAINED WITHIN CERTIFICATES OF TITLE:  
 VOL 2921 FOL 077, VOL 9415 FOL 342.  
 REFER TO TITLES FOR FULL LOCATION OF EASEMENTS AND EASEMENT DETAILS.





Item: 9.4

## Asset Management Policy For Adoption

<b>OFFICER</b>	Kanishka Gunasekara
<b>GENERAL MANAGER</b>	Heath Chasemore
<b>DIVISION</b>	Infrastructure and Operations
<b>ATTACHMENTS</b>	1. Asset Management Policy For Adoption - Council Meeting August - 2022 [9.4.1 - 6 pages]

### 1. PURPOSE

This report presents the Asset Management Policy for adoption.

### 2. EXECUTIVE SUMMARY

Council's existing Asset Management Policy is a high-level document that describes how Council intends to approach asset management within the organisation and is due to be reviewed. The current Policy was adopted in July 2018 with its 4-yearly review due in 2022. Council officers have undertaken a review of the Asset Management Policy, which was presented at the May Council Meeting for endorsement for public consultation. The draft Policy was endorsed and placed on public exhibition for six weeks to seek community feedback. The submission period closed on 8 July 2022, at which time no submissions had been received.

The draft Asset Management Policy is now presented for consideration for adoption by Council.

### 3. RECOMMENDATION

***That Council:***

- 1. Notes the proposed changes to the Asset Management Policy was exhibited in accordance with Council's resolution of 25 May 2022.***
- 2. Notes that no submissions were received during the public exhibition of the Asset Management Policy.***
- 3. Adopts the Asset Management Policy, as per Attachment 1.***

## 4. KEY INFORMATION

The Asset Management Policy, Asset Management Strategy, and Asset Management Plans are the key supporting documents to Council's legislated Asset Plan, which was adopted by Council at the 29 June 2022 Council Meeting.

The relationship of these documents to the Integrated Strategic Planning and Reporting Framework (ISPRF) are shown in the diagram below taken from Local Government Victoria's Asset Plan Guidance 2022.

### How the Asset Management System links to the Asset Plan and Key Strategic Plans



Council's current Asset Management Policy was adopted in July 2018 and is due for review within 4 years of that date. Asset Management Policy drives asset management at a corporate level and cascades into other documents like Council's Capital Funds Allocation Policy and Capital Project Prioritisation Policy. The Asset Management Policy has been reviewed to incorporate:

1. The current Policy Template;
2. Reference to the ISPRF, Financial Plan and Asset Plan;
3. Clear definition of roles and responsibilities.

The adoption of an updated Asset Management Policy and an Asset Management Strategy, which was endorsed by Council at the May 2022 Council Meeting will provide the necessary policy and strategy support to the Asset Plan which was adopted by Council at the 29 June 2022 Council Meeting.

The Asset Management Policy review and Asset Management Strategy are key policy and strategy documents to enable the continuous improvement of sound asset management practice at Colac Otway Shire. They have been prepared in accordance with appropriate industry guidelines and standards and have been formulated in support of Council's Asset Plan. Both documents require adoption by Council, with the Asset Management Strategy having been adopted at the May Council Meeting, and the Asset Management Policy which is presented for consideration for adoption at the August Council Meeting.

## 5. CONSIDERATIONS

### **Overarching Governance Principles** (s(9)(2) LGA 2020)

This report ensures that:

- a) Council decisions are to be made and actions taken in accordance with the relevant law.
- b) Priority is to be given to achieving the best outcomes for the municipal community, including future generations.
- c) The municipal community is to be engaged in strategic planning and strategic decision making.
- d) The ongoing financial viability of the Council is to be ensured.
- e) The transparency of Council decisions, actions and information is to be ensured.

### **Policies and Relevant Law** (s(9)(2)(a) LGA 2020)

The preparation and adoption of the reviewed Asset Management Policy ensure key support to Council's legislated Asset Plan and provides an effective Council asset management system in accord with the International Infrastructure Management Manual.

### **Environmental and Sustainability Implications** (s(9)(2)(c) LGA 2020)

The Asset Management Policy are both focussed on the sustainability of Council assets and through those the sustainability of our service to the community.

### **Community Engagement** (s56 LGA 2020 and Council's Community Engagement Policy)

The draft Asset Management Policy was released for community consultation, with the submission period closing on 8 July 2022. At the close of submissions, no submissions had been received from the community. The Asset Management Policy is now presented for consideration for adoption with no changes to the draft Policy considered at the May Council Meeting.

### **Public Transparency** (s58 LGA 2020)

Public transparency is ensured by considering the Asset Management Policy in open Council and releasing the Asset Management Policy on Council's website.

### **Alignment to Plans and Strategies**

Alignment to Council Plan 2021-2025:

Theme 1 - Strong and Resilient Community

Objective 3: Key infrastructure investment supports our economy and liveability

Theme 2 - Valuing the Natural and Built Environment

Objective 5: Provide and maintain an attractive and safe built environment

Theme 4 – Strong Leadership and Management

Objective 1: We commit to a program of best practice and continuous improvement

Objective 2: We are a financially robust organisation

The Asset Management Policy and Strategy are strongly aligned to the Integrated Strategic Planning and Reporting Framework, including Council's Asset Plan and Financial Plan. These are Council's *Local Government Act 2020* long term (10 year) planning documents. In turn, The Asset Management Policy and Asset Management Strategy relate to one another and document how objectives of the Council Plan are met by these documents.

### **Financial Management** (s101 *Local Government Act 2020*)

The Asset Management Policy supports Council's Asset Plan which aligns with the Financial Plan. It represents sound financial management because it considers the available funding, recommends an increase in renewal funding and models the future service potential of the assets under the proposed funding scenario.

### **Service Performance** (s106 *Local Government Act 2020*)

The Asset Management Policy relates to service performance because all services use assets as part of the delivery chain. Our assets must be sustainable for our services to be viable in the long term.

### **Risk Assessment**

The risks associated with the management of our assets are considered in this asset management document, and is a key document within the broader asset management framework.

### **Communication/Implementation**

The Asset Management Policy will be made available on Council's website following adoption by Council.

### **Human Rights Charter**

Not applicable.

### **Officer General or Material Interest**

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.

### **Options**

#### Option 1 – adopt the Asset Management Policy as presented.

This option is recommended by officers as the Policy represents the work done by officers and Councillors to develop an Asset Management Policy which considers the best way to ensure that we provide a sustainable portfolio of assets for the long term in order to be able to provide services to the community.

#### Option 2 – adopt the Asset Management Policy with amendments

It may be that Councillors wish to make changes to the Asset Management Policy, which may depend on the quantum of changes require additional consultation with the community.

#### Option 3 – not endorse the Asset Management Policy

This is not recommended by officers as this will delay the organisation progressing with the implementation of asset management strategies and action plans.



## Council Policy

### 13.7 ASSET MANAGEMENT

#### PURPOSE

The purpose of this policy is to set out the basis on which Council manages the assets in its care so as to enable relevant, effective and sustainable delivery of services to the community in alignment with the 2050 Community Vision and Council Plan 2021-25.

#### SCOPE

This policy applies to all assets over which Council has ownership or control or for which Council has the authority to determine either technical or service standards.

These assets include:

- Fixed physical assets such as road, pathway, recreation, and building infrastructure
- Mobile/ Non-fixed physical assets such as heavy plant, fleet, and furniture
- Non-physical assets such as software and licenses.

These assets exclude:

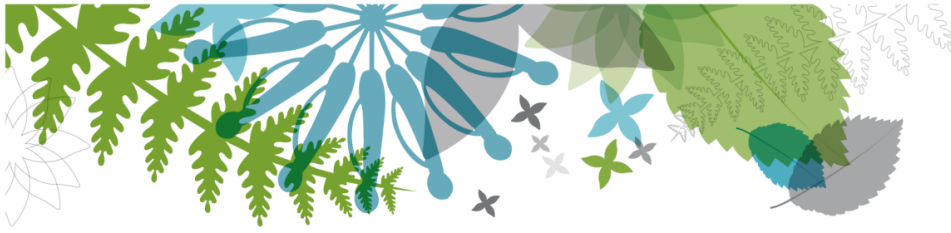
- Physical assets that are the responsibility of others
- Financial assets such as money
- Natural or environmental assets such as trees.

#### DEFINITIONS

**Asset:** A resource controlled by Council from which future economic, social and environmental benefits or service potential are expected to flow to the municipality or the community.

**Asset Management:** The combination of management, financial, economic, engineering and other practices applied to assets with the objective of balancing costs, opportunities and risks against the desired performance of assets to achieve an organisation's objectives.

**Asset Management Plan:** A plan developed for the management of one or more asset groups that combines multi-disciplinary management techniques (including technical and



financial) over the asset lifecycle in the most cost-effective manner to provide a defined level of service.

- Asset Management Strategy:** A strategic framework that effectively guides the management, planning, construction, maintenance and operation activities of assets in the implementation of Council’s Asset Management Policy.
- Asset Plan:** Council’s 10 year plus planning document that outlines key elements, processes, management, and resource allocation for assets of which council is the custodian.
- Financial Plan:** Councils 10 year plus planning document that outlines the financial management, key elements, and resource allocation of the organisation.
- Integrated Strategic Planning and Reporting Framework:** The linked strategic and reporting framework required under the Local Government Act 2020 (Victoria).
- Level of Service:** The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, satisfaction and cost.
- Lifecycle Costs:** The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs, also referred to as ‘Whole of Life Costs’.
- Maintenance:** All actions necessary to manage the physical condition of an asset until rehabilitation or replacement is necessary.
- New Asset:** Refers to an asset that has been created, produced or introduced for the first time, not existing before.
- Operation(s):** The active process of utilizing an asset which will consume resources such as manpower, energy, chemicals and materials.
- Renewal:** Refers to works required or undertaken to return the asset to its “as-new” condition.
- Sustainable:** Able to be maintained or kept going at a certain rate or level by the application of defined actions, process and/ or funding.
- Upgrade:** With respect to any physical asset, any physical enhancement or series of physical enhancements, including any such physical enhancements that would increase the product or service it provides.





---

## REFERENCES

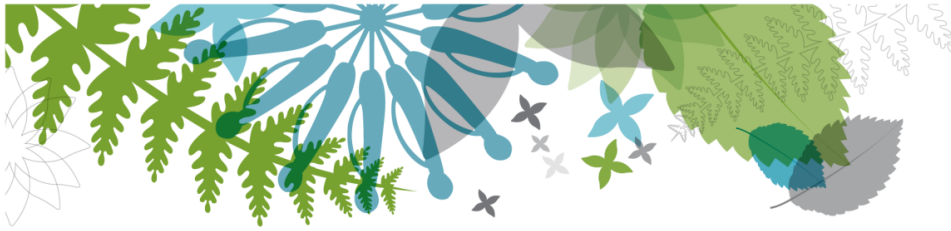
2050 Community Vision  
Council Plan 2021 – 2025  
Financial Plan 2021-22 to 2030-31  
Local Government Act 2020  
Local Government (Finance and Reporting) Regulations 2004  
International Infrastructure Management Manual

---

## STATEMENT OF POLICY

### POLICY

- Council will pursue asset management best practice aimed at providing sustainable service levels from its asset portfolio over the long term.
- Asset Management decisions shall be based on community service delivery needs.
- Asset Management decisions will be aimed at optimising the use of the funding available to undertake relevant and prioritised asset renewal works.
- Council will firstly assess the financial impact on Council's ability to sustain its own asset base before it commits funding (including grant funding) to new, upgraded or expanded assets, including consideration of the whole of lifecycle costs of the proposed assets.
- The potential decommissioning or sale of an asset will be determined by ongoing strategic need, increasing or diminishing usage, condition, risk, lifecycle costs, and overall service priorities.
- Asset management decisions will consider the whole of lifecycle costs (maintenance, operation, and renewal), risk, and the evaluation of alternative options, to allow full assessment, project evaluation and reporting.
- Council's Asset Plan and asset planning shall be integrated with Council's Financial Plan, corporate and business plans, capital works programs, budgets and reporting processes, as part of the Integrated Strategic Planning and Reporting Framework.
- Whole of life costs will be assessed in asset management plans for each long life infrastructure asset group which will inform Council's overall Asset Plan.
- Financial and Asset Management reporting shall be categorised in terms of operational, maintenance, renewal, upgrade and new expenditure classifications to enable sound Asset Management decisions.
- Staff with asset and financial responsibilities will be appropriately trained and skilled in relevant asset and financial management principles and processes.



## OBJECTIVES

The objectives of this Asset Management Policy are to:

- Define an asset management framework that will provide for sustainable delivery of relevant services to the community through fit for purpose assets.
- Provide a clear basis for asset management decision making in relation to Council's delivery of services to the community, including the appropriate management of service and asset related risks.
- Define the roles and responsibility of Council and its staff.
- Ensure compliance with legislation and regulatory requirements.
- Consider environmental impacts.

## PRINCIPLES

Asset management involves all areas of Council including those that plan services, provide services, manage assets and manage financial functions. Asset Management is a key element of Council's Integrated Strategic Planning and Reporting Framework.

Council will ensure that when considering the social, environmental, financial and organisational impacts of any decision they will also properly consider the impact on Council's services and the assets that support them.

Council will provide and manage its assets to ensure they are appropriate to service the needs of the community within its financial constraints.

Assets will be effectively and sustainably utilised and maintained at agreed levels of service. Council will manage its assets through the implementation of an Asset Management Strategy and Asset Plan as part of Council's Integrated Strategic Planning and Reporting Framework.

Asset management practice will include utilising up-to-date technologies, methodologies, systems, and community consultation to provide relevant, strategic, and efficient delivery of services to the community.

Decisions regarding allocation of resources will have regard to sustainable maintenance of assets and the ongoing provision of services provided by those assets.

## ROLES AND RESPONSIBILITIES

### Council:

- Provide sustainable assets for the community by recognising and considering the full cost of Council acquiring, maintaining, renewing and operating assets throughout their lifecycle.
- Provide assets that deliver sustainable services to benefit the community at a level of service that justifies the costs of owning and operating these assets.
- Acts as the asset custodian on behalf of the community.
- Make decisions regarding assets in accordance with the 2050 Community Vision and Colac Otway Shire's Council Plan 2021-2025.
- Review and adopt the Asset Management Policy, Asset Management Strategy, and Asset Plan.



**Chief Executive Officer and Executive Management Team:**

- Reflect the corporate and community strategic planning principles embraced by Council in the Asset Management Policy, Strategy, Plans, and Asset Plan.
- Seek allocation of sufficient resources to the development, ongoing improvement and delivery of the Asset Management Strategy, Asset Management Plans, Asset Plan and supporting systems.
- To ensure the Asset Management Policy and Strategy integrates with the Asset Plan and Financial Plan within the Integrated Strategic Planning and Reporting Framework, and with other policies and business processes of Council.
- To ensure Councillors and the organisation as a whole understand the principles and importance of asset management, and that training needs for Councillors and staff are assessed and programmed .
- To ensure that there is a cross-functional corporate asset management group that provides high level involvement, oversight, accountability, promotion, and reporting of asset management status and effectiveness within Council.
- Review and adoption of Asset Management Plans.

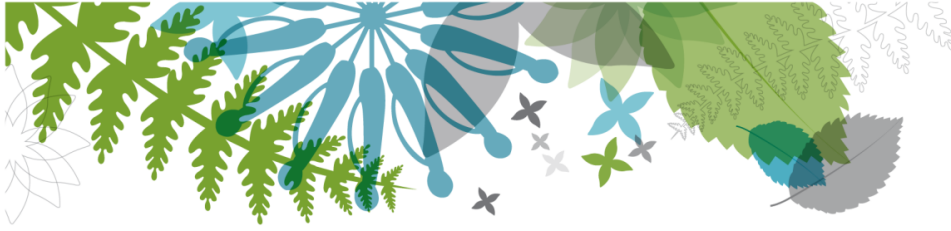
**Council Staff with Asset Management Responsibilities:**

- Develop and maintain Council's Asset Management Policy, Strategy, Asset Plan, and Asset Management Plans.
- Develop asset maintenance, renewal, upgrade and disposal programs in accordance with the Asset Plan, Asset Management Plans, agreed levels of service, and budget allocation.
- Periodically review the Asset Management Policy, Strategy, Asset Plan, and Asset Management Plans in accord with the required timeframes.
- Engage up-to-date technologies, methodologies and continuous improvement processes in the management of Council's assets and its asset management system.
- Ensure that Asset Management skills and training needs are identified and completed as part of the staff performance appraisal process.

---

RELATED DOCUMENTS

2050 Community Vision  
Council Plan 2021-2025  
Financial Plan 2021-22 to 2030-31  
Asset Plan (under review)  
Asset Management Strategy (under review)  
Building Asset Management Plan  
Road Asset Management Plan  
Bridge Asset Management Plan  
Pathway Asset Management Plan  
Stormwater Asset Management Plan  
Open Space and Recreation Asset Management Plan  
Capital Funds Allocation Policy 2022 (under review)  
Capital Project Prioritisation Policy 2022 (under review)  
Risk Management Policy



DOCUMENT CONTROL

Policy owner	Manager Assets and Engineering	Division	Infrastructure and Operations
Adopted by council	August 2022	Policy Number	13.7
File Number	D22 72623	Review date	Every 4 years - Next review due in 2026

For Adoption

## Item: 9.5

# Nomination of a Substitute Representative for Municipal Association of Victoria (MAV) Special State Council meeting

<b>OFFICER</b>	Marlo Emmitt
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	Nil

## 1. PURPOSE

To request Council to appoint a Substitute Representative to attend the Municipal Association of Victoria (MAV) Special meeting of the State Council to be held on Friday 16 September 2022.

## 2. EXECUTIVE SUMMARY

Colac Otway Shire Council is a member of the Municipal Association of Victoria (MAV).

Council's appointed MAV Representative is Councillor Stephen Hart.

Councillor Hart is unavailable when the Special meeting of the State Council is scheduled, therefore Council must resolve to appoint a Substitute MAV Representative to attend in Councillor Hart's place.

## 3. RECOMMENDATION

***That Council:***

- 1. Appoints [insert Councillor] as the Substitute MAV Representative to attend the Special meeting of the State Council scheduled to be held on Friday 16 September 2022.***
- 2. Notes that the Substitute MAV Representative has full voting rights.***
- 3. Notes that the Chief Executive Officer, Anne Howard, intends to accompany the Substitute MAV Representative at the Special meeting of State Council.***
- 4. Notes the Delegate Report prepared by Councillor Hart on the MAV State Council meeting held on 24 June 2022, under Item 10.2 of the Council agenda.***

## 4. KEY INFORMATION

The Municipal Association of Victoria released a Discussion Paper in November 2021, commencing the review of the MAV's Rules of Association (Rules).

A Directions Papers, clarifying the type of Rule changes contemplated was released in April 2022. Consultation and engagement (including round table discussions) were undertaken as part of the process and written submissions were invited from Members and other relevant stakeholder in response to both papers.

Colac Otway Shire Council made a submission (dated 30 May 2022) to the proposed Rules. The Council submitted that:

- It did not support the requirement for member councils to submit matters for consideration at meetings of State Council by Council resolution. Council submitted that each Council should be able to determine the process through which it develops and submits matters for consideration at State Council meetings.
- Member proposals at State Council meetings should "have a major significance to a large number of Councils", rather than "State-wide significance".

The MAV State Council meeting held on 24 June 2022, resolved in favour of the Rules requiring member Councils to submit matters for consideration at State Council and to do so by Council resolution. Further, the proposal at the time of writing this report, is that in the future, motions from the membership to State Council be either of strategic relevance to the MAV or have such significance to the sector that they should be considered.

The purpose of the Special meeting of the State Council, is to endorse the proposed MAV Rules.

