

Planning and Environment Act 1987

Panel Report

**Central Goldfields Planning Scheme Amendment C31cgol
Dunolly and Carisbrook Flood Studies**

23 December 2020

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 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 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 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 Act]

Planning and Environment Act 1987

Panel Report pursuant to section 25 of the Act

Central Goldfields Planning Scheme Amendment C31cgol

Dunolly and Carisbrook Flood Studies

23 December 2020



Geoff Underwood, Chair

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Glossary and abbreviations

Act	Planning & Environment Act 1987
Council	Central Goldfields Shire Council
DELWP	Department of Environment, Land, Water and Planning
FO	Floodway Overlay
LSIO	Land subject to inundation overlay
LSIO2	Schedule 2 to the LSIO
Minister	Minister for Planning
MPS	Municipal Planning Strategy
NCCMA	North Central Catchment Management Authority
Planning scheme	Central Goldfields Planning Scheme
PPF	Planning Policy Framework

Overview

Amendment summary

The Amendment	Central Goldfields Planning Scheme Amendment C31cgol
Common name	Dunolly and Carisbrook Flood Studies
Brief description	The Amendment revises the flood control provisions of the Central Goldfields Planning Scheme
Subject land	Numerous properties are affected in Dunolly, Carisbrook and surrounding rural areas
The Proponent	The North Central Catchment Management Authority requested the Amendment
Planning Authority	Central Goldfields Shire Council
Authorisation	25 February 2020
Exhibition	An extended exhibition period took place from 22 May 2020 to 23 July 2020
Submissions	<p>Number of Submissions: 12. Opposed: 5</p> <ul style="list-style-type: none"> • Dr Jenni Newton-Farrelly • Daniel McIver • Peter Blazko • Barry Rinaldi • Martin Olyve • Terry Hodgkins • Trish Coutts, Helen Broad and Keith McLeish • Coliban Water • Environment Protection Authority • Central Highlands Water • Goulburn-Murray Water • Country Fire Authority

Panel process

The Panel	Geoff Underwood
Directions Hearing	<p>A Directions Hearing was held by video conference on 10 September 2020</p> <p>Further written directions about the conduct of the Hearing were issued on 13 November 2020</p>
Panel Hearing	The Hearing was held by video conference on 23 November 2020
Site inspections	An unaccompanied inspection took place on 18 November 2020

Parties to the Hearing	<p>The presenting parties were:</p> <ul style="list-style-type: none">• Amy Bell, Strategic Planner, Central Goldfields Shire• Camille White, Manager Floodplain, North Central Catchment Management Authority <p>Philip Schier, Manager Strategy and Economic Development, Central Goldfields Shire was present throughout the Hearing</p> <p>Trish Coutts and Keith McLeish</p> <p>Barry Rinaldi</p> <p>Terry Hodgkins</p>
Citation	Central Goldfields PSA C31cgol [2020] PPV
Date of this Report	23 December 2020

Executive summary

Through Amendment C31cgol to the Central Goldfields Planning Scheme, the Central Goldfields Shire Council is taking action in response to flood events in 2010 and 2011 that affected the townships of Carisbrook and Dunolly and surrounding areas, including along the Tullaroop Creek. Both towns have a history of flooding. New overlays and mapping will replace the current controls plus there will be new policy and control provisions to assist with the determination of permit applications triggered by the new controls.

The Amendment has been prepared by the Council at the request of and in conjunction with the North Central Catchment Management Authority (NCCMA) which is the relevant floodplain management authority for the Central Goldfields Planning Scheme.

The Amendment is based on flood studies conducted by NCCMA with Council as well as on-the-ground situations from flood events in 2010 and 2011. The Carisbrook Flood and Drainage Management Plan 2013 and the Dunolly Flood Management Plan 2014 are proposed to be included as background documents in the planning scheme.

The Explanatory Report gives a sense of the scale of the area affected by the flood events. It states:

The Amendment applies to 754 properties in both Carisbrook and Dunolly and surrounding rural areas, that have been identified as being liable to flooding from McCallums Creek, Tullaroop Creek, Burnt Creek and their tributaries by the Carisbrook Flood and Drainage Management Plan 2013, the Dunolly Flood Investigation 2014, rural mapping along Tullaroop Creek based on information captured during the January 2011 flood event. The amended flood overlays have taken into account completed flood mitigation works.

Council's Part A submission advised that approximately 911 properties are affected. The difference in numbers results from the fact the Amendment improves the situation for 146 properties by removing them from the Land Subject to Inundation Overlay.

At the Hearing, submitter 6 referred to a specific number of properties with Carisbrook affected by the controls. The number was later confirmed by the NCCMA (document 6) as:

- Current Amendment: 423 properties will have flood controls applied. Of these:
 - 194 properties currently have flood controls
 - 229 properties having flood controls added for the first time.
- Future Amendment (once Western Levee works are completed):
 - 342 properties will have flood controls remaining.
- Therefore, 81 properties will have flood controls removed.

Because of the passage of time since 2011 and the completion of the flood studies in 2013 and 2014, and to verify outcomes and the scope of mitigation works, Council and the NCCMA engaged peer reviews of the work. Consultants were engaged to confirm the extent of flood areas, the modelling of water flows under differing recurrence events, the works necessary to mitigate future flood events and other maintenance type works. That material, all of which was presented as attachments to Council's Part A submission, has helped formulate the suite of controls in the Amendment.

Twelve submissions were received during exhibition of the Amendment. Seven came from landowners; two were withdrawn after consultation with Council and the NCCMA. Of the five submissions referred to the Panel, one submission related to Dunolly. For Carisbrook, three of six submitters sought to present at the Hearing but, on the day, one submitter was unable to do so. The remaining two submitters elaborated on their submissions that the

mapping in the Amendment overstated the extent of flooding or did not accurately depict where flood waters had flowed in 2011. They also questioned the nature of the levee works currently under construction as part of the mitigation works.

The Council and the NCCMA together presented at the Hearing. The Part B submission from Council reports:

The impacts from the significant floods of 2010 and 2011 are still being felt today in the townships of Carisbrook and Dunolly

and that:

The recommendations from the Carisbrook Flood and Drainage Management Plan 2013 and Dunolly Flood Investigation 2014 are still being implemented now. These include this planning scheme amendment and the future construction of the western levee in Carisbrook.

The joint submission was that the Amendment is based on best advice and that, with the works undertaken at Dunolly, underway at Carisbrook and as further proposed, both townships will be better protected for future events through the new controls.

Key issues raised in submissions included:

- The accuracy of the mapping used to determine the extent of the Floodway Overlay (FO) and the Land Subject to Inundation Overlay (LSIO).
- The inclusion of properties said to be unaffected by flood waters.
- Requests for variation to the overlays to reduce the impact on property.

Each of these issues was covered in submissions and in presentations to the Hearing.

The Explanatory Report explained the purpose of the Amendment and the land areas affected by the new flood controls. It set out the necessary strategic justification for the Amendment.

In its Part B submission (paragraph 33 and following) the Council expanded on how it saw that the Amendment supports and implements the state and local legislative frameworks, Ministerial Directions and Planning Practice Notes. Each of those three aspects are central to the Panel's consideration of how the Amendment responds to strategic planning policy, the selection and use of appropriate overlays, and the technical aspects of the problem being addressed.

Council's Part B submission:

- examined relevant elements of State and Local Policies to conclude the Amendment met the necessary aspects of policy;
- dealt with technical considerations that sit behind the new controls that make up the Amendment relying on the review of the flood events and the expert advice in the flood studies as well as the recommendations for mitigation works;
- reviewed and concluded the Amendment complied with all the relevant Ministerial Direction and Planning Practice notes about the selection of the overlays to be used in an Amendment for this purpose.

The Panel considered all the material presented by the Council and the NCCMA in advance of the Hearing including all the material in the attachments to Council's Part A submission. Among this information are the full reports by Mr Ben Tate of Water Technology Pty Ltd and the follow up reviews of the flood studies.

There were submissions for and against the Amendment. The 'fors' as noted by the Panel include significant support from expert agencies who endorse the Amendment. The 'against' include the opposing submissions not expanded upon at the Hearing as well as those that were; all of them are dealt with here.

It is clear to the Panel that the Amendment is based on the expert advice of consultants, including peer reviewers. It is also very clear there is a need for action to better protect the townships of Carisbrook and Dunolly from flooding.

From both a strategic justification and practical application, the Panel is satisfied the Amendment has the necessary strategic planning support. There is no question that State and Local planning policy support action to avoid and minimise flooding. The Council submissions established the necessary strategic justification.

Beyond that, this is an instance where the Panel sees planning policy support as less important than the practical steps to take action to better protect the townships of Dunolly and Carisbrook, as well as numerous rural properties, from the effects of future flooding that will inevitably occur. The evidence of Mr Tate, the principal author of the flood studies, substantiated his work and the directions applied by the Amendment. Measured against the submissions as lodged and expanded upon in the presentations at the Hearing, the Panel has no doubt about the need for action and the merit of the proposed controls. The Amendment is supported.

Recommendations

Based on the reasons set out in this Report, the Panel recommends that Central Goldfields Planning Scheme Amendment C31cgol be adopted as exhibited subject to the following:

- 1. Amend Clause 21.09 of Municipal Strategic Statement to highlight the importance of managing development within land in the Land Subject to Inundation Overlay and discouraging development on land in the Floodway Overlay in the townships of Carisbrook and Dunolly.**
- 2. Insert Clause 44.03 (Floodway Overlay).**
- 3. Insert Schedule 1 to Clause 44.03 (Floodway Overlay) to identify properties that experience flooding greater than 500 millimetres flood depth and provide permit exemptions.**
- 4. Amend the Schedule to Clause 44.04 (Land Subject to Inundation Overlay) to identify it as Schedule 1 to the Land Subject to Inundation Overlay.**
- 5. Insert Schedule 2 to Clause 44.04 (Land Subject to Inundation Overlay) to identify properties that experience flooding less than 500 millimetres flood depth and provide permit exemptions.**
- 6. Amend Clause 72.08 to include the Carisbrook Flood and Drainage Management Plan 2013 and the Dunolly Flood Management Plan 2014 as Background documents in the planning scheme.**
- 7. Amend the Schedule to Clause 74.01 Application of Zone, Overlays and Provisions, to include reference to the Floodway Overlay and the Land Subject to Inundation Overlay as follows:**
 - a) The Floodway Overlay to cover areas identified from detailed flood studies as having a higher risk of flooding or the entire 10 per cent Annual**

Exceedance Probability flood extent where a detailed flood study has not been undertaken.

- b) The Land Subject to Inundation Overlay to cover areas identified as having a lower risk of flooding or the entire 1 per cent Annual Exceedance Probability flood extent where a detailed flood study has not been undertaken.**
- 8. Adopt the following new Maps 4LSIO-FO, 5LSIO-FO, 7LSIO-FO, 14LSIO-FO, 16LSIO-FO, 19LSIO-FO and 20LSIO-FO.**
 - 9. Amend Map 13LSIO-FO as identified in Figure 17 of Council's Part B submission (see Figure 3 in this report).**

1 Introduction

Through Amendment C31cgol to the Central Goldfields Planning Scheme, the Central Goldfields Shire Council is taking action in response to flood events in 2010 and 2011 that affected the townships of Carisbrook and Dunolly and surrounding areas, including along the Tullaroop Creek. Both towns have a history of flooding. The current planning controls dealing with flooding are to be varied under the Amendment. New overlays and mapping will apply plus there will be new policy and control provisions to assist with the determination of permit applications triggered by the new controls.

1.1 The Amendment

(i) Amendment description

The Amendment has been prepared by the Council at the request of and in conjunction with the NCCMA which is the relevant floodplain management authority for the Central Goldfields Planning Scheme.

The purpose of the Amendment is to correct and update the current flood controls in the Planning Scheme.

(ii) The subject land

The Amendment applies to land in Dunolly and Carisbrook as well as rural properties in and around both townships.

Council's Part A submission stated:

The proposed changes to the planning scheme will affect approximately 911 properties, including:

- 146 properties are proposed to have the current LSIO removed.
- 10 properties are proposed to have the FO applied.
- 481 properties are proposed to have the LSIO applied.
- 274 properties are proposed to have both the FO and the LSIO applied.

Of the 765 properties that are proposed to have flood controls, 306 properties are proposed to have flood controls applied for the first time.

At the Hearing, submitter 6 referred to a specific number of properties within Carisbrook affected by the controls. The number was later confirmed by the NCCMA (Document 6) as:

Current Amendment

- 423 properties will have flood controls applied

Of these

- o 194 properties currently have flood controls
- o 229 properties having flood controls added for the first time

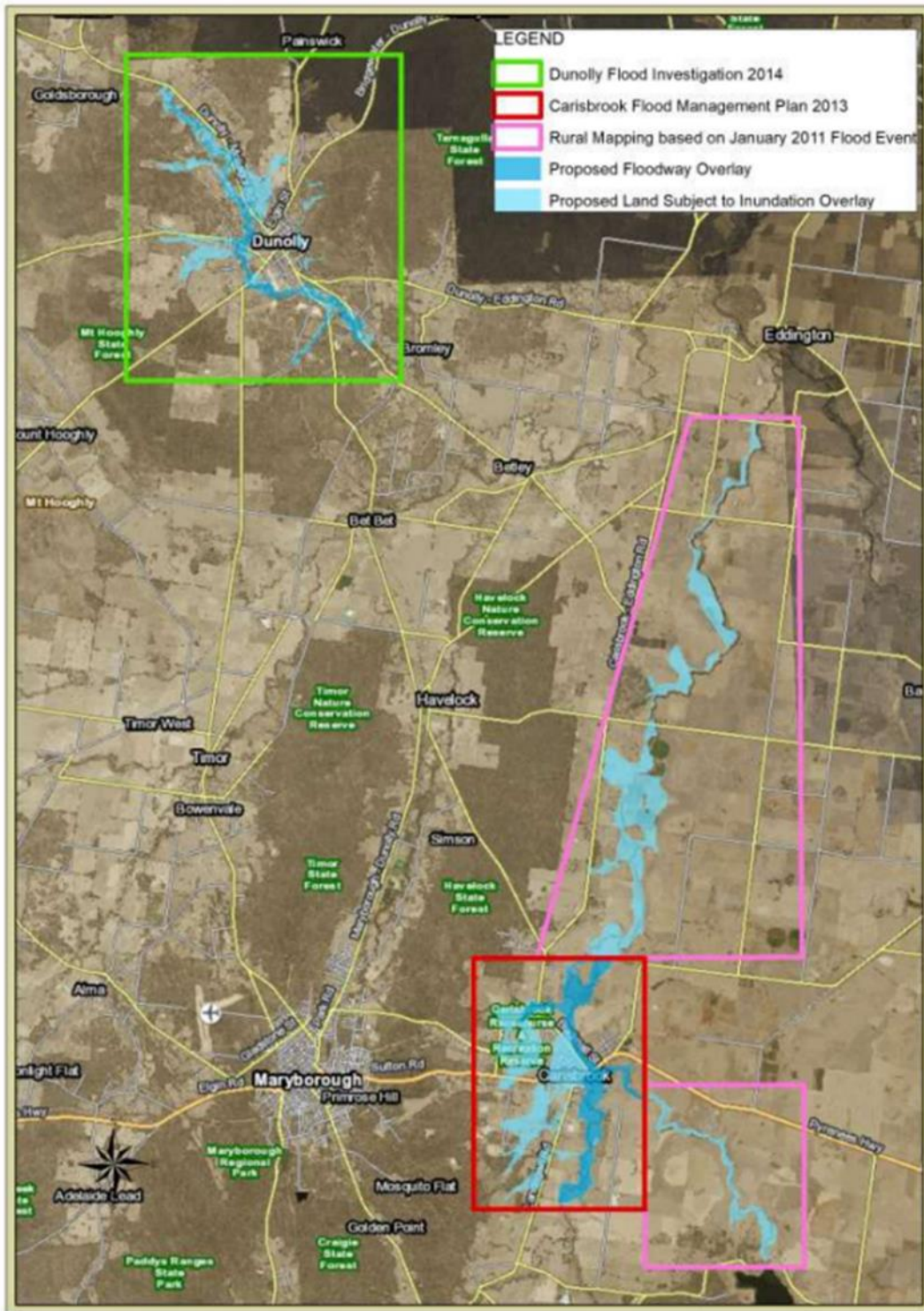
Future Amendment (once Western Levee works are completed)

- 342 properties will have flood controls remaining

Therefore, 81 properties will have flood controls removed.