## 5. CONSIDERATIONS

### **Overarching Governance Principles** (s(9)(2) LGA 2020)

The Governance Principles relevant to this report are:

- Council decisions are to be made and actions taken in accordance with the relevant law.
- Priority is to be given to achieving the best outcomes for the municipal community, including future generations.
- The transparency of Council decisions, actions and information is to be ensured.

### **Policies and Relevant Law** (s(9)(2)(a) LGA 2020)

The existing MAV Rules of Association require Councils to appoint MAV Representatives and Substitute MAV Representatives by resolution of Council.

### **Environmental and Sustainability Implications** (s(9)(2)(c) LGA 2020)

Not applicable.

### **Community Engagement** (s56 LGA 2020 and Council's Community Engagement Policy)

Not applicable.

### **Public Transparency** (s58 LGA 2020)

Not applicable.

### **Alignment to Plans and Strategies**

Alignment to Council Plan 2021-2025:

Theme 4 – Strong Leadership and Management

Objective 1: We commit to a program of best practice and continuous improvement

### **Financial Management (s101 Local Government Act 2020)**

Not applicable.

### **Service Performance (s106 Local Government Act 2020)**

Not applicable.

### **Risk Assessment**

Not applicable.

### **Communication/Implementation**

Not applicable.

### **Human Rights Charter**

No impact.

### **Officer General or Material Interest**

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.

### **Options**

#### Option 1 – Appoint a Substitute MAV Representative

This option is recommended by officers as Council's MAV Representative, Councillor Stephen Hart, will be on leave when the Special meeting of the State Council is scheduled to be held, and if Council does not appoint a Substitute MAV Representative, then Council will not be able to vote.

#### Option 2 – Do not appoint a Substitute MAV Representative

This option is not recommended by officers because Colac Otway Shire Council will be unable to vote on the proposed MAV Rules if it does not appoint (by resolution), a Substitute MAV Representative.

## Item: 9.6

### Audit and Risk Committee Minutes - 25 May 2022

<b>OFFICER</b>	Lyndal McLean
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	1. 25 May 2022 Audit and Risk Committee meeting - Signed Minutes [9.6.1 - 25 pages]

## 1. PURPOSE

To provide for information the Colac Otway Shire Audit and Risk Committee minutes dated 25 May 2022.

## 2. EXECUTIVE SUMMARY

Once confirmed, the minutes of the Audit and Risk Committee are reported to the next practicable Council meeting. The attached minutes are for the 25 May 2022 Audit and Risk Committee which were confirmed by the Audit and Risk Committee at their meeting on 10 August 2022.

## 3. RECOMMENDATION

***That Council receives for information the Colac Otway Shire Audit and Risk Committee minutes dated 25 May 2022.***

## 4. KEY INFORMATION

The Audit and Risk Committee plays an important role in providing oversight of Colac Otway Shire Council's governance, risk management, internal control practices, internal and external audit functions. This oversight mechanism also serves to provide confidence in the integrity of these practices.

Section 53(1) of the *Local Government Act 2020* stipulates that a Council must establish an Audit and Risk Committee. The Colac Otway Shire Audit and Risk Committee consists of two Councillors and three independent members. The Audit and Risk Committee meets at least four times per year.



The Audit and Risk Committee Charter states that upon acceptance of the minutes by the Audit and Risk Committee, they will be presented to the next Council meeting.

## 5. CONSIDERATIONS

### **Overarching Governance Principles (s(9)(2) LGA 2020)**

The Overarching Governance Principles that are most applicable to the work of the Audit and Risk Committee are:

- a) Council decisions are to be made and actions taken in accordance with the relevant law
- b) priority is to be given to achieving the best outcomes for the municipal community, including future generations
- e) innovation and continuous improvement is to be pursued
- g) the ongoing financial viability of the Council is to be ensured.

### **Policies and Relevant Law (s(9)(2)(a) LGA 2020)**

Audit and Risk Committee Charter  
*Local Government Act 2020*

### **Environmental and Sustainability Implications (s(9)(2)(c) LGA 2020)**

Not applicable

### **Community Engagement (s56 LGA 2020 and Council's Community Engagement Policy)**

Not applicable

### **Public Transparency (s58 LGA 2020)**

Whilst the meetings and agendas of the Audit and Risk Committee are confidential, the outcomes from the meeting are reported to the next practicable open Council meeting.

### **Alignment to Plans and Strategies**

Alignment to Council Plan 2021-2025:

Theme 4 – Strong Leadership and Management

Objective 1: We commit to a program of best practice and continuous improvement

### **Financial Management (s101 Local Government Act 2020)**

Not applicable

### **Service Performance (s106 Local Government Act 2020)**

Not applicable

### **Risk Assessment**

Not applicable

### **Communication/Implementation**

Not applicable

## **Human Rights Charter**

No impact

## **Officer General or Material Interest**

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.

## **Options**

Option 1 – Receive for information the Colac Otway Shire Audit and Risk Committee minutes dated 25 May 2022.

This option is recommended by officers as the minutes were confirmed at the last Audit and Risk Committee meeting.

Option 2 – Do not receive for information the Colac Otway Shire Audit and Risk Committee minutes dated 25 May 2022.

This option is not recommended by officers as the minutes have been confirmed by the Audit and Risk Committee at their last meeting and therefore are deemed to be an accurate reflection of the meeting.



## AUDIT AND RISK COMMITTEE MEETING

# MINUTES

Wednesday 25 May 2022

at 9:00 AM

COPACC

95 - 97 Gellibrand Street, Colac

## COLAC OTWAY SHIRE AUDIT AND RISK COMMITTEE MEETING

**Wednesday 25 May 2022**

### TABLE OF CONTENTS

1 Declaration of Opening of Meeting .....	4
2 Present.....	4
3 Apologies .....	4
4 Declarations of Interest .....	4
5 Confirmation of Minutes .....	5
6.1 Business arising from the previous meeting .....	5
6.2 Internal Audit .....	5
7 Officer Reports.....	6
7.1 CEO Statement of Compliance.....	6
7.2 Review management finance reports and performance statements .....	7
7.3 Asset Plan.....	8
7.4 Asset Management Framework and Plans .....	9
7.5 Update on the implementation of actions from the VAGO report into sexual harassment...10	
7.6 Review of new IT systems and impacts on internal control .....	11
7.7 Review Reports on Internal Audit Reviews - Cybercrime .....	12
7.8 Risk Management - Operational Risks and review of Council's Business Continuity Plan Framework and testing regime.....	13
7.9 Review reports on any instances of unethical behaviour, fraud and corruption and review actions taken to report any such incidents.....	14
7.10 Review status and delivery of Internal Audit Plan and Review scopes of proposed Internal Audit reviews .....	15
7.11 Review progress by management on open Internal Audit actions for audits conducted prior to 2019.....	16

7.12 Review progress by management on open Internal Audit actions for audits conducted from 2019 .....	18
7.13 Discuss audit outcomes and any issues encountered during the course of the audit with Management and the auditors, and Ensure that management responses to any audit findings are appropriate and timely .....	19
7.14 Reporting Responsibilities: Chair Report on Audit Committee activities to Council .....	20
7.15 Other - Purchase orders created in Authority .....	21
7.16 Other: Local Government Act 2020 - Compliance Register - Transition Implementation .....	22
7.17 Meeting Schedule: Review Audit and Risk Committee Plan .....	23
7.18 Details and Estimated Impact of the Land and Building Assets Revaluation on Council's Financial Position .....	24

## COLAC OTWAY SHIRE AUDIT AND RISK COMMITTEE MEETING

MINUTES of the **AUDIT AND RISK COMMITTEE MEETING OF THE COLAC OTWAY SHIRE** held at COPACC on  
Wednesday 25 May 2022 at 9:00 AM.

### MINUTES

#### **1 DECLARATION OF OPENING OF MEETING**

#### **2 PRESENT**

Brian Keane  
Richard Trigg  
Melissa Field  
Cr Graham Costin  
Cr Margaret White

Anne Howard, Chief Executive Officer  
Errol Lawrence, General Manager Corporate Services  
Bryan Lancaster, Acting General Manager Environment and Infrastructure  
Ian Seuren, General Manager Development and Community Services  
Marlo Emmitt, Manager Governance and Communications  
Lyndal McLean, Governance Coordinator  
Amanda Barber, Manager Financial Services  
Paula Gardiner, Acting Manager Assets and Project Delivery  
Matthew Lam, Graduate Engineer Assets and Project Delivery  
Robert Uebergang, Special Projects Coordinator (by videoconference)  
Steven Crawford, Manager Information Services  
Jo Grainger, Manager People and Culture  
Marni Young, Risk and OHS Coordinator (by videoconference)  
Andrew Zavitsanos, Crowe (by videoconference)  
Nick Bell, RSD Audit

#### **3 APOLOGIES**

Nil

#### **4 DECLARATIONS OF INTEREST**

Nil

## 5 CONFIRMATION OF MINUTES

- **Audit and Risk Committee Meeting held on 9 February 2022.**

### **RESOLUTION**

**MOVED Cr Graham Costin, SECONDED Melissa Field**

***That the Audit and Risk Committee confirm the minutes from the Audit and Risk Committee Meeting held on 9 February 2022.***

**CARRIED 5 : 0**

## 6.1 BUSINESS ARISING FROM THE PREVIOUS MEETING

Nil

## 6.2 INTERNAL AUDIT

Audit and Risk Committee Plan

- Item 7.7: Meet in camera with Internal Auditor in the absence of management.

A Closed Session meeting of the Audit and Risk Committee members and Andrew Zavitsanos (Crowe) took place on 25 May 2022 from 8.45am to 9am to consider the item listed immediately above.



**Item: 7.1**

**CEO Statement of Compliance**

<b>OFFICER</b>	Errol Lawrence
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	Nil

**RESOLUTION**

*MOVED Melissa Field, SECONDED Cr Graham Costin*

*That the Audit and Risk Committee note the Chief Executive Officer Statement of Compliance.*

*CARRIED 5 : 0*

**Action:** The Committee requested the Financial Statements include an appropriate comment/explanation for two-way radios.





**Item: 7.2**

**Review management finance reports and performance statements**

<b>OFFICER</b>	Amanda Barber
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	1. Budget Report 31 March 2022 [7.2.1 - 12 pages]

**RESOLUTION**

***MOVED Richard Trigg, SECONDED Melissa Field***

***That the Audit and Risk Committee notes the attached Budget Report for the 9 months ending 31 March 2022.***

***CARRIED 5 : 0***



## Item: 7.3 Asset Plan

<b>OFFICER</b>	Robert Uebergang
<b>ACTING GENERAL MANAGER</b>	Bryan Lancaster
<b>DIVISION</b>	Environment and Infrastructure
<b>ATTACHMENTS</b>	1. Draft Asset Plan Placed on Public Exhibition [7.3.1 - 37 pages]

## RESOLUTION

**MOVED** Cr Margaret White, **SECONDED** Richard Trigg

**That the Audit and Risk Committee:**

1. **Notes that the draft Asset Plan has been placed on public exhibition until 3 June 2022 and that a Submissions Committee meeting is to be held on Wednesday 15 June 2022 for any written submissions received.**
2. **Notes that the adoption of the Asset Plan is to be considered at a Council meeting scheduled to be held on Wednesday 29 June 2022.**
3. **Notes that Council is required to adopt an Asset Plan by the end of June 2022 under the Local Government Act (2020).**

**CARRIED 5 : 0**



## Item: 7.4

## Asset Management Framework and Plans

<b>OFFICER</b>	Robert Uebergang
<b>ACTING GENERAL MANAGER</b>	Bryan Lancaster
<b>DIVISION</b>	Environment and Infrastructure
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. Stormwater Asset Management Plan [7.4.1 - 56 pages]</li> <li>2. Road Asset Management Plan [7.4.2 - 60 pages]</li> <li>3. Pathway Asset Management Plan [7.4.3 - 59 pages]</li> <li>4. Open Space and Recreation Asset Management Plan [7.4.4 - 54 pages]</li> <li>5. Building Asset Management Plan [7.4.5 - 54 pages]</li> <li>6. Bridge Asset Management Plan [7.4.6 - 65 pages]</li> <li>7. Colac Otway Draft Asset Strategy [7.4.7 - 23 pages]</li> <li>8. Draft Asset Management Policy [7.4.8 - 6 pages]</li> </ol>

### RESOLUTION

**MOVED** Cr Graham Costin, **SECONDED** Richard Trigg

**That the Audit and Risk Committee:**

1. **Notes that a reviewed Asset Management Policy has been formulated for Council endorsement and community consultation, to be considered at the 25 May 2022 Council meeting.**
2. **Notes that an Asset Management Strategy has been formulated and is planned to be considered for adoption at the 25 May 2022 Council meeting.**
3. **Notes that six Asset Management Plans for the major infrastructure categories have been completed and approved by the Executive Management Team.**

**CARRIED 5 : 0**



**Item: 7.5**

**Update on the implementation of actions from the VAGO report into sexual harassment**

<b>OFFICER</b>	Jo Grainger
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	Nil

**RESOLUTION**

***MOVED Melissa Field, SECONDED Cr Graham Costin***

***That the Audit and Risk Committee notes the content of this report for information.***

***CARRIED 5 : 0***



Item: 7.6

**Review of new IT systems and impacts on internal control**

<b>OFFICER</b>	Steven Crawford
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	Nil

**RESOLUTION**

***MOVED Richard Trigg, SECONDED Cr Margaret White***

***That the Audit and Risk Committee notes the update on new IT systems and impacts on internal control.***

***CARRIED 5 : 0***



## Item: 7.7

## Review Reports on Internal Audit Reviews - Cybercrime

<b>OFFICER</b>	Steven Crawford
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. Internal Audit Final Report - Cybercrime Vulnerability And Survey Report [7.7.1 - 12 pages]</li> <li>2. Internal Audit Final Report - Cybercrime External Vulnerability Report [7.7.2 - 7 pages]</li> <li>3. Internal Audit Final Report - Cybercrime Internal Vulnerability Report [7.7.3 - 7 pages]</li> <li>4. Internal Audit Final Report - Cybercrime Dark Web Scan Report [7.7.4 - 6 pages]</li> <li>5. ARC Report - Internal Vulnerability Scan Detail - 6-5-22 [7.7.5 - 7 pages]</li> </ol>

## RESOLUTION

**MOVED Melissa Field, SECONDED Richard Trigg**

***That the Audit and Risk Committee receives the Internal Audit Reports on the Cybercrime audit noting management comments.***

**CARRIED 5 : 0**

**Action: To provide an update on the various vulnerabilities to the August 2022 Audit and Risk Committee meeting.**



## Item: 7.8

## Risk Management - Operational Risks and review of Council's Business Continuity Plan Framework and testing regime

<b>OFFICER</b>	Marni Young
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>Operational Risk Register - Risk Executive Report - ARC 20220525 [7.8.1 - 56 pages]</li> <li>Strategic Risk Register - Risk Executive Report - ARC 20220525 [7.8.2 - 32 pages]</li> <li>People &amp; Culture - BIA &amp; Critical Function Response Plan - ARC 20220525 [7.8.3 - 38 pages]</li> </ol>

### RESOLUTION

**MOVED** Cr Graham Costin, **SECONDED** Melissa Field

**That the Audit and Risk Committee receives this report current as at 6 May 2022.**

**CARRIED 5 : 0**

#### Actions:

- Explore including some of the cyber/information technology risks in future reports.
- Report back to the Audit and Risk Committee the new legislative compliance requirements of the Child Safe Standards.



## Item: 7.9

## Review reports on any instances of unethical behaviour, fraud and corruption and review actions taken to report any such incidents

<b>OFFICER</b>	Amanda Barber
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	Nil

### RESOLUTION

***MOVED Richard Trigg, SECONDED Cr Graham Costin***

***That the Audit and Risk Committee notes the update on fraud incidents reported in Council's Fraud and Corruption Register.***

***CARRIED 5 : 0***

**Actions:**

- 1. Include /attach a summary report/register of low level incidents and actions taken to the CEO Statement of Compliance report.**
- 2. Only escalate/report in detail high level incidents to the Audit and Risk Committee.**





## Item: 7.10

## Review status and delivery of Internal Audit Plan and Review scopes of proposed Internal Audit reviews

<b>OFFICER</b>	Errol Lawrence
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. Internal Audit Progress Report as at 3 May 2022 [7.10.1 - 1 page]</li> <li>2. Internal Audit MAP - Follow up of Internal Audit Actions - May 2022 [7.10.2 - 6 pages]</li> <li>3. Client Survey report - Internal Audit - Cybercrime [7.10.3 - 1 page]</li> <li>4. Crowe Publication of Interest - Curious Eyes - January - March 2022 [7.10.4 - 11 pages]</li> </ol>

### RESOLUTION

**MOVED** Cr Margaret White, **SECONDED** Melissa Field

**That the Audit and Risk Committee:**

1. **Notes the Internal Audit Progress Report as at 3 May 2022.**
2. **Reviews and endorses the scope for the Follow up of Previous Audit Findings audit.**
3. **Notes the results of the Internal Audit Survey – Cybercrime.**
4. **Notes the Publication of Interest, Curious Eyes, January – March 2022.**

**CARRIED 5 : 0**



### Item: 7.11

## Review progress by management on open Internal Audit actions for audits conducted prior to 2019

<b>OFFICER</b>	Lyndal McLean
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. Incomplete Audit actions pre-2019 Assessment Flowchart [7.11.1 - 1 page]</li> <li>2. Pre-2019 Audits - Crowe internal audit risk assessment matrix [7.11.2 - 1 page]</li> <li>3. Updated Audit Actions Matrix - Audits conducted prior to 2019 - printed 8 May 2022 [7.11.3 - 9 pages]</li> <li>4. Completed Actions - Audits prior to 2019 - Completed since 8 December 2021 [7.11.4 - 6 pages]</li> </ol>

## RESOLUTION

*MOVED Richard Trigg, SECONDED Melissa Field*

*That the Audit and Risk Committee:*

1. *Notes the update on Internal Audit actions of high and moderate risk rating from audits conducted prior to 2019.*
2. *Endorses the closure of the actions listed below that are marked as 'recommended for closure':*
  - 2.1 *Building Maintenance – Essential Safety Measures, finding number 3 – part 1.*
  - 2.2 *Risk Management and Insurance, finding number 3.1 – part 1.*
  - 2.3 *Risk Management and Insurance, finding number 3.1 – part 2.*
  - 2.4 *Risk Management and Insurance, finding number 3.2 – part 2.*
  - 2.5 *Risk Management and Insurance, finding number 3.3 – part 2.*

**2.6 Capital Works Management, finding number 4 – part 1.**

**CARRIED 5 : 0**



### Item: 7.12

## Review progress by management on open Internal Audit actions for audits conducted from 2019

<b>OFFICER</b>	Lyndal McLean
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. Audit Actions Matrix - Audits from 2019 onwards - Actions Completed since 8 December 2021 [7.12.1 - 10 pages]</li> <li>2. Audit Actions Matrix - Incomplete Actions for Audits 2019 onwards [7.12.2 - 29 pages]</li> </ol>

### RESOLUTION

**MOVED** Melissa Field, **SECONDED** Cr Graham Costin

*That the Audit and Risk Committee notes the update on Internal Audit actions of high and medium risk rating from audits conducted from 2019.*

**CARRIED 5 : 0**



**Item: 7.13**

**Discuss audit outcomes and any issues encountered during the course of the audit with Management and the auditors, and Ensure that management responses to any audit findings are appropriate and timely**

<b>OFFICER</b>	Amanda Barber
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	Nil

**RESOLUTION**

***MOVED Melissa Field, SECONDED Richard Trigg***

***That the Audit and Risk Committee note the progress of the Interim Auditing process and will receive the Interim Management Letter for the year ending 30 June 2021 by internal email circulation.***

***CARRIED 5 : 0***



**Item: 7.14**

**Reporting Responsibilities: Chair Report on Audit Committee activities to Council**

<b>OFFICER</b>	Lyndal McLean
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	1. Report to Council of Colac Otway May 2022 - Biannual Audit and Risk Report [ <b>7.14.1</b> - 3 pages]

**RESOLUTION**

***MOVED*** Brian Keane, ***SECONDED*** Melissa Field

***That the Audit and Risk Committee receives for information the Colac Otway Shire Audit and Risk Committee biannual report.***

***CARRIED 5 : 0***



**Item: 7.15**

**Other - Purchase orders created in Authority**

<b>OFFICER</b>	Errol Lawrence
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	Nil

**RESOLUTION**

***MOVED Cr Margaret White, SECONDED Richard Trigg***

***That the Audit and Risk Committee acknowledges the work done by Council officers to resolve this matter and as a result of that work, determines no further action is required.***

***CARRIED 5 : 0***

**Action: Note that further actions as outlined by the Chief Executive Officer will be implemented.**



## Item: 7.16

## Other: Local Government Act 2020 - Compliance Register - Transition Implementation

<b>OFFICER</b>	Lyndal McLean
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. LGA 2020 - Compliance Register - Transition Implementation - Sections with discrete actions [7.16.1 - 6 pages]</li> <li>2. LGA 2020 - Compliance Register - Transition Implementation - Sections with advice of change [7.16.2 - 3 pages]</li> </ol>

### RESOLUTION

**MOVED** Richard Trigg, **SECONDED** Cr Graham Costin

**That the Audit and Risk Committee note the updated Local Government Act 2020 Transition Compliance Register.**

**CARRIED 5 : 0**





## Item: 7.17

## Meeting Schedule: Review Audit and Risk Committee Plan

<b>OFFICER</b>	Lyndal McLean
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. 2022 Audit and Risk Committee Plan [7.17.1 - 2 pages]</li> <li>2. Audit &amp; Risk Committee - Policy Review Plan [7.17.2 - 1 page]</li> </ol>

**RESOLUTION**

**MOVED** Brian Keane, **SECONDED** Melissa Field

**That the Audit and Risk Committee:**

1. **Notes the updated 2022 Audit and Risk Committee Plan.**
2. **Notes the items listed in the 2022 Audit and Risk Committee Plan for 10 August 2022.**

**CARRIED 5 : 0**



**Item: 7.18**

**Details and Estimated Impact of the Land and Building Assets Revaluation on Council's Financial Position**

<b>OFFICER</b>	Amanda Barber
<b>GENERAL MANAGER</b>	Errol Lawrence
<b>DIVISION</b>	Corporate Services
<b>ATTACHMENTS</b>	Nil

**RESOLUTION**

***MOVED Richard Trigg, SECONDED Cr Graham Costin***

***That the Audit and Risk Committee notes the content of this report.***

***CARRIED 5 : 0***

*The meeting was declared closed at 10.57am.*

**CONFIRMED AND SIGNED** at the meeting held on 10 August 2022.

DocuSigned by:  
*Melissa Field*  
5A031C4DFFAF429...

.....**CHAIR**

Melissa Field

Item: 9.7

## Authorisation of an Officer under the Planning and Environment Act 1987

<b>OFFICER</b>	Belinda Rocka
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	1. Instrument of Authorisation Authorised Officer Planning and Environment Act Jason S [9.7.1 - 1 page]

### 1. PURPOSE

The purpose of this report is for Council to appoint Jason Scammell, Local Laws Ranger as an authorised officer under section 147(4) of the *Planning and Environment Act 1987*.

### 2. EXECUTIVE SUMMARY

The *Planning and Environment Act 1987* (the Act) establishes a framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians.

Officers are required to undertake assessments, give advice or investigate various issues in relation to the Act. In order to do this, authorisation under the Act is required.

### 3. RECOMMENDATION

***That Council:***

- 1. Appoints Jason Scammell as an Authorised Officer pursuant to section 147(4) of the Planning and Environment Act 1987;***
- 2. Authorises the use of the common seal in accordance with Colac Otway Shire Council's Governance Local Law No 4 – 2020; and***
- 3. Notes that the Instrument of Appointment and Authorisation comes into force immediately after the common seal of Council is applied and remains in force until Council determines to vary or revoke it.***

## 4. KEY INFORMATION

It is required that Council appoint new officer Jason Scammell as an authorised officer under the *Act* due to the following:

- The Act regulates enforcement and is reliant on authorised officers acting on behalf of the responsible authority.
- Legal advice recommends authorised officers be appointed by Council using an instrument to address specific authorisation provisions of s.147(4) of the Act versus the broader authorisations of section 224 of the *Local Government Act 1989*.

It is important to note the broader Instrument of Appointment and Authorisation by the Chief Executive Officer pursuant to section 224 of the *Local Government Act 1989* must also be retained as it appoints the officer's position as an authorised officer for the administration and enforcement of other acts.

## 5. CONSIDERATIONS

### **Overarching Governance Principles** (s(9)(2) LGA 2020)

Council decisions are to be made and actions taken in accordance with relevant legislation.

### **Policies and Relevant Law** (s(9)(2)(a) LGA 2020)

Not applicable.

### **Environmental and Sustainability Implications** (s(9)(2)(c) LGA 2020)

Authorisation is required for officers to investigate and enforce planning and land use issues as outlined in this report to serve to protect the wider environment in line with the requirements of the planning scheme and the *Act*.

### **Community Engagement** (s56 LGA 2020 and Council's Community Engagement Policy)

Not applicable.

### **Public Transparency** (s58 LGA 2020)

Not applicable.

### **Alignment to Plans and Strategies**

Alignment to Council Plan 2021-2025:

Theme 4 – Strong Leadership and Management

Objective 1: We commit to a program of best practice and continuous improvement

### **Financial Management** (s101 Local Government Act 2020)

Not applicable.

### **Service Performance** (s106 Local Government Act 2020)

Not applicable.

### **Risk Assessment**

Not applicable.

### **Communication/Implementation**

The attached Instrument of Appointment and Authorisation comes into force immediately upon execution.

### **Human Rights Charter**

Not applicable.

### **Officer General or Material Interest**

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.

### **Options**

#### Option 1 – Authorises the Officer under the Planning and Environment Act 1987

This option is recommended by officers as officers are required to undertake assessments, give advice or investigate various issues in relation to the Act. In order to do this, authorisation under the Act is required.

#### Option 2 – Do not authorises the Officer under the Planning and Environment Act 1987

This option is not recommended by officers as the staff members will be unable to undertake various aspects required of the position.



INSTRUMENT OF APPOINTMENT AND AUTHORISATION

*(Planning and Environment Act 1987)*

In this Instrument “**officer**” means –

**JASON SCAMMELL**

By this Instrument of Appointment and Authorisation Colac Otway Shire Council –

1. Under section 147(4) of the *Planning and Environment Act 1987* appoints the officer to be an authorised officer for the purposes of the *Planning and Environment Act 1987* and the regulations made under that Act; and

It is declared that this Instrument –

- (a) comes into force immediately upon its execution;
- (b) remains in force until varied or revoked

This Instrument is authorised by a resolution of the Colac Otway Shire Council on 24 August 2022.

THE COMMON SEAL of Colac Otway Shire  
Council was hereunto affixed in accordance  
with Local Law No 4

.....  
Chief Executive Officer  
Anne Howard

Dated:

Item: 9.8

## Report of Informal Meetings of Councillors

<b>OFFICER</b>	Lyndal Redford
<b>CHIEF EXECUTIVE OFFICER</b>	Anne Howard
<b>DIVISION</b>	Executive
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"> <li>1. Informal Meeting of Councillors - Council meeting preparation - 27 July 2022 - CM 20220727 [9.8.1 - 2 pages]</li> <li>2. Informal Meeting of Councillors - Councillor Briefing - 3 August 2022 - CB 20220803 [9.8.2 - 2 pages]</li> <li>3. Informal Meeting of Councillors - Councillor Briefing - 10 August 2022 - CB 20220810 [9.8.3 - 2 pages]</li> </ol>
<b>PURPOSE</b>	To report the Informal Meetings of Councillors

### 1. EXECUTIVE SUMMARY

#### INFORMAL MEETINGS OF COUNCILLORS

The Colac Otway Shire Governance Rules require that records of informal meetings of Councillors which meet the following criteria:

*If there is a meeting of Councillors that:*

- *is scheduled or planned for the purpose of discussing the business of Council or briefing Councillors;*
- *is attended by at least one member of Council staff; and*
- *is not a Council meeting, Delegated Committee meeting or Community Asset Committee meeting*

be tabled at the next convenient meeting of Council and recorded in the minutes of that Council meeting.

All relevant meetings have been recorded and documented, as attached.



## 2. REPORTING

*The Informal Meetings of Councillors are reported herewith.*

- |                                       |                       |
|---------------------------------------|-----------------------|
| <b>1. Council Meeting Preparation</b> | <b>27 July 2022</b>   |
| <b>2. Councillor Briefing</b>         | <b>3 August 2022</b>  |
| <b>3. Councillor Briefing</b>         | <b>10 August 2022</b> |

## 3. KEY INFORMATION

The following Informal Meetings of Councillors have been held and are attached to this report:

- |                                |                |
|--------------------------------|----------------|
| 1. Council Meeting Preparation | 27 July 2022   |
| 2. Councillor Briefing         | 3 August 2022  |
| 3. Councillor Briefing         | 10 August 2022 |

## 4. OFFICER DIRECT OR INDIRECT INTEREST

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.



## Informal Meeting of Councillors Record

### Council Meeting preparation

**Date:** 27 July 2022

**Time:** 2.00pm

**Meeting Location:** By videoconference

<b>Invitees:</b>
Cr Jamie Bell, Cr Graham Costin, Cr Kate Hanson, Cr Stephen Hart, Cr Joe McCracken, Cr Chris Potter, Cr Margaret White, Anne Howard, Lenny Jenner, Heath Chasemore, Ian Seuren, Marlo Emmitt, Lyndal Redford
<b>Attendees:</b>
Cr Jamie Bell, Cr Graham Costin, Cr Kate Hanson, Cr Stephen Hart, Cr Joe McCracken, Cr Chris Potter, Cr Margaret White, Anne Howard, Lenny Jenner, Heath Chasemore, Ian Seuren, Marlo Emmitt, Lyndal Redford, Fiona Maw, Dani Wright, Tamzin McLennan, Nicole Frampton, Dora Novak, Doug McNeill, James Myatt
<b>External attendees:</b>
Nil
<b>Apologies:</b>
Nil
<b>Absent:</b>
Nil

**Meeting Commenced at:** 2.05pm

### Declarations of Interest:

Name	Type of Disclosure	Item	Reason
Nil			



Council Meeting preparation – 27 July 2022		
Time	Item	Attendees
2.05pm- 3.45pm	Council Meeting preparation	Fiona Maw Dani Wright Tamzin McLennan Nicole Frampton Dora Novak Doug McNeill James Myatt
3.45pm	Meeting closed	



## Informal Meeting of Councillors Record

### Councillor Briefing

**Date:** 3 August 2022

**Time:** 11.15am

**Meeting Location:** Meeting Rooms 1 and 2, COPACC and by videoconference

<b>Invitees:</b>
Cr Jamie Bell, Cr Graham Costin, Cr Kate Hanson, Cr Stephen Hart , Cr Joe McCracken, Cr Chris Potter, Cr Margaret White, Anne Howard, Lenny Jenner, Heath Chasemore, Ian Seuren, Marlo Emmitt
<b>Attendees:</b>
Cr Kate Hanson, Cr Stephen Hart (by videoconference), Cr Joe McCracken, Cr Chris Potter, Cr Margaret White, Anne Howard, Lenny Jenner (by videoconference), Ian Seuren, Heath Chasemore, Marlo Emmitt, James Myatt (by videoconference), Nicole Frampton (by videoconference), Tamzin McLennan (by videoconference), Doug McNeill (by videoconference), Kanishka Gunasekara (by videoconference), Paula Gardiner (by videoconference)
<b>External attendees:</b>
Nil
<b>Apologies:</b>
Cr Jamie Bell, Cr Graham Costin
<b>Absent:</b>
Nil

**Meeting Commenced at:** 11.20am

### Declarations of Interest:

Name	Type of Disclosure	Item	Reason
Nil			



Councillor Briefing – 3 August 2022		
Time	Item	Attendees
11.20am-11.39am	Upcoming Grant Opportunities	James Myatt
11.39am-11.44am	Lake Colac Perimeter Path Feasibility Study	Nicole Frampton Tamzin McLennan
11.44am-11.50am	Colac Aerodrome Emergency Services Base Plan	James Myatt
11.50am-11.52am	Councillor update from Committee Meetings	
11.52am-1.16pm	Break  Cr Potter did not return to the meeting after the break.	
1.16pm-1.35pm	Planning Reform update	Doug McNeill
1.35pm-1.41pm	Asset Management Policy for Adoption	Paula Gardiner Kanishka Gunasekara
1.41pm-1.50pm	General Business: <ul style="list-style-type: none"> <li>• Staff introductions</li> <li>• Lake Colac foreshore basketball backboard</li> <li>• Planning compliance</li> <li>• Local Government Foot and Mouth Disease update</li> </ul>	
1.50pm	Meeting closed	



## Informal Meeting of Councillors Record

### Councillor Briefing

**Date:** 10 August 2022

**Time:** 1.00pm

**Meeting Location:** Meeting Rooms 1 and 2, COPACC and by videoconference

<b>Invitees:</b>
Cr Jamie Bell, Cr Graham Costin, Cr Kate Hanson, Cr Stephen Hart , Cr Joe McCracken, Cr Chris Potter, Cr Margaret White, Anne Howard, Andrew Tenni, Heath Chasemore, Ian Seuren, Marlo Emmitt
<b>Attendees:</b>
Cr Kate Hanson, Cr Stephen Hart (by videoconference), Cr Joe McCracken, Cr Chris Potter, Cr Margaret White, Anne Howard, Ian Seuren, Heath Chasemore, Andrew Tenni, Lenny Jenner (by videoconference), Marlo Emmitt, James McDonald (by videoconference), Doug McNeill (by videoconference), Louise Harvey
<b>External attendees:</b>
Chief Executive Officer - Great Ocean Road Coast and Parks Authority (GORCAPA), Director – Strategy, Transformation and Engagement, GORCAPA
<b>Apologies:</b>
Cr Jamie Bell, Cr Graham Costin
<b>Absent:</b>
Nil

**Meeting Commenced at:** 1.07pm

### Declarations of Interest:

Name	Type of Disclosure	Item	Reason
Nil			



Councillor Briefing – 10 August 2022		
Time	Item	Attendees
1.07pm-1.09pm	New General Manager introductions	Anne Howard
1.09pm-1.10pm	Councillor and EA to CEO, Mayor and Councillors catch up	Louise Harvey
1.10pm-1.13pm	Councillor update from Committee Meetings	
1.13pm-1.15pm	Break	
1.15pm-1.56pm	Great Ocean Road Coastal and Parks Authority Presentation	CEO - GORCAPA Director – Strategy, Transformation and Engagement, GORCAPA
1.56pm-2.17pm	Consideration of Submissions to Draft Domestic Wastewater Management Plan (including update on Forrest waste-water management)  Cr McCracken left the meeting at 1.57pm; returned at 2.06pm.	James McDonald Doug McNeill
2.17pm-2.27pm	MAV Rules Review	Cr Stephen Hart Marlo Emmitt
2.27pm-2.43pm	General Business: <ul style="list-style-type: none"> <li>• Lake Colac foreshore basketball backboard</li> <li>• Aged Care transition model</li> <li>• Colac East roundabout</li> <li>• Advocacy priority projects</li> <li>• Proposed Harris Street footbridge</li> </ul> Cr McCracken left the meeting at 2.43pm and did not return.	
2.43pm-2.50pm	Break	
2.50pm-3.41pm	Governance Rules discussion	Anne Howard Marlo Emmitt
3.41pm	Meeting closed	

Item: 10.1

## Report from Delegate - 2022 National General Assembly in Canberra - 19-22 June 2022

<b>COUNCILLOR</b>	Cr Chris Potter
<b>ATTACHMENTS</b>	1. Summary - National General Assembly 2022 notes [10.1.1 - 11 pages]

### 1. PURPOSE

To report to Council on Councillor attendance at the Australian Local Government Association National Conference in Canberra for the period 19 to 22 June 2022.

### 2. REPORT FROM DELEGATE

The Australian Local Government Association (ALGA) holds an annual conference in Canberra and all councils/shires across Australia are invited. One purpose of the conference is to discuss and vote on notices of motion submitted by individual councils and to take those decisions to the Federal Government. This is the opportunity to highlight to the Federal Government the local government issues and needs, community issues and influence Federal Government decisions and policy.

The Colac Otway Shire delegation this year was comprised of Mayor Kate Hanson, Deputy Mayor Graham Costin, Councillor Chris Potter and Chief Executive Officer Anne Howard. Councillor Chris Potter is the appointed delegate to the assembly.

Approximately 900 councillors, CEOs and staff registered for the conference. An excerpt of the itinerary is attached to this report.

In addition to the listed speakers, the conference was attended by some politicians including the new Federal Minister for Local Government Kristy McBain, and the Leader of the Nationals, David Littleproud.

A highlight was an address and presentation by the Ukrainian Ambassador to Australia, Vasyly Myroshnychenko.

There were 104 motions in the list to debate, however time restrictions prevented the entire list being discussed.

There was a cross section of issues raised including funding to local government, roads funding, environment and sustainability, the housing crisis and worker availability. Many shires and regions suffer from the same issues as Colac Otway Shire and our neighbours.



There were a number of seminars available: the Mayor Hanson attended a seminar on Leadership, Deputy Mayor Graham Costin attended one in relation to environment and Councillor Potter attended a seminar relating to planning for and recovery from natural disasters, especially flooding and fire.

A large number of exhibitors were present in the conference centre. Of particular interest was the electric truck display, electric mowers, greening Australia and an Air BnB stand. Deputy Mayor Graham Costin took the opportunity to spend time with the Air BnB representatives discussing issues and solutions to the impact of the proliferation of Air BnBs along our coast.

The Colac Otway Shire delegation also took the opportunity to discuss issues with our neighbouring shires, who were well represented, and those further afield from metropolitan and rural Australia.

It was appropriate and worthwhile having a Shire delegation attend this conference. It must also be point out that all attendees, especially the Mayor and CEO, continue to deal with day-to-day Shire matters and all attended an online Colac Otway Shire Councillor Briefing whilst in Canberra, which added to the workload.



AUSTRALIAN  
LOCAL GOVERNMENT  
ASSOCIATION

PARTNERS IN PROGRESS

**2022**  
NATIONAL  
**GENERAL**  
ASSEMBLY  
19 - 22 JUNE 2022

**HANDBOOK**

# President Welcome



## National General Assembly 19 - 22 June 2022



Dear colleagues

Welcome to the 28th National General Assembly (NGA) of Local Government.

Over the next few days we will hear from local and international experts, and work through how we can best partner with the Federal Government to support and enable our communities.

We will also consider the issues that are important to you and your communities as we discuss and debate your council motions.

The motions passed at last year's NGA underpinned ALGA's advocacy platform in the lead up to this year's Federal Election, and our national "Don't Leave Local Communities Behind" campaign.

I am pleased to report that, working together to advocate to all parties and candidates, we were able to secure major funding and policy commitments that will support every Australian community.

Reinstating local government representation to National Cabinet was one of our main advocacy goals, and I am thrilled we were able to deliver on this priority. This will support better partnerships between all levels of government, and ensure local voices are considered in national decision making.

Last year the NGA resolved to advocate for increased investment in regional digital connectivity, and our pre-election advocacy delivered commitments from both major parties.