The extent of the land affected is shown on the map titled Flood Study Investigation Areas in Carisbrook and Dunolly, reproduced as Figure 1.

Figure 1 Flood study investigation areas



The map in Figure 1 covers a large geographic area. Table 1 lists the planning scheme maps that apply to the affected locations (taken from Council's Part A submission).

Table 1 Mapping details

Reference	Information
Map 04	Dunolly retract LSIO and introduce LSIO2 and FO1 (large area)
Map 05	Dunolly retract LSIO and introduce LSIO2 and FO1 Thomas Street – Clark Street area
Map 07	Carisbrook and Dunolly retract LSIO and introduce LSIO2 and FO1 (large area)
Map 13	Carisbrook retract LSIO and introduce LSIO2 and FO1 – Heales Road to Victoria Street
Map 14	Carisbrook retract LSIO and introduce LSIO2 and FO1 – Veales Road to Pyrenees Highway
Map 16	Carisbrook South retract LSIO and introduce LSIO2 and FO1 (large area)
Map 19	Tullaroop Creek (Carisbrook South) retract LSIO introduce LSIO2 (large area)

1.2 Background

The Amendment is based on flood studies conducted by NCCMA with Council as well as on-the-ground situations from the events of 2010 and 2011. The Carisbrook Flood and Drainage Management Plan 2013 and the Dunolly Flood Management Plan 2014 are proposed to be included as background documents in the planning scheme.

The Council and the NCCMA jointly presented at the Hearing.

Mr Ben Tate, Principal Engineer of Water Technology Pty Ltd, the company engaged to undertake the studies and who was the principal author of the reports, submitted a written expert witness statement and presented at the Hearing.

1.3 Procedural issues

There were two sets of Directions for this matter. The first came from the Directions Hearing on 10 September 2020. This Hearing dealt with arrangements about the submissions and the manner of dealing with them as well as arrangements for the supply and distribution of information to assist all parties understand the issues. In addition, the Panel directed the Council to confer with submitter 11 to attempt to narrow the grounds of concern.

The second set of Directions was issued on 13 November 2020 to reorganise the Hearing to be held on-line after it was clear a face-to-face hearing was not possible under the Covid 19 restrictions. The Panel also cancelled the scheduled accompanied inspection that would have been part of the Hearing. An unaccompanied inspection took place on 18 November 2020.

The Panel notes that all Directions were satisfied.

1.4 Summary of issues raised in submissions

(i) Planning Authority and the Proponent

With the Council and the NCCMA working together, the Amendment is presented as a critical step in improving the planning controls on land that is prone to flooding. The Council and the NCCMA aim to create a system whereby landowners are better protected from flood

waters. They aim to do this by using the 2013 and 2014 flood studies to identify land subject to flooding and to apply either the FO or the LSIO as the appropriate overlay to the land. The Council also proposes a range of works to mitigate the impacts of flooding including the construction of levees.

Sitting behind the response lies the Carisbrook Flood and Drainage Management Plan 2013 and the Dunolly Flood Management Plan 2014 that are proposed to be included as Background documents in the planning scheme. These studies were commissioned by the Council and the NCCMA. Progressively, the work by Water Technology Pty Ltd was subject to peer review on the methodology, the findings, the extent of the overlay controls and the recommended mitigation works. The Panel was provided with copies of detailed background documents as listed in this report at Appendix 1 as tabled documents, to confirm the past work and to substantiate the suite of controls in the Amendment. The flood studies underpin the Council's approach.

(ii) Relevant agencies

Parts of the territory covered by the Amendment are near to the boundaries of areas of responsibility of other water authorities. They include:

- Coliban Water;
- Central Highlands Water;
- Goulburn Murray Water.

The Panel notes supporting submissions were lodged from these key agencies as well as the Environment Protection Authority.

The support of other water authorities is relevant.

(iii) Individual submitters or groups of submitters

Seven submissions were made by landowners split as one for Dunolly and six for Carisbrook.

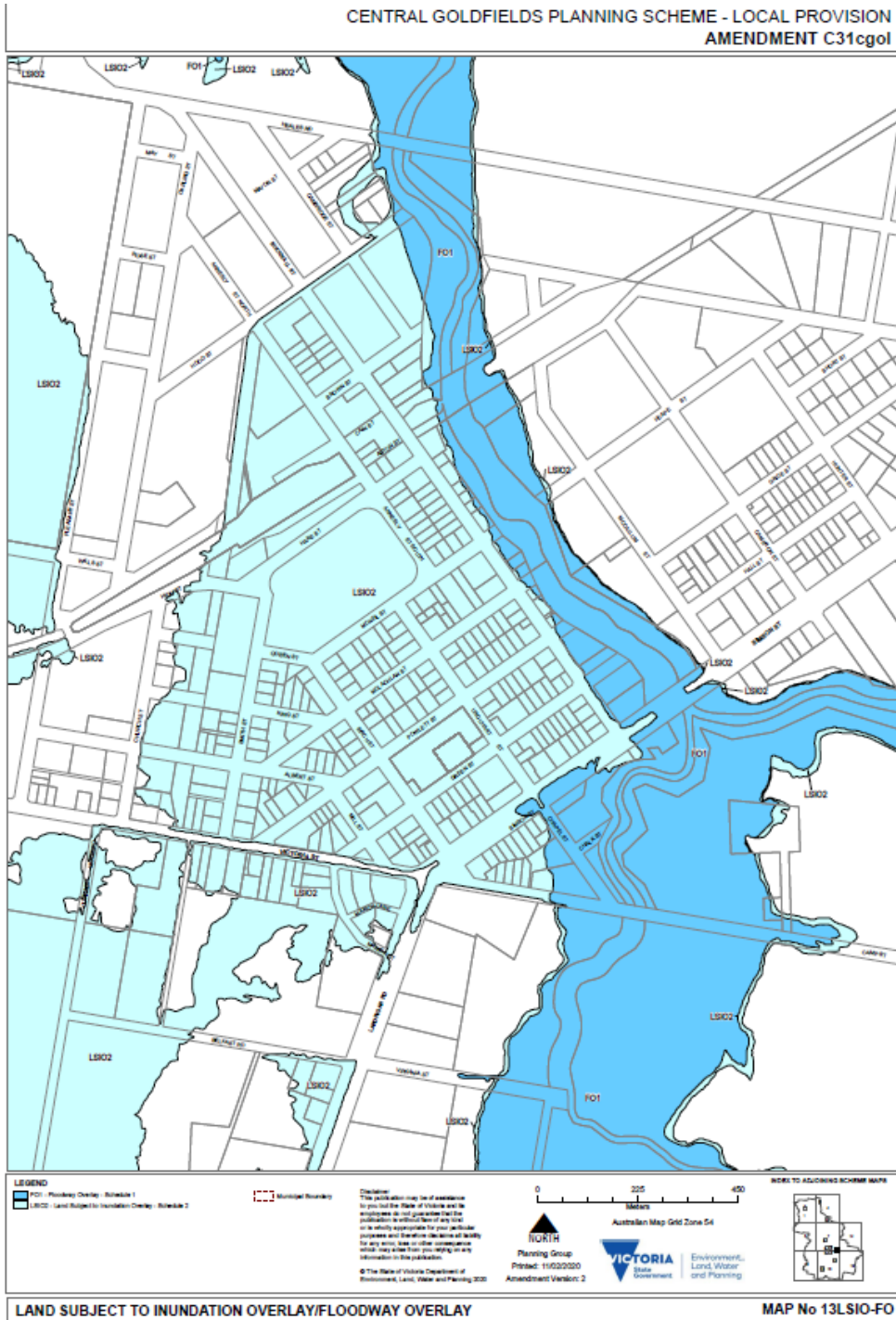
At Dunolly, the submitter was concerned with the accuracy of mapping. After consideration of the submission, and upon agreement between the Council and the NCCMA to exclude the property at 40 Pierce Hill Road from the Amendment, the submission was withdrawn. This was because recently completed flood mitigation works will improve drainage such that there is no longer a need to include a flood related overlay over the site and surrounding location. The Panel was asked to accept that an updated map would be prepared prior to adoption of the Amendment.