Working on your behalf, ALGA was also able to secure commitments from both parties to increase the highly successful Local Roads and Community Infrastructure Program, that will see more federal funding flow into every Australian community.

We also secured commitments from both parties to continue to increase Financial Assistance Grants, and will continue to advocate for this vital funding to be restored to at least one percent of Commonwealth taxation revenue.

Finally, our advocacy resulted in a new \$200 million per year Commonwealth disaster mitigation program that will help us better protect our communities from future cyclones, fires and floods.

The motions passed at this year's NGA will help inform ALGA's advocacy over the coming twelve months, and I look forward to taking your carried motions to our federal leaders in Canberra.

We couldn't hold this conference without the generous support of our sponsors and exhibitors, and I encourage you to visit with them in the Exhibition Hall and find out how they can help your council and community.

I hope you enjoy this year's NGA, and I look forward to meeting you!

Cr Linda Scott  
ALGA President



# Program

## FACILITATOR & MC



### **ALICIA MCKAY**

Alicia is an author, speaker, podcaster and strategy and leadership consultant and educator.

Her latest book is titled "You Don't Need An MBA: Leadership Lessons that Cut Through the Crap."

## Join the Conversation #NGA22

### SUNDAY 19 JUNE

8.30am	Registrations Open
9.30am - 5.00pm	Regional Forum Ballroom, National Convention Centre
5.00pm - 7.00pm	Welcome Reception & Exhibition Opening

### MONDAY 20 JUNE

8.00am	Registrations Open
9.00am	Opening Ceremony Welcome to Country - Violet Sheridan
9.20am	ALGA President Opens the Assembly
9.30am	Prime Minister of Australia Address The Hon Anthony Albanese MP, Prime Minister of Australia (invited)
10.00am	ALGA President's Address Cr Linda Scott, ALGA President
10.30am	<b>MORNING TEA</b> 
11.00am	Keynote Address: Thinking Differently for a New Future of Local Government in Australia Alicia McKay, Strategic Leadership Expert, NZ
11.45am	Mayoral Panel: What is Progress? Cr Tracy Lefroy, President, Shire of Moora Cr Steve Krieg, Mayor, City of Lismore Cr Matthew Deeth, Deputy Mayor, Wollondilly Shire Council and President National Growth Areas Alliance Lapulung Dhamarrandji, President, East Arnhem Regional Council
12.30pm	<b>LUNCH</b> 
1.30pm	Debate on Motions
3.30pm	<b>AFTERNOON TEA</b>
4.00pm	Keynote Address: Local Government and Productivity Marcus Spiller, Principal & Partner, SGS Economics & Planning
4.30pm	Minister for Local Government Address (invited)
5.00pm	Closing Remarks
7.00pm - 11.00pm	Networking Dinner National Museum of Australia 



## TUESDAY 21 JUNE

8.30am	Registration Opens
9.00am	Panel: Building Stronger Communities Gary Okely, Head Public Sector - Pacific, JLT Muheed Jamaldeen, Director, Deloitte Access Economics
10.00am	Panel: Federation Reborn Paul Tilley, Economist Graham Jarvis, Portfolio Lead (Strategic Finance), AEC Group
10.45am	<b>MORNING TEA</b>
11.15am	Keynote Address: Global Democracy Stan Grant, Journalist and Author
12.00pm	<b>LUNCH</b>
1.00pm	Debate on Motions
2.00pm	Panel: Population, Housing and Workforce Skills Damien White, Executive Director, Centre for Population, Federal Treasury Michelle Tjondro, Local Government Workforce Skills Project Wendy Hayhurst, CEO, Community Housing Industry Association
3.00pm	<b>AFTERNOON TEA</b>
3.30pm	Concurrent Sessions <ul style="list-style-type: none"> <li>• <b>SESSION 1 - Ballroom</b> Workshop - Local Government Action to Reduce Disaster Risks</li> <li>• <b>SESSION 2 - Royal Theatre</b> Local Governments Tackling Climate Change</li> <li>• <b>SESSION 3 - Bradman Theatre</b> Transport, Infrastructure, Regional Insights and Opportunities for Local Government</li> <li>• <b>SESSION 4 - Murray Room</b> Strategic Community Leadership with Alicia McKay</li> </ul>
5.00pm	Closing Remarks
7.00pm - 11.00pm	General Assembly Dinner Exhibition Park in Canberra (EPIC)

## WEDNESDAY 22 JUNE

8.30am	Registration Opens
9.00am	Opposition Leader Address (invited)
9.30am	Panel: Closing the Gap Jody Broun, CEO, National Indigenous Australians Agency Fiona Cornforth, CEO, The Healing Foundation
10.15am	Keynote Address: Local Government - A Global View Dr Jonathan Carr-West, CEO, Local Government Information Unit, UK
10.45am	<b>MORNING TEA</b>
11.15am	Mayoral Panel: What Have We Learned? Ald Doug Chipman, Mayor, Clarence City Council Dr Heather Holmes-Ross, Mayor, City of Mitcham
12.15pm	Keynote Address: Driver First Aid: Reducing Death and Serious Injury on Our Roads Valmai Dempsey, 2022 Senior Australian of the Year
12.45pm	Closing Session ALGA President Closing Address
1.00pm	<b>LUNCH</b>

# Concurrent Sessions

## **TRANSPORT, INFRASTRUCTURE AND REGIONAL INSIGHTS AND OPPORTUNITIES FOR LOCAL GOVERNMENT**

### **BRADMAN THEATRETTE**

Hear from the Department of Infrastructure, Transport, Regional Development and Communications about the policies, strategies and programs that impact on local governments, spanning remote roads upgrades, the Northern Australia agenda, and drones and emerging aviation technologies amongst other contemporary initiatives.

## **LOCAL GOVERNMENTS TACKLING CLIMATE CHANGE**

### **ROYAL THEATRE**

Local governments and their communities are on the frontline when dealing with the risks and impacts of climate change. Councils are also leaders in transitioning to renewable energy.

This concurrent session will explore some of the national and international positions, and attendees will hear from councils about their local action.

It will also be an opportunity to connect with other councils and discuss some of the critical climate change and renewable energy issues facing councils and their communities.

## **WORKSHOP: LOCAL GOVERNMENT ACTION TO REDUCE DISASTER RISKS**

### **BALLROOM**

Join the National Recovery and Resilience Agency for a workshop on Australia's disaster risk reduction efforts.

The scale of the recent flooding along the eastern seaboard reinforces the need for communities to reduce their exposure and vulnerability for future natural hazard events.

This workshop will identify the transformational climate and disaster risk reduction initiatives that are required at the local level to significantly reduce disaster risk now and into the future.

It will also stimulate discussion on how underlying local vulnerabilities can drive disaster risk, explore the notions of shared responsibility and leadership, and what actions could make the biggest difference locally if adopted nationally.

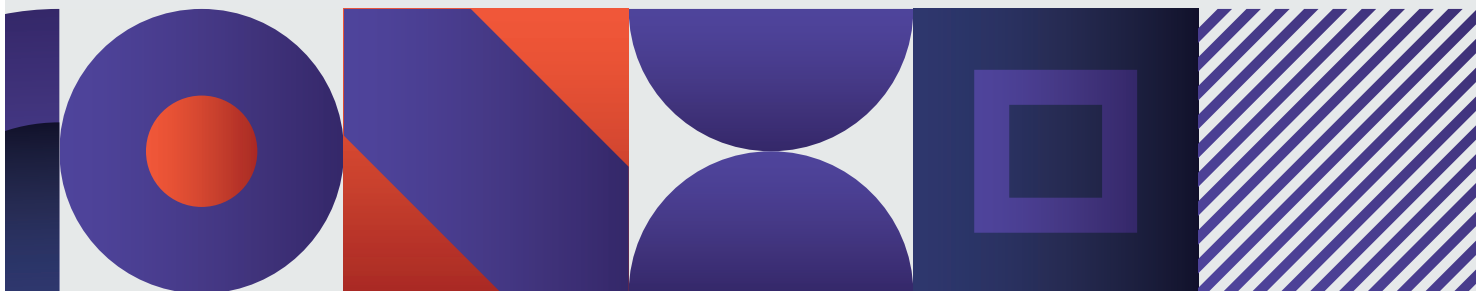
## **STRATEGIC COMMUNITY LEADERSHIP ALICIA MCKAY MASTERCLASS**

### **MURRAY ROOM**

Our MC and keynote speaker Alicia McKay will run an exclusive introductory masterclass on strategic public leadership.

Learn the difference between private and public leadership, the secret to being more strategic, and get a live taste of her newly launched program designed exclusively for local government leaders.

This session is limited to just fifty places and pre-registration is required.



# NGA22 Speakers



## **STAN GRANT**

Journalist and author

Stan Grant is the International Affairs Editor for the ABC, a multi award-winning current affairs host, and author.

Stan's Aboriginal heritage has shaped his dynamic, resilient personality. Born in Griffith in south-west New South Wales, in 1963, his mother is from the Kamilaroi people and his father is of the Wiradjuri.

Stan has hosted major news and current affairs programs on Australian commercial and public TV, and been a political correspondent for the ABC, and a foreign correspondent for the Seven Network based in London and CNN based in Hong Kong and Beijing.

Stan has written *The Tears of Strangers* and *Talking To My Country* (Harper Collins), and has published numerous articles and opinion pieces for *The Sydney Morning Herald* and *The Australian*.



## **ALICIA MCKAY (NZ)**

Strategic Leadership Expert, NZ

Alicia McKay is a leading authority on organisational strategy and change, empowering senior leaders in government, business and the community to think smarter and make better decisions.

A celebrated author, speaker, facilitator, coach, and leader, she has a voice that cuts through the sea of corporate jargon to get real about what it takes to change our life, work and leadership.

Drawing on specialist accreditations in problem definition, strategy development and investment, Alicia launched *Meetings that Matter* in 2020, which is quickly becoming the gold standard for strategic facilitation in New Zealand and Australia.

Combining best-practice research, dynamic delivery and a cheeky grin, Alicia gets serious results in even the most challenging environments.

Alicia's latest book is titled "You Don't Need An MBA: Leadership Lessons that Cut through the Crap".



**DR JONATHAN CARR-WEST (UK)**

CEO, Local Government Information Unit, UK

Dr Jonathan Carr-West has been Chief Executive of LGIU (Local Government Information Unit) since February 2013, where he leads on all aspects of the think tank's policy, membership and influencing work.

Some of his particular interests are in participative democracy, the evolving nature of public services and devolution. With extensive media profile and sector credibility, he has published on topics as diverse as localism and public service transformation, cognitive and behavioural science, and the politics of cultural memory.

Prior to being appointed as Chief Executive, Jonathan was Director of Policy at the LGIU where he led on research and consultancy, policy development and piloting, best practice dissemination, learning and development.



**VAL DEMPSEY**

2022 Senior Australian of the Year

For more than 50 years Valmai (Val) Dempsey has dedicated her life to St John Ambulance.

In 2020, Val faced her biggest challenge yet – first with the 'Black Summer' bush fires, followed by the COVID-19 pandemic.

In response, she led 40 fellow volunteers as they supported fire-affected communities during the emergency that stretched over many weeks, and when the pandemic hit, she personally contacted every volunteer to check they were 'doing OK' in terms of welfare, mental health and morale.

It is these tireless commitments to St John that has led many in the community to know her lovingly as 'Aunty Val'.



**PAUL TILLEY**

Economist

Paul Tilley was an economic policy adviser to governments for 30 years, working mainly in Treasury but also Prime Minister & Cabinet, the Treasurer's office and the Organisation for Economic Cooperation and Development.

He has since published a book on the history of the Treasury, Changing Fortunes: A History of the Australian Treasury, is a Visiting Fellow at the ANU's Tax and Transfer Policy Institute and a Senior Fellow at the Melbourne Law School.

Paul is currently writing a book on the history of tax reform in Australia.



# NGA22 Speakers



**GARY OKELY**

Head Public Sector - Pacific, JLT  
Having worked with insurance markets in Australia, Asia and London during a 30-plus-year career, Gary is highly regarded and his work has been trailblazing – assisting the government sector, businesses and not-for-profit organisations to move beyond traditional approaches to take control of their own outcomes. This has resulted in stronger risk management, including cooperative self-insurance options, and improved claims management results.

Gary is also leading conversations on disaster vulnerability and resilience with public sector entities and the insurance sector.

Gary became a Director of JLT Australia in March 2010 and today is Head of JLT Public Sector – Pacific. He is Vice President of the National Insurance Brokers Association and a Board Member of the Local Government Mutual Risk Schemes in New South Wales and South Australia.



**JODY BROUN**

CEO, National Indigenous Australians Agency

Jody Broun is an Yindjibarndi woman from the Pilbara in Western Australia, who has maintained strong connections to country, community and culture throughout her life.

Jody is passionate about social justice, community led co-design, and making a difference through changing the way government does business with Aboriginal communities and stakeholders.

Over the past 30 years Jody has held various senior positions in the government and not-for-profit sectors including Executive Director Aboriginal Housing and Infrastructure in WA; Director of Equal Opportunity in Public Employment in WA; Director General Department of Aboriginal Affairs in NSW; and Co-Chair of the National Congress of Australia's First People and Director of NSW and ACT for Australian Red Cross.

In February 2022, Jody was appointed Chief Executive Officer of the National Indigenous Australians Agency.



#### **MUHEED JAMALDEEN**

Director, Deloitte Access Economics  
Muheed leads the urban and regional economics team at Deloitte Access Economics. He is an economist who advises public and private sector clients on a range of public policy and strategy issues relating to transport, infrastructure, freight and supply chains, land-use, and urban and regional economics covering both microeconomic and macroeconomic considerations. Muheed is a keen thinker on cities and regions, striving to ensure that Australia's cities and regions function at their very best, considering not only economic factors, but also social, environmental, cultural, and ecological considerations. He has a particular focus on the economics of climate change and how they impact on the performance of our cities and regions, having led work on a range of topics related to freight, supply chains, natural disaster risk reduction, investment policy, cities and regions, and regulation.



#### **GRAHAM JARVIS CPA MBA**

Portfolio Lead (Strategic Finance),  
AEC Group

Graham is the Portfolio Lead (Strategic Finance) at AEC Group, with a keen interest in financial sustainability of local government services, strategic asset management, service planning, capital works planning, investments and revenue strategies.

Graham's local government experience includes seven years as Director of Corporate Services at Whitsunday Regional Council.

Graham now leads a team of local government experts within AEC providing a range of financial, economic and property management solutions to local government authorities and local government associations across Australia. Most recently Graham has authored advisory reports for the Australian Local Government Association and the Local Government Association of Queensland.



#### **MICHELLE TJONDRO**

Local Government Workforce Skills  
Project

Michelle is a policy professional and spatial data consultant committed to understanding how people and place work together to shape cities and regions. Her multidisciplinary background spans professional and academic experience in a range of sectors, including education, health and economic development.

Before joining SGS, Michelle advised state government's regional economic growth agenda and supported infrastructure planning with demographic analysis. She advocates a data driven philosophy to policy design for equitable Australian communities.

Michelle has a Master of City Analytics from the University of New South Wales and is a graduate of the Sydney Law School.



# NGA22 Speakers



**COUNCILLOR MATTHEW DEETH**

Chair, National Growth Areas Alliance  
Matthew Deeth has served as a Wollondilly Councillor since 2016 and also held the role of Mayor from 2018-20. He has served as Chair of the National Growth Areas Alliance since 2019.

Cr Deeth recognises that Wollondilly is on the cusp of the biggest increase in growth it has ever seen, and the Shire needs urgent attention to improve its existing infrastructure.

He aims to be a strong voice for the community and is willing to demand better outcomes from developers and all tiers of government to ensure his community's voice is heard.



**MARCUS SPILLER**

Principal & Partner, SGS Economics & Planning

Marcus is a founding Partner at SGS. Formally qualified in commerce and urban planning, he has practiced as a consultant for much of his career, but has also worked as an academic, local government town planner, Ministerial Adviser and senior bureaucrat in State and Commonwealth Government agencies.

Marcus is widely published in regional economic development, housing policy, infrastructure funding and metropolitan governance. This includes writing and co-editing two books on urban management.

He is an Associate Professor at the University of Melbourne, and has been awarded the title of Life Fellow of the Planning Institute of Australia.



**WENDY HAYHURST**

CEO, Community Housing Industry Association

Wendy was appointed in March 2019 as CEO of the Community Housing Industry Association (CHIA), the peak body representing not for profit community housing organisations across Australia.

Previously she led CHIA NSW – the state peak - for four years. Wendy has spent almost her entire career in social and affordable housing – working her way from the front line to a non-executive directorship and senior managerial roles in a wide range of housing provider organisations, regulatory bodies, specialist consultancies and performance benchmarking organisations.

She has in-depth knowledge and experience of the NSW, national and international community housing sector through her work with the NSW Regulator, in shaping and administering the National Regulatory System and her work in the United Kingdom.



**DAMIEN WHITE**

Executive Director, Centre for Population, Federal Treasury

Damien White is the Executive Director of the Centre for Population (which is part of his position as First Assistant Secretary of Commonwealth-State and Population Division) in the Department of the Treasury.

He is a long-term Treasury officer, having joined as a graduate, and has worked across a broad range of policy areas, with a focus on the budget and fiscal policy issues. This has included as Chief Advisor, National Security; Division Head of Infrastructure, Industry, Environment and Defence Division; and Principal Advisor in Social Policy Division.

Damien has also held senior roles in the Office of National Intelligence (including Deputy Director-General) and the Department of Communications (reviewing the NBN) and was a senior advisor in the Treasurer's Office.



**FIONA CORNFORTH**

CEO, The Healing Foundation

Fiona Cornforth is a Wuthathi descendant of the far northeast cape of Queensland with family roots also in the Torres Strait Islands. She has an extensive background working as part of Aboriginal and Torres Strait Islander peoples' community, business and government initiatives for better outcomes and impact. On a foundation of senior and leadership roles in the community, and all tiers of government, she has used management degrees and tertiary teaching accreditation to raise awareness around the impacts of intergenerational trauma and the power and strengths of First Nations peoples' cultures for healing.

Fiona has gained experience and perspectives in education, leadership and business development globally and shares a message of celebration and gratitude for the greatness of ancestors, elders, and the ontology and authority that holds her and her family.

## Item: 10.2

# Report from Delegate - Municipal Associations of Victoria (MAV) State Council meeting held on Friday 24 June 2022

<b>COUNCILLOR</b>	Cr Stephen Hart
<b>ATTACHMENTS</b>	<ol style="list-style-type: none"><li>1. MAV State Council Meeting Resolutions Friday 24 June 2022 [<b>10.2.1</b> - 32 pages]</li><li>2. MAV State Council Strategic Directions June 2022 [<b>10.2.2</b> - 9 pages]</li></ol>

## 1. PURPOSE

To report to Council on the Municipal Association of Victoria's State Council meeting, held on Friday 24 June 2022.

## 2. REPORT FROM DELEGATE

Colac Otway Shire Council is a member of the Municipal Association of Victoria (MAV). The Manager Governance and Communications, Marlo Emmitt, and I, Council's appointed representative, attended the MAV State Council meeting at the Sofitel in Collins Street, Melbourne on Friday 24 June 2022.

The meeting considered approximately 80 resolutions from member Councils. Most were adopted with strong support and the adopted resolutions are contained in Attachment 1.

The meeting also considered the outstanding issues regarding the review of the MAV's Rules of Association (Rules). Various member Councils, including Colac Otway Shire, raised concerns with parts of the draft Rules.

In Colac Otway Shire's case this related to the requirement that a member Council may only submit matters to the MAV for consideration at State Council meetings, following resolution by Council. Whilst this might sound like a reasonable requirement, this effectively cuts down the opportunity to lodge a motion at a MAV State Council meeting to a two or three meeting window in a six month period.

Under the proposed Rules the agenda for a State Council meeting is to be provided approximately two months before the date of the meeting. This means that the cut off to lodge a motion with the MAV will be several weeks before that date. In turn, if the motion has to be approved at a Colac Otway Shire Council meeting, this means that with the Council's deadlines, the motion will have to be lodged at least a month before the MAV deadline. When all these periods are added together it becomes apparent that Council will need to know at least three months, and possibly four months, before the

date of the MAV State Council meeting that Colac Otway Shire wants to lodge a motion and has the motion prepared. In practical terms, this means that if an issue of significance arises within three or four months of a MAV State Council meeting, it will not be possible to take the matter to the MAV until the following meeting, some six months later.

Other Councils raised concerns about the plural voting being abolished. Basically plural voting was a system of metropolitan Councils having a double vote compared to rural Councils due to their higher populations. Colac Otway Shire probably shouldn't be concerned about the abolition of plural voting although I am not aware of specific examples where the system has resulted in a different outcome, than singular voting, on any issue of significance. There may be such an issue, but I am not aware of it.

Other concerns included the different method of electing Board members for the metropolitan and rural municipalities. Briefly, the five Board members for the metropolitan areas will be elected by all metropolitan Council's using proportional representation whilst the rural Board will be elected in a series on single member regions. In other words, metropolitan Councils will vote on five Board positions whereas rural Councils will only have a say in relation to one.

The way the meeting was conducted on 24 June 2022, meant there was no opportunity to discuss these issues unless the recommendation by the MAV was first voted down. Several Council Delegates had different options that could have been discussed but the restrictive way the MAV State Council meeting was conducted only allowed the alternative solutions to be outlined briefly, for up to two minutes, as opposition to the MAV recommendation.

It is possible that an open discussion may have led to the decision that the MAV recommendation was the best option in some cases. Having to first reject the MAV recommendation to allow a discussion was unnecessarily autocratic.



## **MAV State Council**

## **Resolutions**

**Friday 24 June 2022**



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

## Contents

<b>Consolidated motions .....</b>	<b>6</b>
C1: Economic Recovery from COVID-19.....	6
C2: Mental Health and Wellbeing .....	7
C3: Telecommunications Resilience .....	7
C4: Maternal and Child Health Service .....	8
C5: 3-year-old kindergarten reform .....	8
C6: Aged Care Services .....	8
C7: Circular Economy Funding Support.....	9
C8: Cost Shifting by Victorian Building Authority.....	9
C9: Woodfires in built up areas.....	9
C10: Coordinated and timely delivery of new infrastructure for growing communities .....	10
C11: Maintenance of State Government transport assets.....	10
C12: Weed and pest management .....	11
C13: Public Transport.....	11
C14: Active Transport.....	11
C15: School crossing supervision.....	12
C16: Local Government capacity to resource State Government services and tax collection .....	12
<b>Motions .....</b>	<b>13</b>
Mental health support for young people.....	13
Rate capping .....	13
Mental health and wellbeing .....	13
Greater funding to support transition to a circular economy .....	13
Improvements to pedestrian and cycling infrastructure .....	13
Practical Mental Health Support .....	13
Mental Health, Jobs, and Employment Pathways for Youth.....	13
Cycling and Pedestrian Safety.....	14
Sex Work Decriminalisation Act – Implementation.....	14
Comprehensive Candidate Certification Program .....	14
School Crossing Supervision.....	14
Resourcing for Kerbside Reforms.....	14
Reviewing the Maternal and Child Health Program.....	15
Early Years Infrastructure .....	15
Roads infrastructure funding.....	15
Maternal & Child Health Service.....	15
School Crossings Supervision .....	15





MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

3-year-old kindergarten reforms.....	15
Maternal and Child Health Programs.....	16
Increased mental health support.....	16
Enhancing Disaster Recovery Funding Arrangements.....	16
Local Government capacity to resource State Government services and tax collection ...	16
Active Transport .....	16
School Crossing Service - Councils to receive far share funding .....	17
Circular Economy .....	17
Uluru Statement from the Heart.....	17
Managing Noisy Miners (Birds).....	17
Pathways to Employment.....	17
Climate Emergency .....	18
Local Business Support.....	18
A fairer Environmental Effects Statement process .....	18
Develop strategic partnerships – natural resource management .....	18
Reversal of proposed funding cuts by the Australian Government to the aged care sector .....	18
Combustible Cladding Rectification Program.....	18
Victorian Building Authority's commitments on orphaned permits .....	19
Reshape the Melbourne metropolitan bus network.....	19
Improvement to the freeway entrances to towns and suburbs .....	19
Lack of Planning Controls and Infrastructure Investment.....	19
Economic Wellbeing (COVID-19 recovery).....	19
Housing Affordability.....	19
Transport Connections .....	19
Removal of Rubbish Bins from National Parks .....	20
Growth Area – Integrated Planning Process .....	20
Enforcement of Declared Noxious Weeds by Agriculture Victoria .....	20
Emergency Management – Telecommunications resilience .....	20
Supporting Australian manufactured products .....	20
Windfall Gains Tax .....	20
Affordable Housing Incentive.....	21
Roadside mowing and vegetation maintenance.....	21
Underutilised Public Land.....	21
Infrastructure funding to mitigate against climate change .....	21
Officers for the Protection of the Local Environment Program .....	21



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

Public Transport .....	21
State owned assets and land.....	22
Pest and weed management .....	22
Connectivity Improvements .....	22
Electricity Safety (Electric Line Clearance) .....	22
Inclusionary Zoning .....	22
Federal Assistance Grants .....	23
Support for the continuation of outdoor dining .....	23
Prohibition of gaming premises in close proximity to supermarkets under the Victorian planning provisions.....	23
Delivery of age care services.....	23
Orphaned Building Permits.....	23
Department of Transport, VicRoads and VicTrack Road and Trackside Maintenance Funding Increase.....	23
Extension of Powers for Council Authorised Officers under the Environment Protection Act .....	24
Integrated Transport Planning .....	24
Support for critical social planning and infrastructure.....	24
Council Price Index.....	25
Cost shifting by VBA (combustible cladding, Essential Safety Measures, orphaned building permits) .....	25
Powerful Owl Protection - Second Generation Anticoagulant Rodenticides (SGARs).....	25
Barbed Wire .....	25
Wildlife Friendly Lighting Policy .....	25
Woodfires in built up areas .....	25
Removal of Redundant Hybrid Fibre Coaxial (HFC) Cabling .....	26
Hoarding and Squalor Taskforce .....	26
Mandatory Dementia Training .....	26
State Government Levies .....	26
Banning of Motorised Bikes (Monkey Bikes).....	27
Air Pollution in Melbourne's Inner West .....	27
Integrated Bin Day App .....	27
Office of Victorian Government Architect funding reduction .....	27
Environmental, economic and social responsibility .....	28
Extension for existing use rights .....	28
Planning for future school provision.....	28
Woodfire Heater Smoke .....	28



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

<b>Late Motions.....</b>	<b>29</b>
Renewable energy - High voltage transmission line technology.....	29
High voltage transmission - community engagement policy.....	29
Provision of open spaces for government schools.....	29
Investment of additional resources for the maintenance of State Government transport assets.....	29
Afghanistan Advocacy.....	29
<b>MAV Rules Review 2021-22 - proposed changes to the MAV Rules.....</b>	<b>31</b>
Those who may submit matters for consideration at State Council.....	31
Two-year MAV memberships.....	31
Those who may nominate for the office of the MAV President.....	31
Presidential term and Board term.....	31
The size of the Board.....	31
Regional groupings of Councils.....	31
Tenure of President & Board members.....	32
By elections.....	32
Plural voting.....	32
State Council.....	32



---

## **Consolidated motions**

Under the MAV Rules 2013, matters submitted by Members for consideration at a meeting of the State Council which relate to the same subject may be consolidated into a single matter (Rule 21.1.4).

### **C1: Economic Recovery from COVID-19**

---

#### **Resolution**

That the MAV calls on the Victorian Government to partner with local government to introduce a range of measures to further stimulate the economy and improve employment growth by establishing a dedicated and ongoing COVID-19 economic response package that:

1. Provides funding to councils to continue the success of the outdoor dining program to pay for infrastructure and to be able to continue to subsidise costs to businesses for another three years and transition the temporary arrangements into more permanent structures where this is appropriate.
2. Provides ongoing investment in programs that promote increased visitation and economic growth in activity centres.
3. Establishes a dedicated and ongoing COVID-19 economic response package for business that involves further payroll tax relief and additional business grants and development programs that support business recovery and growth.
4. Develops local job prospectuses to improve and attract employment diversification.
5. Improves access to technology to encourage business relocation.
6. Promotes '20-minute city thinking'.

#### **Consolidated motions:**

- Local Business Support - Brimbank City Council
- Economic Wellbeing (COVID-19 Recovery) - Maribyrnong City Council
- Support the continuation of outdoor dining - Melbourne City Council



---

## C2: Mental Health and Wellbeing

---

### Resolution

That the MAV calls on the Premier and Ministers for Mental Health and Local Government to:

1. Acknowledge the Victorian Government's commitment to implementing all recommendations of the Royal Commission into Victoria's Mental Health System including the establishment of up to 60 new adult Mental Health services and 13 infant, child, and youth mental health services (delivered through partnerships) across the state.
2. Request the Victorian Government to formally engage with local government in the design and implementation of initiatives recommended by the RCVMHS, particularly: 'Community Collectives' (Social Inclusion Action Groups).
  - a. the development of the Mental health and Wellbeing Plan with particular focus on services and opportunities for young people including employment pathways.
  - b. service developments drawing on councils' knowledge of local community needs and service gaps and opportunities through community and sporting groups.
  - c. exploration of partnership opportunities to ensure young people in isolated and public transport deprived areas and overseas students residing in Victoria have access to appropriate and relevant mental health services.

### Consolidated motions:

- Mental Health Support for Young People - Bayside City Council
- Mental Health and Wellbeing - Brimbank City Council
- Practical Mental Health - Frankston City Council
- Mental Health – Jobs and Employment Pathways for Youth - Maribyrnong City Council
- Increased Mental Health Support - Nillumbik Shire Council

---

## C3: Telecommunications Resilience

---

### Resolution

That the MAV calls on the Victoria Government to:

1. strongly advocate on the expansion of the Federal Government's Mobile Black Spot Program, and fair and equitable access to the NBN across regional Victoria.
2. work together with all relevant bodies including emergency response agencies, relevant telecommunications authorities and at all levels of Government across Australia to come together and establish an effective system of backup telecommunications that can function during and after an emergency or on-going natural disaster situation.

### Consolidated motions:

- Emergency Management - Telecommunications resilience - Mitchell Shire
- Connectivity Improvements - South Gippsland Shire



---

## C4: Maternal and Child Health Service

---

### Resolution

That the MAV calls on the Victorian Government to:

1. review the outdated funding model for Maternal Child Health (MCH) Service and restore funding to 50-50 between councils and the Victorian Government.
2. review Key Age and Stage Framework including appointment times (increase appointment time) to cater for the cumulative increases in responsibilities added over the past decade by the end of 2023
3. review and update a MCH workforce strategy to maintain ongoing delivery of the MCH service.
4. Funding a new IT infrastructure system, to replace the outdated not fit for purpose Child Development Information System (CDIS) database by the end of 2024.

### Consolidated motions:

- Reviewing the Maternal and Child Health Program - City of Whittlesea
- Maternal and Child Health Service - City of Boroondara
- Maternal and Child Health Programs - Nillumbik Shire Council

---

## C5: 3-year-old kindergarten reform

---

### Resolution

That the MAV calls for increased funding by the State Government to ensure the state funded kinder reform agenda is successfully implemented, including the increased demand for infrastructure provision to meet community needs.

### Consolidated motions:

- Early Years Infrastructure - South Gippsland Shire
- 3-year-old kindergarten reforms - Nillumbik Shire Council

---

## C6: Aged Care Services

---

### Resolution

That the MAV calls on the Commonwealth Government to

1. recognise the significant role Local Government has in the delivery of age care services in Victoria.
2. review the proposed future funding model of the new Support at Home Program.

### Consolidated motions:

- Reversal of proposed funding cuts by the Australian Government to the aged care sector - Hobsons Bay City Council
- Delivery of aged care services - Nillumbik Shire Council



---

## **C7: Circular Economy Funding Support**

---

### **Resolution**

That the MAV calls on the Victorian Government for increased investment in the circular economy through dedicated funding streams to industry and local government to support local processing solutions, sector innovation and market development in the waste and recycling sectors.

### **Consolidated motions:**

- Greater funding to support the transition to a circular economy - City of Yarra
- Circular economy - City of Stonnington

---

## **C8: Cost Shifting by Victorian Building Authority**

---

### **Resolution**

That the MAV calls on the Victorian Government to abandon the transfer of responsibility of the combustible cladding audits, oversight of the Essential Safety Measures maintenance regime, and orphaned building permits from the Victorian Building Authority (VBA) to local government and, in relation to orphaned building permits, the VBA use its powers under existing legislation to appoint a Manager for any Private Building Surveyor (PBS) business, if the PBS's registration has been suspended or cancelled.

### **Consolidated motions:**

- Combustible cladding rectification program - Hobsons Bay City Council
- Victorian Building Authority's commitments on orphaned permits - Hobsons Bay City Council
- Orphaned building permits - Yarra Ranges Council
- Cost shifting by VBA (combustible cladding, Essential Safety Measures, orphaned building permits) - City of Stonnington

---

## **C9: Woodfires in built up areas**

---

### **Unconsolidated**

### **Refer resolutions:**

- Woodfires in built up areas - City of Yarra
- Woodfire heater smoke - Glen Eira City Council



---

## **C10: Coordinated and timely delivery of new infrastructure for growing communities**

---

### **Resolution**

That the MAV calls on the State Government to:

1. prioritise the timely planning and consistent delivery of infrastructure and services that are the responsibility of its departments and agencies during the early phases of any new development
2. address the lack of investment in state infrastructure to support the increased urban development (including renewables, power, water, sewer, etc)
3. develop planning controls to manage the cumulative impacts of fast paced development to improve the liveability of the public realm and the sustainability of the community.

### **Consolidated motions:**

- Lack of Planning Controls and Infrastructure Investment - Bayside City Council
- Growth Area – Integrated Planning Process - Mitchell Shire Council

---

## **C11: Maintenance of State Government transport assets**

---

### **Resolution**

That the MAV calls on the State Government to provide:

1. increased funding for the Department of Transport (DoT) and VicTrack to facilitate appropriate ongoing maintenance of their assets (including weed and vegetation management, litter pickup and graffiti removal) along arterial roads and freeways and rail and tram corridors
2. the option for this maintenance work to be undertaken by councils, should they choose to do so on behalf of DoT, under an indexed full cost recovery model

### **Consolidated motions:**

- Improvement to the freeway entrances to towns and suburbs - Hobsons Bay City Council
- Roadside mowing and vegetation maintenance - Wodonga City Council
- Department of Transport, VicRoads and VicTrack Road and Trackside Maintenance Funding Increase - Maroondah City Council
- Investment of additional resources for the maintenance of State Government transport assets - City of Port Phillip





MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

## C12: Weed and pest management

---

### Resolution

That the MAV calls on the Victorian Government to:

1. acknowledge and address the significant weed infestations on Crown land and land under the control of various Government agencies and Departments
2. increase funding support for enforcement of declared noxious weeds by Agriculture Victoria and for the delivery of Pest and Weed mitigation and management programs, including strategic research and programs that help farmers manage weeds and pests on their properties.

### Consolidated motions:

- Enforcement of Declared Noxious Weeds by Agriculture Victoria - Mitchell Shire Council
- Weed and pest management - South Gippsland Shire Council

---

## C13: Public Transport

---

### Resolution

That the MAV calls on the Victorian Government to improve public transport, including:

1. provision of better bus routes, cleaner and more frequent trains and trams, better integrated transport hubs, and improving connections to areas that are underserved
2. providing the option for people to travel on buses with bikes
3. investigating activating river transport as an option where it might be viable to do so.

### Consolidated motions:

- Reshape the Melbourne metropolitan bus network - Hobsons Bay City Council
- Transport Connections - Maribyrnong City Council
- Public Transport - South Gippsland Shire

---

## C14: Active Transport

---

### Resolution

The MAV calls on the Victorian Government to support active transport through:

1. Providing funding to councils to fund and deliver pedestrian and cycling improvement projects throughout all of Victoria
2. Provide funding to support a safer and accessible active transport network
3. Improve the connectivity of active transport routes on State Government land with local transport networks to create and extend active transport networks,
4. Including separated cycle ways and more bicycle storage at train stations and activity centres to encourage sustainable and integrated transport options
5. Ensure that active transport is included in Victoria's integrated transport plan as recommended by Infrastructure Victoria in the 'Victoria's Infrastructure Strategy 2021- 2051'.

### Consolidated motions:

- Improvements to pedestrian and cycling infrastructure - Hobsons Bay City Council
- Cycling and Pedestrian Safety - Maribyrnong City Council



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

- 
- Active Transport - Wyndham City Council

### **C15: School crossing supervision**

---

#### **Resolution**

That the MAV seeks a commitment from the State Government to fully fund school crossing supervision and not impose costs on ratepayers and residents for a service that is unrelated to core Local Government functions.

Failing this, call on State Government to provide fair share funding for the provision of the school crossing supervisor service.

#### **Consolidated motions:**

- School Crossing Supervision - Mitchell Shire Council
- School Crossings Supervision - Monash City Council
- School Crossing Service - Councils to receive fair share funding - City of Stonnington

### **C16: Local Government capacity to resource State Government services and tax collection**

---

#### **Resolution**

That the MAV calls on the State Government to provide Local Government Authorities the financial funding support required to continue providing the services to the community that the State Government has cost-shifted its responsibilities, in part or full, to Local Government over time including where local government collects levies for the State Government. These critical services are deemed integral to the health and wellbeing of the community as demonstrated consistently through a wide range of community engagement over a long period of time and should have remained either cost neutral to Local Government, or the greater cost burden remaining with State Government.

#### **Consolidated motions:**

- State Government Levies - Frankston City Council
- Local Government capacity to resource State Government services and tax collection - Maroondah City Council



---

## **Motions**

### **Mental health support for young people**

---

**Submitting Council:** Bayside City Council

**Consolidated**

Refer to C2: Mental Health and Wellbeing.

### **Rate capping**

---

**Submitting Council:** Bayside City Council

**Resolution**

That the MAV requests the Minister for Local Government takes into account the volatility in CPI when setting rates and seeks engagement with the sector prior to the next setting of the rate cap.

### **Mental health and wellbeing**

---

**Submitting Council:** Brimbank City Council

**Consolidated**

Refer to C2: Mental Health and Wellbeing.

### **Greater funding to support transition to a circular economy**

---

**Submitting Council:** City of Yarra

**Consolidated**

Refer to C7: Circular Economy Funding Support.

### **Improvements to pedestrian and cycling infrastructure**

---

**Submitting Council:** Hobsons Bay City Council

**Consolidated**

Refer to C14: Active Transport.

### **Practical Mental Health Support**

---

**Submitting Council:** Frankston City Council

**Consolidated**

Refer to C2: Mental Health and Wellbeing.

### **Mental Health, Jobs, and Employment Pathways for Youth**

---

**Submitting Council:** Maribyrnong City Council

**Consolidated**

Refer to C2: Mental Health and Wellbeing.



---

## **Cycling and Pedestrian Safety**

**Submitting Council:** Maribyrnong City Council

### **Consolidated**

Refer to C14: Active Transport.