At Carisbrook, the issues ranged from:

- concerns at the methodology behind the flood studies were expressed in submissions that argued the work was technical and did not include field studies of the flooded areas in 2010 and 2011;
- concern at the accuracy and extent of the mapping;
- opposition to the inclusion of property on the basis that the particular land does not flood;
- doubt about the effect and form of the proposed flood mitigation works.

Figure 2 shows the extent of the LSIO and FO as proposed for most of the township area of Carisbrook. While not showing all of the township, the map does cover the properties of submitters 4 and 6 and illustrates the breadth of overlay boundaries of interest to submitter 11.

Figure 2 Map 13 as exhibited showing the LSIO and FO for (most of) Carisbrook



One submission (submission 1) was withdrawn by the landowner after the Council and the NCCMA explained why the property at 21 Bucknall Street, Carisbrook was included in the LSIO.

Two submitters (submissions 2 and 3) did not seek to present at the Hearing but relied on their submissions to critique the way the Carisbrook flood study was done and to say poor flood plain maintenance was a cause of flooding.

Submitter 4 lodged an alternative plan for the FO proposed for the land at 33 McCallum Street to reduce the extent of the overlay on his assessment of the spread of flood waters.

Submitter 6 opposed the Amendment. While opposing the LSIO on the property at 9 Bucknall Street, the core submission was to *“get the mitigation work done first and then amend the planning maps”*.

Submitter 11 was a combined submission from long time residents of Carisbrook with the interests of the town at the fore. As long time residents with experience in the flood events and with knowledge of how Carisbrook fared in the 2010 and 2011 events, they argued against the Amendment on the basis it would not mitigate flood impacts.

The Council referred all the landowner submissions to the NCCMA for review and comment, and to establish the strength of submission statements. The advice from the NCCMA shaped Council’s response to the submissions. The Council submitted:

- other than for Pierce Hill Road Dunolly, no changes be made as the mapping is accurate and evidence based;
- any changes to flood risk as a result of current and future mitigation works can be reviewed by a subsequent assessment and a future amendment can make changes to the planning controls if warranted.

1.5 The Panel’s approach

In the Directions first issued, the Panel sought to narrow the areas of disagreement with the group submitters, submission 11. The goal was to better understand why the submitter did *“not agree with the flood mapping drawn up for Carisbrook”*, why other nominated properties should be in the overlays and the reason why the submitter wanted to postpone the Amendment until after completion of the western levee now under construction.

The Panel was informed by the Council, and the submitters who met on 6 November 2020 and presented additional notes to add these points:

- 1990’s Carisbrook Reservoir works have increased overland flooding;
- poultry farms and other development in Flagstaff have increased overland flooding;
- the Cemetery, School, Mill and Leisure Centre should be included in LSIO2.

The Panel has been assisted by the depth of material provided to it. While a one-day inspection of Carisbrook armed with submissions and reports does not substitute for many years of living in Carisbrook or observations of past flood events, the Panel was able to assess all the points made by all the Carisbrook submitters, whether they presented or not.

From the inspection, the Panel formed a view of the relative merits of the pros and cons of the mitigation works, the maintenance of public spaces that could improve overland flows and the overlays as proposed.

The same circumstance applied for the inspection at Dunolly albeit the main purpose there was to confirm the proposed change to the Amendment.

The Panel was also assisted by Council’s Part A and Part B submissions and the manner of the presentations at the Hearing. The evidence statement of Mr Tate for the Council and the NCCMA complemented and expanded on the flood studies. His participation throughout the Hearing helped the Panel and the submitters.

The sincerity of the submitters and their earnestness for the best outcome for Carisbrook is obvious. As this report discusses in section 3.4 iii, the facts of the consultation programme behind the flood studies and their translation to planning controls, go against the negative submissions on that point. So too does the depth and manner of analysis in the flood studies,

the speedy and positive responses to suggested improvements to subsequent versions of the studies, as well as the endorsement of the recommendations for actions by third party reviewers.

This Report deals with the issues under the following two additional headings:

- Planning context
- Submitter issues.

2 Planning context

2.1 Planning policy framework

The Explanatory Report explained the purpose of the Amendment and the land areas affected by the new flood controls. It set out the necessary strategic justification for the Amendment.

In its Part B submission to the Hearing, Council expanded on how it saw the Amendment supporting and implementing the State and local legislative frameworks, Ministerial Directions and Planning Practice Notes. Each of those three aspects is central to the Panel's consideration of how the Amendment responds to strategic planning policy, the selection and use of appropriate overlays, and the technical aspects of the problem being addressed.

The Part B submission:

- examined relevant elements of State and Local Policies to conclude the Amendment met the necessary aspects of policy;
- dealt with technical considerations that sit behind the new controls that make up the Amendment relying on the review of the flood events and the expert advice in the flood studies, as well as the recommendations for mitigation works;
- reviewed and concluded the Amendment complied with all the relevant Ministerial Direction and Planning Practice notes about the selection of the overlays to be used in an Amendment of this nature.

The information submitted confirmed that the Council has:

- addressed State Policy in the preparation of the Amendment;
- responded to its own Local Policy;
- considered relevant other policies including the Loddon Mallee South regional Growth Plan (March 2014);
- complied with Ministerial Directions on matters including the form and content of the planning scheme;
- complied with relevant Planning Practice Notes including, and importantly, on the selection and use of overlays;
- processed the Amendment and dealt with submissions as required by the Planning & Environment Act (the Act).

The Panel is satisfied the Amendment has the necessary strategic planning support and justification. There is no question that State and Local Planning policy support action to avoid and minimise flooding. In this instance, however, the Panel sees planning policy support as secondary to taking action to better protect the townships of Dunolly and Carisbrook, as well as many rural properties, from the effects of future flooding that will inevitably occur.

2.2 Planning scheme provisions

Council's Part A submission spelt out the specific changes to the planning scheme.

The exhibited ordinance changes include:

- amending Clause 21.09 of Municipal Strategic Statement to highlight the importance of managing development within land in the Land Subject to Inundations Overlay and discouraging development on land in the FO in the townships of Carisbrook and Dunolly;

- inserting Clause 44.03 (Floodway Overlay) into the planning scheme;
- inserting Schedule 1 to Clause 44.03 (Floodway Overlay) to identify properties that experience flooding greater than 500 millimetres flood depth and provide permit exemptions;
- amending the Schedule to Clause 44.04 (Land Subject to Inundation Overlay) to identify it as Schedule 1 to the LSIO;
- inserting Schedule 2 to Clause 44.04 (Land Subject to Inundation Overlay) to identify properties that experience flooding less than 500 millimetres flood depth and provide permit exemptions;
- amending Clause 72.08 to include the Carisbrook Flood and Drainage Management Plan 2013 and the Dunolly Flood Management Plan 2014 as Background documents in the planning scheme.

The exhibited mapping changes:

- amend the following new overlay maps 4LSIO-FO, 5LSIO-FO, 7LSIO-FO, 13LSIO-FO, 14LSIO-FO, 16LSIO-FO, 19LSIO-FO and 20LSIO-FO.

In its Part A and Part B submissions, Council explained changes to the exhibited form of the Amendment. In addition, Council advised that it wished to correct an omission from the planning scheme and a wording error as explained below in section 2.3.

2.3 Changes to the exhibited Amendment

At paragraph 164 and onwards in its Part B submission, Council sought the following changes to the Amendment:

- revised mapping for land in Dunolly where flood mitigation works have reduced flood risk (this was discussed at paragraph 166);
- changes to the exhibited amendment local planning policies and provisions (this was discussed at paragraph 168);
- changes to the exhibited amendment MPS (this was discussed at paragraph 170);
- inclusion of formally adopting the Carisbrook and Dunolly flood studies (the Plans) at the future Council meeting where the Planning Panel Report is presented (this was discussed at paragraphs 172 to 176).

Each of those issues is discussed in section 2.4 and the particulars of the changes are set out at paragraph 70 of Council's Part B submission at paragraphs 164 and 168.

At paragraph 70, Council submitted that there was an inadvertent omission of reference to the LSIO in Clause 74.01 that occurred with the processing of Amendment C32cgol. Council identified that an " *error identified in Amendment C32cgol is that the Land Subject to Inundation (LSIO) was not added to the Schedule to Clause 74.01 Application of Zone Overlays and Provisions*". That omission is sought to be corrected under this Amendment.

The need to correct the wording error in Schedule 74.01 comes because of ordinance changes to the planning scheme and arises upon the recent approval of Amendment C32cgol on 10 September 2020, which, as required by DELWP, reformatted the planning scheme.

At paragraph 168, Council submitted:

The PPF Translation has effectively implemented the identification of flood risk in the local planning policies and provisions. Council seeks to change to the exhibited Amendment C31cgol as follows:

- Local Policy

- No change
- Schedule to Clause 74.02 Further Strategic Work
 - No change
- Schedule to Clause 74.01 Application of Zone, Overlays and Provisions
 - Insert “The Floodway Overlay to cover areas identified from detailed flood studies as having a higher risk of flooding or the entire 10% Annual Exceedance Probability flood extent where a detailed flood study has not been undertaken.
 - The Land Subject to Inundation Overlay to cover areas identified as having a lower risk of flooding or the entire 1% Annual Exceedance Probability flood extent where a detailed flood study has not been undertaken.”

2.4 Discussion

No submissions were made to the direction or content of any of Council’s proposed changes. Though there was criticism of the extent of the application of the overlays, and impliedly the depth of flow that leads to the choosing of the FO and the LSIO, there was no contest about the use of the FO or the LSIO.

There was no challenge to the breadth of exemptions from the need for a permit under the proposed Schedule 2 to the LSIO.

There were no submissions about the changes to the policy provisions which are machinery, or the correction of the inadvertent omission.

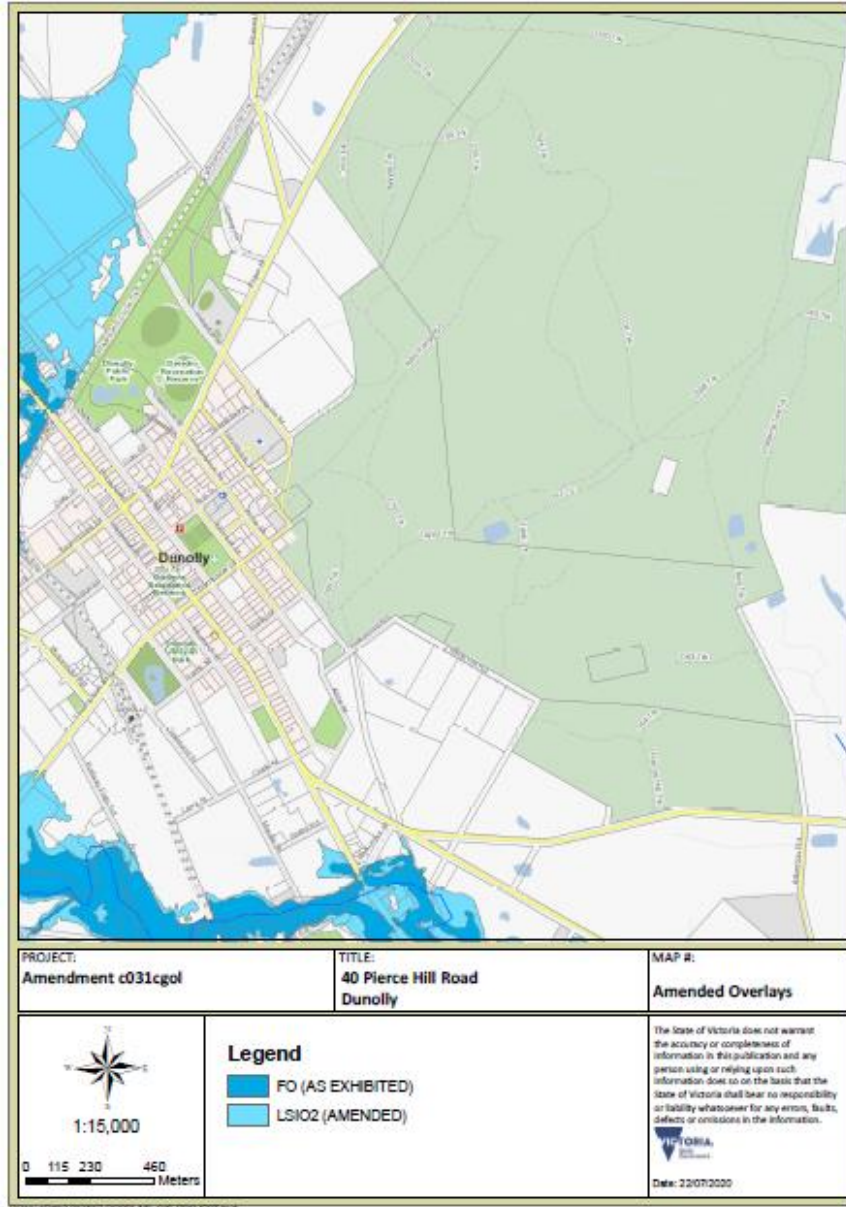
The lack of submissions is understandable. All parties accept the need for better planning controls. All submitters accepted the extent of the controls. All submitters accepted the form of the controls with the overlays despite their reservations about the extent of overland flows.

(i) Dunolly mapping

Change number one sought by Council sought to replace the exhibited LSIO/FO at map 5 with a map revised to accommodate the recent flood mitigation works have that reduced flood risk. No revised map was provided to demonstrate this agreed change to the area of Pierce Hill Road, Dunolly.

Council has requested that the Panel recommend the adoption of the variation. This approach was flagged and accepted by Council at its meeting on 25 August 2020 where it considered and adopted the response to submissions. At that meeting, an attachment to the report showed a map to demonstrate the change. That map is reproduced (Figure 3). The Panel notes the map is the same as presented at the Hearing as Figure 17 in Council’s Part B submission.

Figure 3 Proposed replacement map for Dunolly



The Panel accepts this approach. It will allow Council time to have the relevant map prepared and included in the Amendment for adoption. The Panel recommends adoption of an LSIO2 map in the form proposed by Council.

(ii) Changes to local policy in the planning scheme

Change number two sought by Council means not pursuing the exhibited proposal. Whereas the exhibited Amendment proposed “amending Clause 21.09 of Municipal Strategic Statement to highlight the importance of managing development within land in the Land Subject to Inundations Overlay and discouraging development on land in the Floodway Overlay in the townships of Carisbrook and Dunolly”, no change is now proposed. This is because, upon approval of Amendment C32cgol, the Schedule to Clause 74.02 Further Strategic Work now has a suitable strategy - “Identify flood prone areas and implement adopted flood mitigation studies”.

There are two elements to change number three sought.