---

## **Sex Work Decriminalisation Act – Implementation**

**Submitting Council:** Maribyrnong City Council

### **Resolution**

That MAV calls on the Victoria Government to:

1. undertake genuine collaboration with Local Government to implement the objectives and clarify compliance roles in the Sex Work Decriminalisation Act; and
2. provide appropriate levels of funding to assist Council in not only the implementation of the planning and regulatory framework, but also to provide appropriate training for staff.

---

## **Comprehensive Candidate Certification Program**

**Submitting Council:** Strathbogie Shire Council

### **Resolution**

That the MAV work in partnership with the State Government to:

1. replace the candidate certification program used for the 2020 General Election with a mandatory comprehensive candidate training program for the 2024 general election cycle to ensure all prospective candidates have a deep and clear understanding of the role of a councillor and council to drive sector capability and good governance
2. develop and deliver a state-wide councillor induction program for the 2024 general election cycle that is driven by Local Government Victoria, delivered on a regional basis, and funded by the State to ensure all councillors receive the same induction training in a way that is efficient and helps build relationships and support networks across the state.

---

## **School Crossing Supervision**

**Submitting Council:** Mitchell Shire Council

### **Consolidated**

Refer to C15: School crossing supervision.

---

## **Resourcing for Kerbside Reforms**

**Submitting Council:** Mitchell Shire Council

### **Resolution**

That the MAV call on the State Government to increase funding support to local government for the introduction of and ongoing implementation of kerbside reforms.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

## Reviewing the Maternal and Child Health Program

**Submitting Council:** City of Whittlesea

**Consolidated**

Refer to C4: Maternal and Child Health Service

## Early Years Infrastructure

**Submitting Council:** South Gippsland Shire Council

**Consolidated**

Refer to C5: 3-year-old kindergarten reform.

## Roads infrastructure funding

**Submitting Council:** South Gippsland Shire Council

**Resolution**

The MAV calls on the Victorian Government to:

1. support the advocacy requests outlined in MAV's Transport Advocacy Strategy 2022 'Locals Know What Locals Need' Rural and Regional Overview:
  - a. Deliver \$20 million annually for a local road blackspot treatment and prevention program.
  - b. Expand the current Rural Roads Support package.
  - c. Deliver \$11 million over two years for a black hole funding program,
2. re-instate the Fixing Country Roads program to assist councils to improve the current state of their local roads to enhance the connectivity, reliability, and efficiency of regional communities.

## Maternal & Child Health Service

**Submitting Council:** City of Boroondara

**Consolidated**

Refer to C4: Maternal and Child Health Service.

## School Crossings Supervision

**Submitting Council:** Monash City Council

**Consolidated**

Refer to C15: School crossing supervision.

## 3-year-old kindergarten reforms

**Submitting Council:** Nillumbik Shire Council

**Consolidated.**

Refer to C5: 3-year-old kindergarten reform



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

## Maternal and Child Health Programs

**Submitting Council:** Nillumbik Shire Council

**Consolidated**

Refer to C4: Maternal and Child Health Service.

---

## Increased mental health support

**Submitting Council:** Nillumbik Shire Council

**Consolidated**

Refer to C2: Mental Health and Wellbeing.

---

## Enhancing Disaster Recovery Funding Arrangements

**Submitting Council:** Yarra Ranges Council

**Resolution**

That the MAV advocate for State and Federal funding agencies administering the Disaster Recovery Funding Arrangements to commit to adjusting the funding arrangements to allow for:

1. Greater flexibility to recovery funding support for medium and largescale disaster events, that allows for quicker tailored responses to local disaster impacts.
2. Funding flexibility that enables opportunities to address early establishment of recovery needs for impacted councils and their communities, in order to support a resilient and enhanced recovery effort.
3. Provide greater funding clarity that doesn't link funding to a budgetary cycle but instead links funding to the scale and type of disaster experienced.
4. Adopt a more streamlined and pragmatic approach to claims assessment and approval to allow funds to flow more quickly back to councils to reimburse response, relief, and recovery activities.

---

## Local Government capacity to resource State Government services and tax collection

**Submitting Council:** Maroondah City Council

**Resolution**

That the MAV calls on the State Government to provide Local Government Authorities the financial funding support required to continue providing the services to the community that the State Government has cost-shifted its responsibilities, in part or full, to Local Government over time. These critical services are deemed integral to the health and wellbeing of the community as demonstrated consistently through a wide range of Community engagement over a long period of time and should have remained either cost neutral to Local Government, or the greater cost burden remaining with State Government.

---

## Active Transport

**Submitting Council:** Wyndham City Council

**Consolidated**

Refer to C14: Active Transport.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

### **School Crossing Service - Councils to receive far share funding**

**Submitting Council:** City of Stonnington

**Consolidated**

Refer to C15: School crossing supervision.

### **Circular Economy**

**Submitting Council:** City of Stonnington

**Consolidated**

Refer to C7: Circular Economy Funding Support.

### **Uluru Statement from the Heart**

**Submitting Council:** Bayside City Council

**Resolution**

That the MAV call upon all Victorian local government authorities to consider supporting the Uluru Statement from the Heart which calls on the Australian people to walk with First Nations in a people's movement for Voice, Treaty and Truth, and encourage all Councils to write to their respective Federal Member of Parliament calling on the Australian Government to support Constitutional Recognition for Aboriginal and Torres Strait Islander peoples and the key principles of the "Uluru Statement from the Heart".

### **Managing Noisy Miners (Birds)**

**Submitting Council:** Bayside City Council

**Resolution**

That the MAV calls on the State Government as part of the review of the (Victorian) *Wildlife Act 1975*, to address the increasing issue of Noisy Miners and their negative impact on other native birds.

### **Pathways to Employment**

**Submitting Council:** Brimbank City Council

**Resolution**

That the MAV write to the Victorian Government calling for the:

1. Establishment of a dedicated and ongoing Community Resilience and Fairness Response Package to ensure our most vulnerable community members are protected from the worst of the impacts of a prolonged pandemic, particularly the youth.
2. Increased funding for local learning and job preparation programs and initiatives designed to reduce unemployment.
3. Reinvigorate, invest in and grow local manufacturing.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

## Climate Emergency

**Submitting Council:** Brimbank City Council

### Resolution

That the MAV ask the State Government to work closely with the new Federal Government to:

1. Establish a National Renewable Energy Target of 100% for 2030,
2. Declare a price on carbon pollution, preferably the Australian Carbon Dividend Plan, as soon as possible, and
3. Replicate the success of the 20 million Trees program to re-establish green corridors, urban forests and threatened ecological communities.

---

## Local Business Support

**Submitting Council:** Brimbank City Council

### Consolidated

Refer to C1: Economic Recovery from COVID-19.

---

## A fairer Environmental Effects Statement process

**Submitting Council:** East Gippsland Shire Council

### Resolution

That the MAV advocate to the Victorian Government to implement reforms to make the Environmental Effects Statement (EES) process fairer and less costly for local government and the community whilst continuing to maintain the ability to fully participate.

---

## Develop strategic partnerships – natural resource management

**Submitting Council:** East Gippsland Shire Council

### Resolution

That the MAV advocate for agency and stakeholder collaboration to support the management of natural resources in coastal and mountain areas across the State through developing and implementing a multi-disciplinary approach for natural resource management policy.

---

## Reversal of proposed funding cuts by the Australian Government to the aged care sector

**Submitting Council:** Hobsons Bay City Council

### Consolidated

Refer to C6: Aged Care Services.

---

## Combustible Cladding Rectification Program

**Submitting Council:** Hobsons Bay City Council

### Consolidated

Refer to C8: Cost Shifting by Victorian Building Authority.





MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

### **Victorian Building Authority's commitments on orphaned permits**

**Submitting Council:** Hobsons Bay City Council

**Consolidated**

Refer to C8: Cost Shifting by Victorian Building Authority.

---

### **Reshape the Melbourne metropolitan bus network**

**Submitting Council:** Hobsons Bay City Council

**Consolidated**

Refer to C13: Public Transport.

---

### **Improvement to the freeway entrances to towns and suburbs**

**Submitting Council:** Hobsons Bay City Council

**Consolidated**

Refer to C11: Maintenance of State Government transport assets.

---

### **Lack of Planning Controls and Infrastructure Investment**

**Submitting Council:** Bayside City Council

**Consolidated**

Refer to C10: Coordinated and timely delivery of new infrastructure for growing communities.

---

### **Economic Wellbeing (COVID-19 recovery)**

**Submitting Council:** Maribyrnong City Council

**Consolidated**

Refer to C1: Economic Recovery from COVID-19.

---

### **Housing Affordability**

**Submitting Council:** Maribyrnong City Council

**Resolution**

That the MAV calls on the Victorian Government to support Big Housing Build Projects that:

1. Provide social, public, and affordable housing for low-income workers such as creative industries and hospitality.
2. Promote the development of social, public, and affordable housing growth along transport corridors.
3. Use State Government owned land for new social, public, and affordable housing projects.

---

### **Transport Connections**

**Submitting Council:** Maribyrnong City Council

**Consolidated**

Refer to C13: Public Transport.



---

### **Removal of Rubbish Bins from National Parks**

**Submitting Council:** Mitchell Shire Council

**Resolution**

That the MAV call on the State Government to increase resourcing for compliance and education to ensure that visitors take their rubbish home and dispose of it lawfully when visiting National and State Parks.

---

### **Growth Area – Integrated Planning Process**

**Submitting Council:** Mitchell Shire Council

**Consolidated**

Refer to C10: Coordinated and timely delivery of new infrastructure for growing communities.

---

### **Enforcement of Declared Noxious Weeds by Agriculture Victoria**

**Submitting Council:** Mitchell Shire Council

**Consolidated**

Refer to C12: Weed and pest management.

---

### **Emergency Management – Telecommunications resilience**

**Submitting Council:** Mitchell Shire Council

**Consolidated**

Refer to C3: Telecommunications Resilience.

---

### **Supporting Australian manufactured products**

**Submitting Council:** Mitchell Shire Council

**Resolution**

That the MAV call on the State Government to explore the various ways it could support Australian manufactured products through its tender process. As part of this process, seek guidance from both State and Federal Governments and appropriate Local Government authorities on ways in which this can be achieved.

---

### **Windfall Gains Tax**

**Submitting Council:** Mitchell Shire Council

**Resolution**

That the MAV call on the State Government to ensure that funding made available through Windfall Gains Tax is distributed to LGAs where the tax has been generated to assist Councils with funding local community infrastructure projects.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

### **Affordable Housing Incentive**

**Submitting Council:** Wodonga Council

**Resolution**

That the MAV calls on the Federal and Victorian governments to address the critical shortage of affordable housing in Victoria through regulatory reform that incentivises provision of affordable homes within new developments at all scales.

---

### **Roadside mowing and vegetation maintenance**

**Submitting Council:** Wodonga Council

**Consolidated**

Refer to C11: Maintenance of State Government transport assets.

---

### **Underutilised Public Land**

**Submitting Council:** Wodonga Council

**Resolution**

That the MAV calls on the Victorian Government to facilitate economic growth by reviewing and unlocking underutilised government land parcels for development for a range of economic and community processes.

---

### **Infrastructure funding to mitigate against climate change**

**Submitting Council:** Surf Coast Shire Council

**Resolution**

That the MAV advocates to the State Government to establish a funding stream for local governments to improve the climate resilience of ageing infrastructure that will be impacted by future extreme weather events due to climate change.

---

### **Officers for the Protection of the Local Environment Program**

**Submitting Council:** City of Whittlesea

**Resolution**

That the MAV State Council advocates to the State Government for the Environment Protection Agency to appoint an Officer for the Protection of the Local Environment (OPLE) to each local council in Victoria to ensure a consistent coordinated approach to education and enforcement of State and Local Government environment protection matters.

---

### **Public Transport**

**Submitting Council:** South Gippsland Shire Council

**Consolidated**

Refer to C13: Public Transport.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

### State owned assets and land

---

**Submitting Council:** South Gippsland Shire Council

**Resolution**

That the MAV advocate for responsive maintenance and management for state owned and/or managed assets on crown land (such as reserves, halls, boat ramps, etc.), so that they are suitably maintained for the community's use.

---

### Pest and weed management

---

**Submitting Council:** South Gippsland Shire Council

**Consolidated**

Refer to C12: Weed and pest management.

---

### Connectivity Improvements

---

**Submitting Council:** South Gippsland Shire Council

**Consolidated**

Refer to C3: Telecommunications Resilience.

---

### Electricity Safety (Electric Line Clearance)

---

**Submitting Council:** City of Boroondara

**Resolution**

That the MAV:

1. Advocate to the State Government for a moratorium on the issuing of infringement notices to councils for failing to maintain the minimum clearance distances between vegetation and powerlines as prescribed by the Electricity Safety (Electric Line Clearance) Regulations 2020.
2. Write to the Victorian State Government seeking the inclusion of mandatory aerial bundled cabling as an industry standard for powerline network upgrade works in Victoria within the Electricity Distribution Code of Practice as required under the *Essential Services Commission Act 2021*.

---

### Inclusionary Zoning

---

**Submitting Council:** Greater Bendigo City Council

**Resolution**

That the MAV advocate for the introduction of State-wide mandatory inclusionary zoning provisions into planning schemes, where appropriate.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

### **Federal Assistance Grants**

**Submitting Council:** Mildura Rural City Council

**Resolution**

That MAV call on the Federal Government to commit to sustainability of councils through the restoration of Federal Assistance Grants Programme at 1% of Commonwealth taxation revenue.

---

### **Support for the continuation of outdoor dining**

**Submitting Council:** City of Melbourne

**Consolidated**

Refer to C1: Economic Recovery from COVID-19.

---

### **Prohibition of gaming premises in close proximity to supermarkets under the Victorian planning provisions**

**Submitting Council:** Kingston City Council

**Resolution**

That the MAV advocate for changes to the Victorian Planning Provisions that would prohibit the use of land for a Supermarket under the Commercial 2 Zone in situations it is seeking to establish in close proximity to an established Gaming premises.

---

### **Delivery of age care services**

**Submitting Council:** Nillumbik Shire Council

**Consolidated**

Refer to C6: Aged Care Services.

---

### **Orphaned Building Permits**

**Submitting Council:** Yarra Ranges Council

**Consolidated**

Refer to C8: Cost Shifting by Victorian Building Authority.

---

### **Department of Transport, VicRoads and VicTrack Road and Trackside Maintenance Funding Increase**

**Submitting Council:** Maroondah City Council

**Consolidated**

Refer to C11: Maintenance of State Government transport assets.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

## Extension of Powers for Council Authorised Officers under the Environment Protection Act

**Submitting Council:** Maroondah City Council

### Resolution

That the MAV calls on the State Government to amend the *Environment Protection Act 2017* to allow Council Authorised Officers to have extended powers to instigate proceedings against offenders under s286 & s287 of the Act, in particular for non-compliance with Improvement and Prohibition Notices issued for:

1. unreasonable noise from residential construction sites, and
2. potential impact to human health and the environment from onsite wastewater systems.

---

## Integrated Transport Planning

**Submitting Council:** Wyndham City

### Resolution

The MAV calls on the Victorian Government to fully implement the recommendations of the Victorian Auditor General's report Integrated Transport Planning (4 August 2021) and to:

1. take steps to meet their obligations under the *Transport Integration Act 2010* to ensure the integrated planning and management of the State's transport system,
2. ensure the Department of Transport (DOT) improves the transparency of current and future transport plans including better engagement with councils and community,
3. work to ensure individual State transport projects are fully integrated into the local transport network, environment, and place to optimise and capture community benefits.
4. provide an update on how the new DOT structure will ensure a regional view and approach to transport planning.

---

## Support for critical social planning and infrastructure

**Submitting Council:** Wyndham City

### Resolution

The MAV calls on the Victorian Government to provide greater support for councils in their planning and forward budgeting of critical social infrastructure projects (including libraries and aquatic centres - that our communities need) through an ongoing social infrastructure funding stream and establishment of funding agreements that:

1. enable councils to plan and deliver a pipeline of critical social infrastructure projects their community needs, when they need it; and
2. deliver long-term funding certainty and provide flexible funding arrangements for councils.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

## Council Price Index

**Submitting Council:** City of Stonnington

### Resolution

The MAV calls on the State Government to develop and implement a price that reflects the cost pressures faced by local government (including infrastructure, materials costs, service contracts and wage costs) and is used to inform the annual rate cap decision by the Minister for Local Government.

## Cost shifting by VBA (combustible cladding, Essential Safety Measures, orphaned building permits)

**Submitting Council:** City of Stonnington

### Consolidated

Refer to C8: Cost Shifting by Victorian Building Authority.

## Powerful Owl Protection - Second Generation Anticoagulant Rodenticides (SGARs)

**Submitting Council:** Bayside City Council

### Resolution

That the MAV calls on the State Government to recognise the harmful impacts of second-generation rodenticides and prohibits their use in Victoria and establish a taskforce to investigate and promote alternative methods of rodent management.

## Barbed Wire

**Submitting Council:** Bayside City Council

### Resolution

That the MAV calls on metropolitan municipalities to consider adopting a policy to manage the use of barbed wire or eliminate where possible the use of barbed wire on Council owned land to reduce impacts to native wildlife.

## Wildlife Friendly Lighting Policy

**Submitting Council:** Bayside City Council

### Resolution

That the MAV calls on all Victorian councils to consider developing a wildlife friendly lighting policy.

## Woodfires in built up areas

**Submitting Council:** City of Yarra

### Resolution

That the MAV advocate to the State Government for stronger guidelines around the installation of new wood heaters in built up metropolitan areas through the planning process including the ability to not allow them.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

## Removal of Redundant Hybrid Fibre Coaxial (HFC) Cabling

**Submitting Council:** Frankston City Council

### Resolution

That MAV advocates to NBN Co., Optus and the Australian Government seeking a commitment to fully fund and remove decommissioned and redundant overhead Hybrid Fibre Coaxial (HFC) cabling located on residential, business, and industrial precinct streets following the successful rollout of the national broadband network.

---

## Hoarding and Squalor Taskforce

**Submitting Council:** Frankston City Council

### Resolution

That the MAV:

1. Notes that in 2020, hoarding was a possible contributing factor in 28% of preventable fatal fire incidents in Victoria.
2. Notes hoarding is a highly complex condition requiring professionals from different sectors to work together; and
3. Advocates to State Government to re-establish the Hoarding and Squalor Taskforce previously, coordinated by Department of Health, to ensure professional guidance in the effective treatment and risk reduction of hoarding.

---

## Mandatory Dementia Training

**Submitting Council:** Frankston City Council

### Resolution

That the MAV:

1. Seeks confirmation of Federal Government's commitment to ensuring dementia training is deemed mandatory as an appropriate regulatory lever to build capability for both New and Existing Aged Care Workers.
2. Seeks clarity of funding arrangements for mandatory training requirements.
3. Notes the Aged Care sector's capacity to respond to older people's dementia can be significantly improved through funded mandatory training which may include:
  - a. provision of 'Support to People Living with Dementia' module as a Core part of the Course for new Aged Care Workers.
  - b. provision of opportunities for dementia training for existing Aged Care Workers similar to the module 'Provide Support to People Living with Dementia' and including regular refresher training as part of organisational compliance; and
  - c. advocates to State Government for the development of a guide for families supporting a family member with dementia in their home environment.

---

## State Government Levies

**Submitting Council:** Frankston City Council

### Consolidated

Refer to C16: Local Government capacity to resource State Government services and tax collection.





MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

### **Banning of Motorised Bikes (Monkey Bikes)**

**Submitting Council:** Frankston City Council

**Resolution**

That the MAV works with and advocates to the Victorian Government and Victoria Police:

1. To ban motorised bikes like (illegal) monkey bikes and dirt bikes in public open spaces and reserves, except where such bikes are specifically allowed, and effectively enforce any such ban.
2. To run an education campaign to remind that only lawfully registered motorised bikes may be ridden on public roads.