The first part involves a change to the Schedule to Clause 74.01 Application of Zone, Overlays and Provisions to include explanatory words about the application of the FO and the LSIO as identified in section 2.3. The Panel accepts that this proposal is proposed to satisfy the requirement of Clause 74 where a schedule to the Clause must include a general explanation of the relationship between the elements of the planning scheme and the controls on the use and development of land in the scheme. The Panel also accepts that the change is policy neutral.

The second element of the proposed change is to not pursue the intended amendment to the Municipal Planning Statement (MPS). This is because dot point 3 in Clause 02.03-3, Environmental risks and amenity, now has an action for Council of “*Minimising the risk of flooding*”.

(iii) Adopting the flood studies

The Amendment includes the flood studies, the Carisbrook Flood and Drainage Management Plan 2013 and the Dunolly Flood Management Plan 2014 (together referred to in this report as the Plans), as Background documents in the planning scheme. The effect of the Amendment is to replace the existing schedule with one that refers to those Plans.

With the status as Background documents in the planning scheme, the Plans can be considered in the assessment of planning permit applications for land use activities and for buildings and works proposals triggered by the overlays. Taking the positive line, when the Amendment is approved, the Plans will become part of the planning scheme. The Council sought a recommendation that it should take the administrative step of adopting the Plans before it moves to adopt the Amendment. The Panel’s role is to recommend inclusion or otherwise of the Plans in Clause 72.08. The Panel recommends that. However, the Panel does not see it necessary for it to make a recommendation for the formal adoption of the Plans; the Panel sees that as a decision for Council.

During the presentation of his written evidence, Mr Tate sought a correction to table 6.2 in his statement. The table was used to produce an assessment of design flood extents on the Tullaroop Creek. It brought together the discussion in the written evidence statement about how the flood modelling took various factors into account to produce a design approach. Mr Tate drew attention to an incorrect assessment of rainfall that affected peak flow figures in the table. After explaining that the error had no real consequence to his conclusions, he offered to provide a corrected table.

At the time of reporting, the table has not been received by the Panel. The Panel regards this as an oversight but not one that condemns the Amendment. The Panel accepted the explanation for the revision of the table during the presentation of the evidence. Receipt of a revised table is no more than confirmation the correction is made.

As the Carisbrook Flood and Drainage Management Plan 2013 is to be included in the planning scheme, it is therefore important that it be a complete report. For that reason, the revised table is relevant. The Panel suggests the Council should include a true copy in the report before adopting the Amendment.

To ensure the report is otherwise as presented to the Panel, and therefore the same as viewed by ratepayers, the Panel suggests the Council requires that Mr Tate include a note in the front of the report along the lines that table 6.2 has been substituted but that in all other respects, the report is as considered during the processing of the Amendment.

2.5 Conclusions

Strategic planning support

The Panel is satisfied the Amendment has the necessary strategic planning support. There is no question that State and Local Planning policy support action to avoid and minimise flooding or any doubt that the Amendment meets any process test.

Changing the Dunolly mapping

The Panel accepts the approach to respond to the late agreement to vary the Dunolly mapping by preparing a map, in the form included here as Figure 2, before the Amendment is adopted.

Post exhibition changes to the Amendment

The Panel accepts the post exhibition changes to the Amendment; including making no change to the MPS or to the Schedule to Clause 74.01.

The adoption of the proposed change to Clause 72.08 is accepted. Including the Plans in the planning scheme is an appropriate way to record the understanding of the 2010 and 2011 flood events and for the translation to planning controls.

Administrative actions

The Panel leaves the course of action about adoption of the Plans to the Council on the basis that is an administrative action. While it makes sense to take that course, it is not essential for planning purposes.

Similarly, the Panel points to the intended replacement of table 2 in the evidence statement of Mr Tate as an administrative action. For transparency, the Panel suggests a note to record the report has been revised be included in the front of the document.

Overall conclusions

For the reasons set out, the Panel concludes that the Amendment is supported by, and implements, the relevant sections of the State policy in the Planning Policy Framework, and is consistent with the relevant Ministerial Directions and Practice Notes. The Amendment is well founded and strategically justified, and the Amendment should proceed subject to addressing the more specific issues as discussed.

While noting that support, the bottom line in this instance is the Panel considers satisfying planning policy as less important than the practical steps to take action to better protect the townships of Dunolly, Carisbrook and numerous rural properties, from the effects of future flooding that will inevitably occur.

The Amendment and the post exhibition changes require recommendations from the Panel to allow the planning authority to adopt them as part of the Amendment. Each of the changes was well advertised and covered in submissions; the changes follow as a step in the amendment process. The Panel has no issue with any of the changes now proposed.

2.6 Recommendations

The Panel recommends that the Amendment be adopted with changes as discussed at the Hearing. The Panel recommends the Amendment proceed subject to the following:

1. **Amend Clause 21.09 of Municipal Strategic Statement to highlight the importance of managing development within land in the Land Subject to Inundation Overlay and discouraging development on land in the Floodway Overlay in the townships of Carisbrook and Dunolly.**
2. **Insert Clause 44.03 (Floodway Overlay) into the planning scheme.**
3. **Insert Schedule 1 to Clause 44.03 (Floodway Overlay) to identify properties that experience flooding greater than 500 millimetres flood depth and provide permit exemptions.**
4. **Amend the Schedule to Clause 44.04 (Land Subject to Inundation Overlay) to identify it as Schedule 1 to the Land Subject to Inundation Overlay.**
5. **Insert Schedule 2 to Clause 44.04 (Land Subject to Inundation Overlay) to identify properties that experience flooding less than 500 millimetres flood depth and provide permit exemptions.**
6. **Amend Clause 72.08 to include the Carisbrook Flood and Drainage Management Plan 2013 and the Dunolly Flood Management Plan 2014 as Background documents.**
7. **Amend Schedule to Clause 74.01 Application of Zone, Overlays and Provisions, to include reference to the Floodway Overlay and the Land Subject to Inundation Overlay as follows:**
 - a) **The Floodway Overlay to cover areas identified from detailed flood studies as having a higher risk of flooding or the entire 10 per cent Annual Exceedance Probability flood extent where a detailed flood study has not been undertaken.**
 - b) **The Land Subject to Inundation Overlay to cover areas identified as having a lower risk of flooding or the entire 1 per cent Annual Exceedance Probability flood extent where a detailed flood study has not been undertaken.**
8. **Adopt the following new overlay maps 4LSIO-FO, 5LSIO-FO, 7LSIO-FO, 14LSIO-FO, 16LSIO-FO, 19LSIO-FO and 20LSIO-FO.**
9. **Amend Map 13LSIO-FO as identified in Figure 17 of Council's Part B submission (see Figure 3 in this report).**

3 Submitter issues

3.1 The issues

Only seven submissions from landowners were made on the Amendment. Two of them were withdrawn after consultation with Council and the NCCMA.

The Council made the point that this was a low number given the number of properties within the areas affected by it. That is a logical and easy conclusion to draw with 911 properties affected. The Panel agrees. However, the number does not represent the true number of people who engaged in the public consultation that occurred over time nor does it detract from the extent of feeling expressed in the submissions.

As there were no issues to be heard for Dunolly, the Hearing concentrated on three submissions about Carisbrook:

- from Mr Barry Rinaldi who sought a reduction of the extent of the FO on his property at 33 McCallum Street;
- from Mr Terry Hodgkins of 9 Bucknall Street who sought relief from the LSIO and submitted that the Amendment should be put on hold until the mitigation works associated with the western levee are completed;
- from Ms Trish Coutts, Mr Keith McLeish and Ms Helen Broad, as joint submitters of a statement of general concern with the Carisbrook Plan. The submission followed their participation during the consultation phase of the studies. Ms Coutts and Mr McLeish expressed their concern through a presentation at the Hearing about what they saw as the deficiencies of the Carisbrook Plan.

Council referred all landowner submissions to the NCCMA for review and advice, particularly about the accuracy of mapping. In addition, the unresolved submissions were referred to Mr Tate for his assessment and comment to the Panel.

Council's Part B submission and the expert witness statement commented on the submissions. The comments are used in this section of the report to discuss the submissions from the three presenters.

3.2 Particular submissions

(i) Submitter 4: land at 33 McCallum Street Carisbrook

Mr Rinaldi was unable to participate in the Hearing. Nevertheless, his submission was thoroughly considered.

As exhibited, the Amendment varies the current LSIO that applies and replaces it with a FO. In answer to a request from the Panel, the NCCMA advised that 0.3 hectares of the 2.4 hectare property is covered by the LSIO. The area to be covered by overlays through the Amendment is 1.32 hectares.

The subject property abuts the floodway along the Tullaroop Creek where there is a broad, open expanse that accommodates excess flow from the Creek. Mr Rinaldi submitted that if the water level reached the extent of the FO as proposed on his land, the township would be 7 metres under water.

Mr Rinaldi's submission included a map, reproduced (Figure 4) to show how he believed the overlays should be applied. The black line in the map is his alternative border.

Figure 4 Mr Rinaldi’s alternative overlay map for 33 McCallum Street, Carisbrook



In response, Council noted¹ the subject site is partly constrained by the LSIO and advised the Panel it “relied on the recommendations of the Flood Management Plan and post submission comments from the NCCMA, and is of the view that the proposed overlays be adopted as exhibited for this land”

This response was repeated with more detail in the presentation at the Hearing. Council presented photos to demonstrate the extent of the flood level in 2011, which, it said, disproved Mr Rinaldi’s point. Those photos are reproduced in Figures 5, 6 and 7.

¹ Part A submission page 24.

Figure 5 Proposed mapping 33 McCallum Street, Carisbrook



Figure 6 Aerial photo 1 of Carisbrook taken on 14 January 2011



Figure 7 Aerial photo 2 of Carisbrook taken on 14 January 2011



Mr Tate advised the Panel that his interpretation of aerial flood imagery from January 2011 indicated that flooding on the subject property covered a wider area than that suggested by Mr Rinaldi. Mr Tate advised that given that the flood extents are based on LiDAR data which accurately represents the land surface, and that the calibration of the flood model was accepted by the community as a good match, it is expected that the flood extents in this area will be reasonably accurate. He supported the Council and the NCCMA who recommended the proposed overlays be adopted as exhibited for the subject land.

(ii) Submitter 6: land at 9 Bucknall Street Carisbrook

Mr Hodgkins owns the land at 9 Bucknall Street. In his submission he describes the shop front of the building on the land, the former Crook's Butcher Shop, as well over 150 years old. He relied on the condition of the rear mud brick section of the building, which he says, while conceding flood flows in 2011, would have shown adverse effects if the site had frequently flooded. Mr Hodgkins relied on this situation to rebut a history of flooding. He said the subject site should be free of an overlay.

Mr Hodgkins also submitted that the Amendment should be put on hold until the mitigation works associated with the western levee are completed.

In his presentation at the Hearing, Mr Hodgkins tabled data from Goulburn Murray Water about rainfall at the time of the 2010 and 2011 events to support his argument that the 2010 event had a causal effect on the severity of the 2011 event. His submission was that the impact of the floods would be reduced by more and better maintenance of public facilities including culverts, drains and gutters.

At paragraph 16 of the Part B submission, Council gave credence to Mr Hodgkins' data. Council advised:

The January 2011 flood event had devastating impacts to the town with 298 of the town's 330 residential properties impacted. The flooding was the worst in living memory and occurred after heavy rains of 230mm fell in the days preceding 14 January 2011. It is estimated that the January 2011 flood event was larger than a 1% Annual Exceedance Probability (AEP) flood event, being in the order of a 135 year ARI flood event.

In response to the submission, Council provided images of the subject property which are reproduced in this report at Figures 8 and 9.

Figure 8 shows the extent of the current LSIO that applies to the subject site as well as the increased overlay boundary.

Figure 8 Current overlay extent at 9 Bucknall Street, Carisbrook

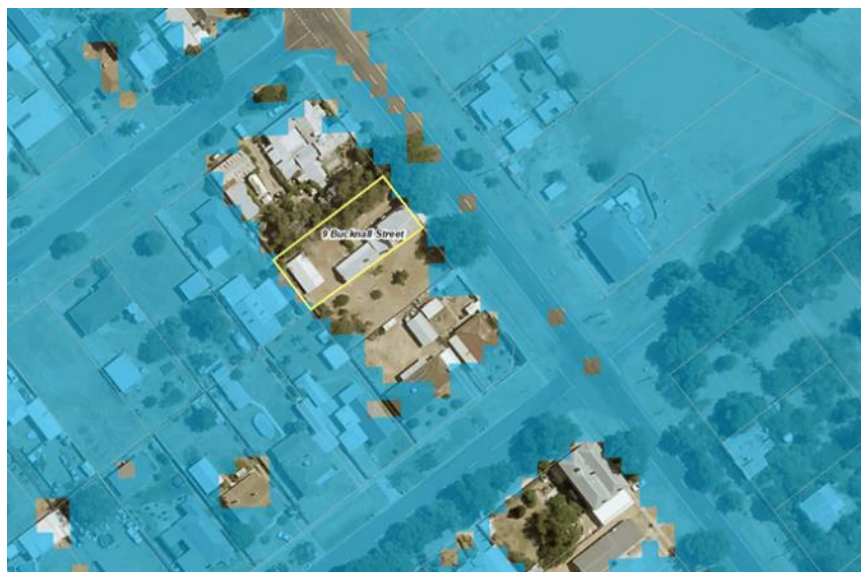


The Part B submission at paragraph 92 onwards explained the approach taken to deal with land that is outside the boundary of a 1 per cent AEP flood but which would be denied access in the event surrounding areas were flooded. The submission stated:

92. The amendment proposes to change the CGPS mapping whereby the LSIO applies to all land that may be affected by the 1% AEP flood – either directly through flood inundation upon the land or indirectly by access to the site impeded by flooding. This means that areas, or islands, of elevated land bound by the LSIO have been added to the LSIO despite not being within the 1% AEP flood area. This is to reflect that the land bound by the LSIO is at risk from flooding, due to access being impeded by flooding.
93. The Planning Practice Note 12: Applying the Flood Provisions in Planning Schemes, a Guide for Councils – June 2012 provides guidance about applying the flood provisions in planning schemes. The practice note explains that flood risk is identified by factors considering land use, duration of flooding, available flood warning time, size and frequency of flood, rate of rise of floodwater, access and evacuation, depth and velocity of floodwater, available flood storage capacity and environmental values. Each of the flood risk factors determine whether the site should be included in a floodway (and constrained by an overlay) (pg. 3).
94. In Bucknall Street there are six “islands”, i.e. land above the 1% AEP flood area that have been included within the proposed LSIO. Figure 2² below shows the location of these islands. Whilst the land within these islands is technically not subject to flooding in a 1% AEP flood, the land is entirely isolated during a flood event. In addition, the land levels are less than 300mm above the 1% AEP flood level. Therefore, to ensure that new development adequately considers flood risk, these areas are proposed to be included within the LSIO.

Mr Hodgkins’ property is captured by that approach. This is demonstrated in Figure 9 which is a Council and NCCMA image of the 1 per cent AEP flood extent on the subject site.

Figure 9 9 Bucknall Street in a 1:100 flood event



At paragraph 127 of its Part B submission, Council advised:

It is important to note that this property does not benefit from the proposed mitigation works from the completion of Stage 4 of the Western Levee. The mitigation works address overland flooding from the local catchment, not riverine flooding from McCallums and Tullaroop Creek. The area surrounding the property will still be subject to inundation in the 1% AEP flood event and still be covered by an overlay.

The expert evidence of Mr Tate was that the January 2011 event is one of, if not the largest flood event experienced since the Hodgkins building was constructed. Mr Tate argued that because the building is mud brick and is still standing does not provide any credible evidence

² Figure 2 in the Part B submission is not included in this report.

that the flood study has understated the likelihood of the January 2011 event or the design 1 per cent AEP event.