---

### **Air Pollution in Melbourne's Inner West**

**Submitting Council:** Maribyrnong City Council

**Resolution**

That the MAV calls on the Victorian Government to continue the implementation of the recommendations of the "Air Pollution in Melbourne's Inner West; taking direct action to reduce our community's exposure" Report by the Inner West Air Quality Community Reference Group.

---

### **Integrated Bin Day App**

**Submitting Council:** City of Whittlesea

**Resolution**

That the MAV State Council advocates to the State Government for the delivery of an integrated Bin Day App that:

1. Allows all residents of Victoria equal access to accurate information about bin collection days; and
2. Supports the standardisation of kerbside bin contents, through consistent and timely messaging, eliminating confusion and ensuring quality product to recyclers; and
3. Integrates into the Service Victoria App.

---

### **Office of Victorian Government Architect funding reduction**

**Submitting Council:** City of Boroondara

**Resolution**

That the MAV call on the Victorian Government to:

1. Immediately reinstate the full \$1.3 million funding to the Office of the Victorian Government Architect (OVGA).
2. Continue to fully fund the role of the OVGA to provide independent expert architectural advice to improve the outcome for State Government and State Significant projects.
3. Make publicly available the advice of the OVGA where they have reviewed State Government and State Significant projects.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

### **Environmental, economic, and social responsibility**

---

**Submitting Council:** Nillumbik Shire Council

**Resolution**

That the MAV expands and places measurable weighting on environmental, economic and social responsibility parameters as part of the criteria in awarding public tenders.

### **Extension for existing use rights**

---

**Submitting Council:** Yarra Ranges Council

**Resolution**

That the MAV advocate to the Department of Environment, Land, Water and Planning to make an amendment to Clause 63.06 of the Planning Scheme that exempts businesses from the current expiry timeframe to exclude the period where the State of Emergency for the coronavirus pandemic was in place from the calculated 15-year period.

### **Planning for future school provision**

---

**Submitting Council:** Wyndham City

**Resolution**

The MAV calls on the Victorian Government and the State Opposition to ensure that Victoria has the government schools that families will need to meet their educational needs as our State continues to grow, by committing to:

1. a sustained program of building of new schools and upgrades to existing schools beyond 2026.
2. a target for new schools to be built by 2031.

### **Woodfire Heater Smoke**

---

**Submitting Council:** Glen Eira City Council

**Resolution**

That the MAV:

1. coordinates a formal offer for councils to work with the Environment Protection Authority (EPA) to enable Council land and assets to be used for air monitoring; and
2. advocates to the State Government for the following measure and regulatory change relating to woodfire heating:
  - a. the expansion of the EPA Ambient Air Network (including sensors to provide more localised data for each Local Government area) which will enable greater, fine-grained coverage.
3. support for households with no other main form of heating to promptly switch to electric heating options through the introduction of a bulk-buy, subsidy or other incentive scheme.



---

## **Late Motions**

### **Renewable energy - High voltage transmission line technology**

---

**Submitting Council:** Moorabool Shire Council

#### **Resolution**

That the MAV calls on the State Government to deliver better, more sustainable outcomes for the transition to renewable energy by introducing a policy that all future high-voltage transmission projects will be required to investigate the lowest social, environmental, and economic impact technologies and design options available.

### **High voltage transmission - community engagement policy**

---

**Submitting Council:** Moorabool Shire Council

#### **Resolution**

The MAV calls on the State Government to deliver better, more sustainable outcomes for the environment and local communities being affected by the delivery of new renewable energy infrastructure, by developing a state policy for conducting and integrating community engagement findings when planning for and delivering renewable energy high voltage transmission infrastructure projects.

### **Provision of open spaces for government schools**

---

**Submitting Council:** City of Port Phillip

#### **Resolution**

That the MAV advocate to the State Government that they provide adequate open space for Government schools, or work with councils to ensure an agreement is in place regarding the use of council-managed public open space prior to the delivery of Government schools.

### **Investment of additional resources for the maintenance of State Government transport assets**

---

**Submitting Council:** City of Port Phillip

#### **Consolidated**

Refer to C11: Maintenance of State Government transport assets.

### **Afghanistan Advocacy**

---

**Submitting Council:** Greater Dandenong Council

#### **Resolution**

That the MAV call upon the Federal Government to:

1. Increase Australia's capacity and speed to evacuate as many people at risk within Afghanistan. This includes those who have worked for, or assisted, the Australian Government and Australian organisations, as well as, human rights defenders and women and girls who are now threatened;
2. Urge neighbouring governments in the region to keep their borders open for those fleeing Afghanistan;



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

- 
3. Increase our resettlement places for Afghan refugees by 20,000 additional places per year for the next four years;
  4. Immediately increase Australian aid to the region to support organisations within Afghanistan and in neighbouring countries assisting those who have fled;
  5. Ensure that people whose asylum claims in Australia have been previously rejected be supported to submit new claims in the light of the changed circumstances in Afghanistan;
  6. Given the situation in Afghanistan will remain volatile for years to come, the Federal Government needs to provide much needed certainty to 4,300 Afghans currently on temporary protection visas by granting them permanent protections;
  7. Assist Afghan Australians, including people with temporary and permanent visas, with urgent family reunion applications for relatives who are at particular risk. There is considerable national interest and support for Australia to take a leading role in responding to the crisis.



---

## **MAV Rules Review 2021-22 - proposed changes to the MAV Rules**

### **Those who may submit matters for consideration at State Council**

---

#### **Resolution**

That MAV Rules require member councils to submit matters for consideration at meetings of State Council and to do so by Council resolution.

### **Two-year MAV memberships**

---

#### **Resolution**

That MAV Rules require Councils to commit to two-year memberships of the MAV, payable by two annual instalments and to require a Council which intends to withdraw from financial membership of the MAV to provide notice of such intention no later than 31 December in the year prior to membership renewal.

### **Those who may nominate for the office of the MAV President**

---

#### **Resolution**

That MAV Rules require councillors nominating for the office of MAV President to be the nominated MAV representative of their council.

### **Presidential term and Board term**

---

#### **Resolution**

That the MAV Rules provide for elections:

1. for the office of President every two years
2. of MAV Board members every two years.

### **The size of the Board**

---

#### **Resolution**

That the MAV Rules provide for a Board with a President and ten Board members with five Board members elected from rural and regional Councils and five Board members elected from metropolitan Councils.

### **Regional groupings of Councils**

---

#### **Resolution**

That the MAV Rules maintain an equal number of regional groupings of rural and metropolitan councils for the purpose of electing Board members to the MAV Board.



MAV STATE COUNCIL  
RESOLUTIONS  
Friday 24 June 2022

---

## Tenure of President & Board members

---

### Resolution

That the MAV Rules provide for a cap on:

1. Presidential service of four consecutive terms.
2. Board service of four consecutive terms.

## By elections

---

### Resolution

That the MAV Rules provide:

1. A casual vacancy in the office of President occurring after 31 August in the year immediately preceding the election for the MAV President is to be filled by the Deputy President from the same general grouping of the Immediate Past President (Metropolitan or Rural) and if that Deputy President is no longer a member of the Board the other Deputy President would fill the vacancy. If neither Deputy President were a member of the Board, the Board would elect a Board member as President.
2. A casual vacancy of a Board member occurring after 31 August in the year immediately preceding elections for the MAV Board will not be filled until the scheduled elections are held.

## Plural voting

---

### Resolution

That plural voting be abolished, and all voting be on the basis of one vote per member.

## State Council

---

### Resolution

That:

- State Council continue to meet at least twice each year
- the MAV Board be empowered to determine the strategic relevance of member proposed motions to be considered at State Council
- member councils provide the MAV with a minimum of 60 days' notice of proposed motions
- the MAV provide member Councils with a minimum of 30 days' notice of the State Council meeting agenda
- the MAV Board be empowered to put Board proposals before State Council.



## Message from the President

State Council is the primary opportunity for the MAV's membership to come together and debate issues that are critical to the local government sector.

Each of our member councils is represented. We usually meet twice a year, and councils can both submit motions and vote to determine our strategic direction.

For me, State Council is the parliament of Victorian councils. This year we debated and resolved 90 motions that had a relevance to our strategic objectives as detailed in our [2021-25 MAV Strategy](#).

We believe it is timely to provide the Victorian Government, and other parliamentarians, with an update on the opportunities for the State to better support councils and their communities. This directions paper is an easy-to-read presentation of the priority actions contained in each resolution from the MAV's June State Council. The full text of each resolution is also available on the MAV's website.

It provides a clear indication of what is important to the sector, the challenges, and where local, state, and federal governments can collaborate. These are important, relevant and timely matters that affect not just our own municipalities, but indeed our sector as a whole.

Through this directions paper you can see first-hand the issues facing the elected representatives closest to their communities and most importantly, their proposed solutions.

It also serves as a reminder that councils are an effective and efficient delivery partner of services and programs, as well as a driver of economic activity across many industry sectors including construction, public administration, community services and public infrastructure.

I'd welcome meeting with you to provide further details on these or any other issues. Feel free to email me via [MAVPresident@mav.asn.au](mailto:MAVPresident@mav.asn.au) to set up a meeting.

Kind regards,

Cr David Clark  
MAV President

Municipal Association of Victoria  
Level 12, 60 Collins Street, Melbourne VIC 3000  
GPO Box 4326, Melbourne 3001  
Telephone: 03 9667 5555  
Email: [inquiries@mav.asn.au](mailto:inquiries@mav.asn.au) | Website: [www.mav.asn.au](http://www.mav.asn.au)

# Advocating for local government interests

Victoria's 79 councils are leading their communities through the most dynamic and challenging circumstances. In recent years, we've been confronted by state-wide emergencies involving bushfires, the COVID-19 pandemic, and the recent storm events, as well as significant state policy reform. All of these events have had a significant impact on the local government sector.

The Municipal Association of Victoria (MAV) provides strategic policy advice to achieve meaningful long-term improvements to strengthen councils, communities and local businesses in every region of Victoria.

The MAV is the peak representative and advocacy body for Victoria's councils. The MAV was formed in 1879, with the Municipal Association Act 1907 appointing the MAV as the official voice of local government in Victoria.

Today, the MAV is a driving and influential force behind a strong and strategically positioned local government sector. All 79 Victorian councils are MAV members.

## MAV State Council - June 2022



A selection of photos from the State Council meeting held in June 2022. Thanks to our members councils for their continued involvement.



## Economically sound councils

On behalf of our member councils, the MAV is asking:

### THE STATE GOVERNMENT TO:

1. fund councils to continue the success of the COVID-19 outdoor dining program to pay for infrastructure and to be able to continue to subsidise costs to businesses for another three years and to transition the temporary arrangements into more permanent structures where this is appropriate.
2. provide ongoing investment in programs that promote increased visitation and economic growth in activity centres.
3. establish a dedicated and ongoing Community Resilience and Fairness Response Package to ensure our most vulnerable community members, particularly youth, are protected from the worst of the impacts of a prolonged pandemic, including reinvigorating, invest in and growing local manufacturing.
4. fund local learning and job preparation programs and initiatives designed to reduce unemployment following the pandemic.
5. implement a Council Price Index that reflects the cost pressures faced by local government (including infrastructure, materials costs, service contracts and wage costs) to inform the annual rate cap decision by the Minister for Local Government.
6. establish a dedicated and ongoing COVID-19 economic response package for business that involves further payroll tax relief and additional business grants and development programs that support business recovery and growth.
7. develop local job prospectuses to improve and attract employment diversification, improve access to technology, encourage business relocation and promote 20-minute city thinking.
8. facilitate economic growth by reviewing and unlocking underutilised government land parcels for development for a range of economic and community processes.

### THE FEDERAL GOVERNMENT TO:

9. commit to sustainability of councils through the restoration of the total quantum of Federal Assistance Grants Program at 1% of Commonwealth taxation revenue.

## Healthy, diverse and thriving communities

On behalf of our member councils, the MAV is asking:

### THE STATE GOVERNMENT TO:

10. restore the 50-50 funding agreement for Maternal Child Health (MCH) Service between councils and the Victorian Government.
11. review Key Age and Stage Framework including appointment times (increase appointment time) to cater for the cumulative increases in responsibilities added over the past decade by the end of 2023.
12. update a MCH workforce strategy to maintain ongoing delivery of the MCH service.
13. fund a new IT infrastructure system, to replace the outdated not fit for purpose Child Development Information System (CDIS) database by the end of 2024.
14. formally engage with local government in the design and implementation of "Community Collectives" (Social Inclusion Action Groups) as part of the recommendations of the Royal Commission into Victoria's Mental Health System.
15. develop the Mental Health and Wellbeing Plan with particular focus on services and opportunities for young people including employment pathways.
16. deliver services drawing on councils' knowledge of local community needs and service gaps and opportu-

nities through community and sporting groups.

17. explore partnership opportunities to ensure young people in isolated and public transport deprived areas and overseas students residing in Victoria have access to appropriate and relevant mental health services.

18. ensure that the 3-year-old kindergarten reform agenda is successfully implemented, including the increased demand for infrastructure provision to meet community needs.

19. undertake genuine collaboration with Local Government to implement the objectives and clarify compliance roles in the Sex Work Decriminalisation Act and fund Councils in the implementation of the planning and regulatory framework, including appropriate training for staff.

20. change the Disaster Recovery Funding Arrangements (DRFA) to allow for faster, tailored funding support for medium and largescale disaster events, that allows for quicker tailored responses to local disaster impacts.

21. allow for early establishment of disaster event recovery needs for impacted councils and their communities, in order to support a resilient and enhanced recovery effort.

22. adopt a more streamlined and pragmatic approach to DRFA claims assessment and approval to allow funds to flow more quickly back to councils to reimburse response, relief, and recovery activities.

23. fully fund school crossing supervision and not impose costs on ratepayers and residents for a service that is unrelated to core Local Government functions. Failing this, call on State Government to provide fair share funding for the provision of the school crossing supervisor service.

#### THE FEDERAL GOVERNMENT TO:

24. review the proposed future funding model of the new Support at Home Program to support the delivery of aged care in Victoria.

25. ensure dementia training is deemed mandatory as an appropriate regulatory lever to build capability for both New and Existing Aged Care Workers.

26. fund mandatory training for new and existing aged care workers which may include provision of 'Support to People Living with Dementia' module as a core part of the course for new aged care workers, provision of opportunities for dementia training for existing aged care workers similar to the module 'Provide Support to People Living with Dementia' and include regular refresher training as part of organisational compliance.

27. increase Australia's capacity and speed to evacuate as many people at risk within Afghanistan. This includes those who have worked for, or assisted, the Australian Government and Australian organisations, as well as human rights defenders and women and girls who are now threatened.

28. increase Australia's resettlement places for Afghan refugees by 20,000 additional places per year for the next four years.

29. immediately increase Australian aid to the region to support organisations within Afghanistan and in neighbouring countries assisting those who have fled.

30. ensure that people whose asylum claims in Australia have been previously rejected be supported to submit new claims in the light of the changed circumstances in Afghanistan.

31. provide much needed certainty to 4,300 Afghans currently on temporary protection visas by granting them permanent protections.

32. assist Afghan Australians, including people with temporary and permanent visas, with urgent family reunion applications for relatives who are at particular risk. There is considerable national interest and support for Australia to take a leading role in responding to the crisis.



## Well-planned, connected and resilient built environment

On behalf of our member councils, the MAV is asking:

### THE STATE GOVERNMENT TO:

33. strongly advocate on the expansion of the Federal Government's Mobile Black Spot Program, and fair and equitable access to the NBN across regional Victoria.
34. work together with all relevant bodies to establish an effective system of backup telecommunications that can function during and after an emergency or ongoing natural disaster situation.
35. abandon the transfer of responsibility of the combustible cladding audits, oversight of the Essential Safety Measures maintenance regime, and orphaned building permits from the Victorian Building Authority (VBA) to local government and, in relation to orphaned building permits, the VBA use its powers under existing legislation to appoint a Manager for any Private Building Surveyor (PBS) business, if the PBS's registration has been suspended or cancelled.
36. prioritise the timely planning and consistent delivery of infrastructure and services that are the responsibility of state government and agencies during the early phases of any new development.
37. address the lack of investment in state infrastructure to support increased urban development (including renewables, power, water, sewer).
38. develop planning controls to manage the cumulative impacts of fast paced development to improve the livability of the public realm and the sustainability of the community.
39. increase funding for the Department of Transport and VicTrack to facilitate appropriate ongoing maintenance of their assets (including weed and vegetation management, litter pickup and graffiti removal) along arterial roads and freeways and rail and tram corridors.
40. Provide an option for DoT asset maintenance work to be undertaken by councils, should they choose to do so on behalf of DoT, under an indexed full cost recovery model.
41. improve public transport, including provision of better bus routes, cleaner and more frequent trains and trams, better integrated transport hubs, and improving connections to areas that are underserved.
42. provide the option for people to travel on buses with bikes.
43. investigate activating river transport as an option where it might be viable to do so.
44. provide funding to councils to fund and deliver pedestrian and cycling improvement projects throughout all of Victoria.
45. provide funding to support a safer and accessible active transport network.
46. improve the connectivity of active transport routes on State Government land with local transport networks to create and extend active transport networks, include separated cycle ways and increase bicycle storage at train stations and activity centres to encourage sustainable and integrated transport options.
47. ensure that active transport is included in Victoria's integrated transport plan as recommended by Infrastructure Victoria in the 'Victoria's Infrastructure Strategy 2021 - 2051'.
48. deliver \$20 million annually for a local road blackspot treatment and prevention program.
49. expand the current Rural Roads Support package.
50. deliver \$11 million over two years for a black hole funding program.
51. re-instate the Fixing Country Roads program to assist councils to improve the current state of their local roads to enhance the connectivity, reliability, and efficiency of regional communities.
52. provide social, public, and affordable housing for low-income workers such as creative industries and hospitality.
53. promote the development of social, public, and affordable housing growth along transport corridors.

54. use State Government owned land for new social, public, and affordable housing projects.
55. ensure responsive maintenance and management for state owned and/or managed assets on Crown land (such as reserves, halls, boat ramps, etc.), so that they are suitably maintained for the community's use.
56. introduce state-wide mandatory inclusionary zoning provisions into planning schemes, where appropriate.
57. ensure that funding made available through Windfall Gains Tax is distributed to LGAs where the tax has been generated to assist councils with funding local community infrastructure projects.
58. address the critical shortage of affordable housing in Victoria through regulatory reform that incentivises provision of affordable homes within new developments at all scales.
59. change the Victorian Planning Provisions to prohibit the use of land for a supermarket under the Commercial 2 Zone in situations it is seeking to establish in close proximity to an established gaming premises.
60. amend the Environment Protection Act 2017 to allow Council Authorised Officers to have extended powers to instigate proceedings against offenders under s286 & s287 of the Act, in particular, for non-compliance with improvement and prohibition notices issued for unreasonable noise from residential construction sites, and potential impact to human health and the environment from onsite wastewater systems.
61. fully implement the recommendations of the Victorian Auditor-General's report on Integrated Transport Planning (4 August 2021).
62. ensure the Department of Transport meet their obligations under the Transport Integration Act 2010 to ensure the integrated planning and management of the State's transport system.
63. ensure the Department of Transport improves the transparency of current and future transport plans including better engagement with councils and community.
64. ensure individual state transport projects are fully integrated into the local transport network, environment, and place to optimise and capture community benefits.
65. provide an update on how the new Department of Transport structure will ensure a regional view and approach to transport planning.
66. provide greater support for councils in their planning and forward budgeting of critical social infrastructure projects (including libraries and aquatic centres) through an ongoing social infrastructure funding stream and establishment of funding agreements that enable councils to plan and deliver a pipeline of critical social infrastructure projects their community needs, when they need it; and deliver long-term funding certainty and provide flexible funding arrangements for councils.
67. re-establish the Hoarding and Squalor Taskforce previously coordinated by the Department of Health, to ensure professional guidance in the effective treatment and risk reduction of hoarding.
68. ban motorised bikes like (illegal) monkey bikes and dirt bikes in public open spaces and reserves, except where such bikes are specifically allowed, and effectively enforce any such ban and undertake an education campaign to remind that only lawfully registered motorised bikes may be ridden on public roads.
69. implement the recommendations of the "Air Pollution in Melbourne's Inner West; taking direct action to reduce our community's exposure" Report by the Inner West Air Quality Community Reference Group.
70. reinstate the full \$1.3 million funding to the Office of the Victorian Government Architect (OVGA), continue to fully fund the role of the OVGA to provide independent expert architectural advice and make publicly available the advice of the OVGA where they have reviewed State Government and State Significant projects.
71. make an amendment to Clause 63.06 Expiration of Existing Use Rights of the Victorian Planning Provisions that exempts businesses from the current expiry timeframe to exclude the period where the State of Emergency for the coronavirus pandemic was in place from the calculated 15-year period.
72. ensure that Victoria has the government schools that families will need to meet their educational needs as our state continues to grow, by committing to a sustained program of building of new schools and upgrades to existing schools beyond 2026 and a target for new schools to be built by 2031.
73. provide adequate open space for government schools, or work with councils to ensure an agreement is in

place regarding the use of council-managed public open space prior to the delivery of government schools.

74. impose a moratorium on the issuing of infringement notices to councils for failing to maintain the minimum clearance distances between vegetation and powerlines as prescribed by the Electricity Safety (Electric Line Clearance) Regulations 2020.

75. Include mandatory aerial bundled cabling as an industry standard for powerline network upgrade works in Victoria within the Electricity Distribution Code of Practice as required under the Essential Services Commission Act 2021.

76. deliver better, more sustainable outcomes for the transition to renewable energy by introducing a policy that all future high-voltage transmission projects will be required to investigate the lowest social, environmental, and economic impact technologies and design options available.

77. deliver better, more sustainable outcomes for the environment and local communities being affected by the delivery of new renewable energy infrastructure, by developing a state policy for conducting and integrating community engagement findings when planning for and delivering renewable energy high voltage transmission infrastructure projects.

### THE FEDERAL GOVERNMENT TO:

78. address the critical shortage of affordable housing in Victoria through regulatory reform that incentivises provision of affordable homes within new developments at all scales.

79. fully fund and remove decommissioned and redundant overhead Hybrid Fibre Coaxial (HFC) cabling located on residential, business and industrial precinct streets following the successful rollout of the national broadband network.

## Changing climate and a circular economy

On behalf of our member councils, the MAV is asking:

### THE STATE GOVERNMENT TO:

80. increase investment in the circular economy through dedicated funding streams to industry and local government to support local processing solutions, sector innovation and market development in the waste and recycling sectors.

81. provide stronger guidelines around the installation of new wood heaters in built-up metropolitan areas through the planning process including the ability to not allow them.

82. expand the EPA Ambient Air Network (including sensors to provide more localised data for each local government area) which will enable greater, fine-grained coverage of the impact of wood heaters on public health.

83. provide support for households with no other main form of heating than wood heaters, to promptly switch to electric heating options through the introduction of a bulk-buy, subsidy or other incentive scheme.

84. address the significant weed infestations on Crown land and land under the control of various government agencies and departments.

85. increase funding support for enforcement of declared noxious weeds by Agriculture Victoria and for the delivery of pest and weed mitigation and management programs, including strategic research and programs that help farmers manage weeds and pests on their properties.

86. increase funding support to local government for the introduction and implementation of kerbside waste collection reforms.

87. review the (Victorian) Wildlife Act 1975, to address the increasing issue of Noisy Miners and their negative impact on other native birds.

88. work closely with the new Federal Government to establish a National Renewable Energy Target of 100% for 2030, declare a price on carbon pollution, preferably the Australian Carbon Dividend Plan, as soon as possible, and replicate the success of the 20 Million Trees program to re-establish green corridors, urban forests and

threatened ecological communities.

89. implement reforms to make the Environmental Effects Statement (EES) process fairer and less costly for local government and the community whilst continuing to maintain the ability to fully participate.

90. support the management of natural resources in coastal and mountain areas across the state through developing and implementing a multi-disciplinary approach for natural resource management policy.

91. increase resourcing for compliance and education to ensure that visitors take their rubbish home and dispose of it lawfully when visiting national and state parks.

92. establish a funding stream for local governments to improve the climate resilience of ageing infrastructure that will be impacted by future extreme weather events due to climate change.

93. fund the appointment of an Officer for the Protection of the Local Environment (OPLE) to each local council in Victoria to ensure a consistent coordinated approach to education and enforcement of state and local government environment protection matters.

94. recognise the harmful impacts of second-generation rodenticides and prohibit their use in Victoria and establish a taskforce to investigate and promote alternative methods of rodent management.

95. develop an integrated Bin Day App, integrated into the Service Victoria app, that allows all residents of Victoria equal access to accurate information about bin collection days and standardised kerbside bin contents, eliminating confusion and ensuring quality product to recyclers.

## Sector capability and good governance

On behalf of our member councils, the MAV is asking:

### THE STATE GOVERNMENT TO:

96. provide councils with the financial funding support required to continue providing the services to the community that the state government has cost-shifted, in part or full, to local government including where local government collects levies for the state government.

97. consider the volatility in CPI when setting rates and seek engagement with the sector prior to the next setting of the Victorian Council Rate Cap.

## Effective and responsive MAV

On behalf of our member councils, the MAV is asking:

### THE STATE GOVERNMENT TO:

98. replace the local government candidate certification program used for the 2020 general election with a mandatory comprehensive candidate training program for the 2024 general election cycle to ensure all prospective candidates have a deep and clear understanding of the role of a councillor and council to drive sector capability and good governance.

99. develop and deliver a state-wide councillor induction program for the 2024 general election cycle that is driven by Local Government Victoria, delivered on a regional basis and funded by the State to ensure all councillors receive the same induction training in a way that is efficient and helps build relationships and support networks across the state.



## MAV Member Councils 2021-22

Alpine Shire Council	City of Greater Geelong	Mount Alexander Shire Council
Ararat Rural City Council	Greater Shepparton City Council	Moyne Shire Council
City of Ballarat	Hepburn Shire Council	Murrindindi Shire Council
Banyule City Council	Hindmarsh Shire Council	Nillumbik Shire Council
Bass Coast Shire Council	Hobsons Bay City Council	Northern Grampians Shire Council
Baw Baw Shire Council	Horsham Rural City Council	City of Port Phillip
Bayside City Council	Hume City Council	Pyrenees Shire Council
Benalla Rural City Council	Indigo Shire Council	Borough of Queenscliffe
City of Boroondara	City of Kingston	South Gippsland Shire Council
Brimbank City Council	Knox City Council	Southern Grampians Shire Council
Buloke Shire Council	Latrobe City Council	City of Stonnington
Campaspe Shire Council	Loddon Shire Council	Strathbogie Shire Council
Cardinia Shire Council	Macedon Ranges Shire Council	Surf Coast Shire Council
City of Casey	Manningham Council	Swan Hill Rural City Council
Central Goldfields Shire Council	Mansfield Shire Council	Towong Shire Council
Colac Otway Shire Council	Maribyrnong City Council	Wangaratta Rural City Council
Corangamite Shire Council	Maroondah City Council	Warrnambool City Council
City of Darebin	City of Melbourne	Wellington Shire Council
East Gippsland Shire Council	City of Melton	West Wimmera Shire Council
Frankston City Council	Mildura Rural City Council	Whitehorse City Council
Gannawarra Shire Council	Mitchell Shire Council	City of Whittlesea
Glen Eira City Council	Moira Shire Council	City of Wodonga
Glenelg Shire Council	City of Monash	Wyndham City Council
Golden Plains Shire Council	Moonee Valley City Council	City of Yarra
City of Greater Bendigo	Moorabool Shire Council	Yarra Ranges Shire Council
City of Greater Dandenong	Moreland City Council	Yarriambiack Shire Council
	Mornington Peninsula Shire Council	

Item: 10.3

## Notice of Motion - Governance Rules - Submissions Committee

**COUNCILLOR** Cr Stephen Hart

**ATTACHMENTS** Nil

### 1. NOTICE OF MOTION

*That Council:*

- 1. Notes that the draft changes and marked-up Governance Rules are on exhibition for a period of six weeks to allow the public to make written submissions on the proposed changes.*
- 2. Determines that it will hear submitters that wish to be heard in support of their written submission at a Submissions Committee meeting to be held on 21 September 2022 at Colac Otway Performing Arts and Cultural Centre, commencing at 4pm.*
- 3. Notes that point 2 of this resolution supersedes point 4.1 of the Council resolution of 27 July 2022 relating to Item 9.5 of the Council meeting agenda.*
- 4. Requests the Chief Executive Officer to ensure that all submitters are informed of this option as soon as practicable following this Council meeting.*

### 2. COUNCILLOR COMMENT

The Governance rules set out how Council meetings and Committee meetings are to be conducted but also affect the rights of the community in relation to matters such as asking questions of Council and lodging petitions.

Council adopted revised Governance rules at its meeting held on 27 April 2022. Unfortunately, Council wasn't able to include provisions to allow Committee meeting participants and Councillors to attend a meeting electronically beyond 1 September 2022 as supporting sector guidelines were not made available until June 2022.

Since the advent of the COVID-19 pandemic the ability to attend some meetings electronically has been an important option for Local Government and the community more broadly.

The agenda for the meeting on 27 July 2022 included proposed changes to the Governance rules in relation to allowing participants, including Councillors, to attend meetings electronically. Somewhat ironically, many of the changes are designed to allow the Mayor of the day to prevent a Councillor



from attending a meeting electronically even though the Governance Rules are meant to facilitate the attendance of meetings electronically.

It is important to note that there was no Councillor briefing or workshop on the proposed new rules before they were included in the agenda for the 27 July 2022 meeting.

The officer recommendation presented in the report for consideration by Council on 27 July 2022 sought to limit the consultation period to two weeks and invite written submissions without an opportunity for members to be heard in support of their written submission at a Submissions Committee meeting.

The report presented to the July Council meeting tried to paint the changes as minor even though, if adopted, the new rules would be unprecedented in the absolute power they would vest in the Mayor of the day to stop a Councillor from attending a meeting electronically. If the Councillors reason for attending the meeting electronically was a medical one, the refusal of the Mayor to allow electronic attendance could mean that the Councillor was blocked from attending the meeting at all.

If Councillors are blocked from attending a meeting by the Mayor this can disenfranchise the community as one or more of the elected representatives is not at a meeting even though they were available to attend electronically. The public should have their full rights to comment on these changes.

At the meeting on 27 July 2022 the justification for not allowing the public to speak to their submission was the short consultation period of two weeks. To his credit, Cr Potter moved a motion to restore the full consultation period. Unfortunately, the resolution still included the restriction on the public speaking to their submission even though there is no longer any justification for denying the public that right.

This motion seeks to restore the right of the public to speak to their submission, if they choose to do so.

It may be argued that no one has asked to speak to their submission. Council has advertised that the public will not be allowed to speak to their submissions so it would be a surprise if anyone has asked to speak to their submission.

If the motion is adopted it is important that all members of the public who have lodged a submission are informed by Council that their right to speak to their submission has been restored.

Item: 10.4

## Notice of Motion - Recording of Responses to Public Questions in the Meeting Minutes

<b>COUNCILLOR</b>	Cr Stephen Hart
<b>ATTACHMENTS</b>	1. Extract - Marked up Governance Rules of Colac Otway Shire Council - 67.1.13 [10.4.1 - 1 page]

### 1. NOTICE OF MOTION

**That Council:**

- 1. Notes that since April 2022 the Council has recorded an officer's summary and interpretation of the answers read out at Council meetings in response to questions from the public instead of recording the actual answer, in line with Council's existing Governance Rules.**
- 2. Notes that recording an officer's summary and interpretation of the answers does not reflect what actually occurred when the actual answers were read out at the meeting.**
- 3. Proposes to amend sub-clause 67.1.13 of its Governance rules to read: "a brief summary of any public questions and the full responses provided by the Mayor, Chief Executive Officer or their nominee; and"**
- 4. Places the proposed revised sub-clause 67.1.13 (Attachment 1) on public exhibition from Friday 26 August to Tuesday 13 September 2022 (inclusive), to allow the public to make written submissions on the proposed change.**
- 5. Determines that it will hear submitters that wish to be heard in support of their written submission at a Submissions Committee meeting to be held on 21 September 2022 at Colac Otway Performing Arts and Cultural Centre, commencing at 4pm.**

### 2. COUNCILLOR COMMENT

**Statement in support**

The existing Governance Rules provide a 30 minute period for the public to ask questions at the beginning of each Council meeting. Many of these questions are lodged in writing before the meeting and that process is Council's preference. This allows an answer to be prepared before the Council meeting is held.

Generally the Mayor reads out the answers to two questions (or more where time permits) for each person who has lodged written questions prior to the meeting. The practice of answering two questions is meant to ensure that as many people as possible have questions answered or an

opportunity to ask a question from the floor in the allotted 30 minute timeframe. Responses to any questions not answered at the meeting are sent to the individuals who submitted them to Council. For approximately twenty years, possibly longer, the Colac Otway Shire Council has recorded the responses provided at the meeting in the minutes.

Since April 2022, the Council has resorted to summarising and interpreting the answers and including those summaries in the minutes rather than the full response. One of the justifications is that this will save time. That argument doesn't make sense. Given that Council has already written out the answers so that the Mayor can read them out at the meeting, it should be quite straightforward for the officers to copy the responses read out from the document prepared for the Mayor and then paste them into the draft minutes. This should save time as it will not require an officer to reinterpret and summarise the answer. It would also more accurately reflect the actual answer given at the meeting.

It has also been argued that the full answers can be viewed and heard on the YouTube recording of the meeting. This is not entirely correct. The video recordings of Council meeting can be removed after 12 months. The video recording of some meetings in 2020 and 2021 have already been removed from Council's YouTube channel.

The only easily available long term record of Council's meeting are the minutes and these should accurately reflect the response given rather than recording summaries that may not fully reflect the answers given.

#### **Attachment**

Extract from the existing Governance rules, sub-rule 67.1.13 with the proposed changes marked-up.

- 67.1.6 the outcome of every motion, that is, whether it was put to the vote and the result of either carried, lost, withdrawn, lapsed, amended, etc.;
- 67.1.7 the vote cast by each Councillor upon a division;
- 67.1.8 the vote cast by any Councillor who has requested that his or her vote be recorded in the minutes;
- 67.1.9 questions upon notice;
- 67.1.10 the failure of a quorum;
- 67.1.11 any adjournment of the meeting and the reasons for that adjournment;
- 67.1.12 the time at which standing orders were suspended and resumed;
- 67.1.13 a brief summary of any public questions and the full responses provided by the Mayor, Chief Executive Officer or their nominee; and
- 67.1.14 any other matter which the Chief Executive Officer thinks should be recorded to clarify the intention of the *Council meeting* or the recording of the minutes.
- 67.2 The *Chief Executive Officer* must ensure that the minutes of any *Council meeting* are:
- 67.2.1 published on *Council's* website; and
- 67.2.2 available for inspection at *Council's* office during normal business hours.
- 67.3 Nothing in sub-Rule 67.2 requires *Council* or the *Chief Executive Officer* to make public any minutes relating to a *Council meeting* or part of a *Council meeting* closed to members of the public in accordance with section 66 of the *Act*.

## Division 12 – Behaviour

### 68. Public Addressing the Meeting

- 68.1 Members of the public do not have a right to address *Council* and may only do so with the consent of the *Chair* or by prior arrangement.
- 68.2 Any member of the public addressing *Council* must extend due courtesy and respect to *Council* and the processes under which it operates and must take direction from the *Chair* whenever called on to do so.
- 68.3 A member of the public present at a *Council meeting* must not disrupt the meeting.

### 69. Chair May Remove

The *Chair* may order and cause the removal of any person, other than a Councillor, who disrupts any meeting or fails to comply with a direction given under sub-Rule 68.2.

*It is intended that this power be exercisable by the Chair, without the need for any Council resolution. The Chair may choose to order the removal of a person whose actions immediately threaten the stability of the meeting or wrongly threatens his or her authority in chairing the meeting.*

Item: 10.5

## Notice of Motion - Foot and Mouth Disease - Advocacy for Action

<b>COUNCILLOR</b>	Cr Chris Potter
<b>ATTACHMENTS</b>	Nil

### 1. NOTICE OF MOTION

*That Council:*

- 1. Acknowledges the concern of the farming, business and general community of the Colac Otway Shire on the potential impacts of a Foot and Mouth disease (FMD) outbreak in Australia.*
- 2. Resolves to write to the Minister of Agriculture, Fisheries and Forestry to advocate for continuing increased measures to prevent an outbreak of FMD and raise awareness of FMD.*

### 2. COUNCILLOR COMMENT

Foot and Mouth disease (FMD) is one of the most serious livestock diseases in the world and affects cloven hoofed animals including cattle, sheep and pigs. It has not been detected in Australia for over 100 years but has recently been detected in Indonesia, a close neighbour and trading partner and popular tourist destination.

If FMD does reach Australia it could have catastrophic consequences for our livestock industry and food security and availability. The local impact of an outbreak would have severe impact, not just on our farming community but on some major manufacturers including Bulla and Australian Lamb Company.

Such is the concern that recently local farmers and concerned citizens rallied in the Memorial Square Colac to discuss the situation and moved a motion calling on the Federal Government to immediately institute a 120 day travel ban to Indonesia for non-essential travel and to provide greater financial and in kind assistance to Indonesia to combat the outbreak there, refine Australia's biosecurity arrangements and refine plans for control measures and responses in the event of a FMD outbreak within Australia.

Whilst border biosecurity is a Federal Government issue, both the State and Local Governments have a role in supporting farmers and wider community and in the prevention and responding to an outbreak of FMD.

### 3. OFFICER COMMENT

In May 2022, Indonesian authorities first reported outbreaks of Foot and Mouth Disease (FMD) in East Java and Sumatra. Confirmation then came through in June 2022 of an FMD outbreak in Bali.

Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) modelling projects a widespread FMD outbreak in Australia would have an estimated direct economic impact of around \$80 billion.

The Australian Government, Department of Agriculture, Fisheries and Forestry (DAFF) is the lead authority that is responding to these Indonesian outbreaks to minimise the risk of FMD entering Australia.

In response to the Indonesian outbreak a number of additional controls have been implemented to minimise the risk of an FMD outbreak in Australia:

- Import permits have recently been reviewed for animal products from Indonesia that may carry FMD and those of concern have been suspended.
- Frontline biosecurity officers are operating with increased vigilance across all flights arriving from Indonesia, including Bali.
- Strict biosecurity protocols are in place to prevent high risk materials, such as contaminated equipment or clothing, animals and animal products, being brought in by travellers who may have been exposed to diseased animals.

If an outbreak was to occur within Victoria, under the State Emergency Management Plan (SEMP) roles and responsibilities, the Lead Control Agency for animal biosecurity emergencies is the Department of Jobs, Precincts and Regions (DJPR).

Local Government is listed as a support agency for response, relief and recovery. As a support agency, Council may be asked to provide services, personnel or material to support a control agency, and/or coordination agency and/or members of the public.

The State Government through Agriculture Victoria (that is part of DJPR) has established a state local government working group involving CEOs from eight Councils, including Colac Otway Shire. Agriculture Victoria provided a briefing to the Colac Otway Shire Municipal Emergency Management Planning Committee (MEMPC) meeting on 16 August 2022 and this has been distributed to Councillors for their information.