Mr Tate also pointed out that properties in Bucknall Street do not benefit totally from the western levee now under construction. It will have a beneficial effect but will not solve all flood problems. This is supported by a statement in the 2013 Review of Carisbrook Flood and Drainage Management Plan - Final Study Report by peer review consultants AECOM, at section 5.3 Revised Mitigation Packages, where the consultant warned:

- l) The focus of the preferred mitigation option is 'protection' from flooding of the local catchments. The proposed Western Levee will not reduce flood levels in Tullaroop Creek or prevent flooding of Carisbrook caused by the break out of flow from Tullaroop Creek.

The Council relied on the NCCMA review of the mapping to submit that the proposed overlays be adopted as exhibited for the subject land.

(iii) Submitter 11: general submission from residents

As summarised in section 1.4, submitter 11 was a combined submission from long time residents of Carisbrook with the interests of the town to the fore. Ms Coutts, Mr McLeish and Ms Broad are residents with experience in flood events and with knowledge of how Carisbrook fared in the 2010 and 2011 events. In a submission lodged during exhibition, they wrote "*We do not agree with the flood mapping drawn up for Carisbrook*". In reply to the Council request for further information to better understand the submission, the group:

- submitted that if the Carisbrook township is included in the proposed mapping, other land should be included in the overlays – the submission nominated the Carisbrook Primary School, Tullaroop Leisure Centre and the Chaff Mill;
- questioned the basis of the mapping – saying the process needed to be explained because of doubts about the reason for past flooding and the way it was represented on maps;
- submitted that the planning scheme amendment should not be finalised until the western levee is built – the basis was the levee would change the flow of water such that the exact nature of the flows warranted delay until the benefit of the levee was known;
- blamed the Council breach of the Carisbrook Reservoir as a cause of flooding;
- called for a public meeting to explain the Amendment.

After the Panel directed discussions between the Council and the submitter, the parties met on 6 November, 2020. The Part A submission reported the meeting which:

- affirmed the request for additional property to be included in the mapping;
- sought a commitment that Council immediately progress with a section 20(4) amendment when the western levee is complete to remove from the overlays the land no longer subject to planning controls to identify 1 in 100 year flood risk.

In the presentation to the Hearing, Mr McLeish provided an insight into why flooding spreads over a wide area occurs and how it flows in faster than it flows out. He said the flat topography failed to divert overland flows and blamed inefficient and blocked culverts and channels as well as poorly maintained bridges and railway crossings.

Ms Coutts offered specifics as to why some parts of Carisbrook flooded and other parts did not. She spoke with authority about areas that flooded in 2011 to question why they were omitted from the overlays. She also questioned survey levels on which modelling was based,

doubted the sufficiency of irregular maintenance works and criticised the communication programme for leaving Carisbrook residents uninformed about progress with the studies and the recommended outcomes.

3.3 Evidence on the submissions

In section 8.4 of his evidence statement, Mr Tate gave his response to the submission. In summary, Mr Tate pointed out:

- the mapping is based on the latest 1 per cent AEP flood mapping incorporating the currently completed mitigation works. It does not include the western levee works that have just started construction. Further, the 1 per cent AEP event is much smaller than the January 2011 event, thus the area surrounding the School, Leisure Centre and Chaff Mill are not shown as inundated;
- the reason the School and Chaff Mill are not being included is because they are outside of the 1 per cent AEP flood extent. He said while Ms Coutts is correct that this area was inundated in the January 2011 event, the approach is to limit the overlay boundaries to the 1:100 line;
- since the reservoir was breached as an emergency measure during a past event, the township has experienced two of the largest floods on record in the area. The reason for the inundation of Carisbrook during September 2010 and January 2011 is the magnitude of the storm event, not because of the reservoir breach.

3.4 Discussion

(i) Submitter 4: land at 33 McCallum Street, Carisbrook

It was a dry and sunny day when the Panel inspected the subject site from outside the boundary on the south and west sides. There was running water in the Creek but no obvious way of assessing the accuracy of Mr Rinaldi's submission about past flood levels.

The overlays are to apply to an open expanse at the rear of (Figure 10) and on (Figure 4) Mr Rinaldi's property.

Figure 10 Land behind 33 McCallum Street, Carisbrook



The part of the property affected by the overlay is the rear section of a well-maintained garden area with no obvious building improvements (Figures 11 and 12).

Figure 11 Looking toward 33 McCallum Street, Carisbrook from the south-west



Figure 12 The rear of the property at 33 McCallum Street, Carisbrook



In these circumstances, if Mr Rinaldi is right in his submission and the flood line is not correct, no great imposition will result. At worst, Mr Rinaldi, or any subsequent owner, would have to apply for a planning permit should any buildings or works be proposed in the area of the overlay.

On the basis of the material available to it, the Panel accepts the Council submission and recommends no change to the overlay mapping for 33 McCallum Street.

(ii) Submitter 6: land at 9 Bucknall Street Carisbrook

The Panel notes the subject land is one of six sites in Bucknall Street with the same site conditions (some are shown in Figure 8) and the common approach taken with them. Indeed, submitter 1 withdrew their submission after having the approach explained and understanding that safe access and egress is important. In withdrawing, that submitter wrote *“I do now understand that planning practice requires council to consider factors such as access as well as the probability of actual flooding, when drawing up the overlay.”*

The Panel accepts the approach to the island sites. The conclusion is that no change needs to be made to the mapping for the subject site at 9 Bucknall Street.

(iii) Submitter 11: general submission from residents

The response to the written submissions from the group are outlined in Council's Part A submission with more details in paragraphs 138 to 149 of the Part B submission.

Council advised that it relied on the recommendations of the Flood Management Plan and post submission comments from NCCMA, and is of the view that the proposed overlays be adopted as exhibited.

The Part B submission provided some elaboration. Council submitted (from paragraph 144):

The information behind the Amendment comes from a collection of data sources obtained during the last decade, with continual updating and refining by the NCCMA.

The information includes the Carisbrook Flood and Drainage Management Plan 2013 itself which is a comprehensive technical investigation of flood behaviour for that catchment.

These flood studies show the distribution, extent, levels and velocity of floodwaters across sections of the floodplain for a range of different flood events. This study includes topographic and physical surveys, field surveys, hydrological and hydraulic analysis and involved extension community consultation.

Public consultation

Council disagrees there was a lack of public consultation across the years of the study and the preparation of the Amendment.

The Panel agrees the record shows a history of consultation. The Panel notes for example:

- references in the Council submissions to the consultation programme;
- statements by Mr Tate about the extent of consultation;
- two question and answer brochures prepared and distributed by the Council about progress with the studies (these are listed as tabled documents to this report);
- references in expert reports to consultation. For example, in the 2018 Carisbrook Flood Study Review by the peer review consultant Jacobs Group (Australia) Pty Limited, at section 5.13 under the heading 'Community consultation', the report stated:

The Carisbrook community was heavily involved in the development of the Flood Plan and there is value in reengaging with the community to disseminate information regarding the process of the Plan and future actions. This action should occur as a result of this review once the way forward has been agreed.

Correcting this Amendment

Council affirmed its position that once the Stage 4 of the western levee is completed, they will progress the steps required with Department of Environment, Land, Water and Planning (DELWP) to complete an amendment under section 20(4) of the Act. The caveat with this 'commitment' is that the timing is dependent upon the completion of the western levee. However, the last stages of the project are yet to be funded and funding is some time away (the Council estimates that to be two years).

In answer to a question from the Panel, Council advised that positive discussions had been held with officers at DELWP about the scope of a correcting amendment satisfying the principles of a section 20(4) amendment.

The key message from the submitters, which the Council accepts, is that the outcomes need to be assessed and speedy action needs to be taken where warranted.

Maintenance of public assets

Both submitter 6 and submitter 11, along with submitter 2 who did not present at the Hearing, questioned the maintenance of public assets as a way of clearing flow paths.

In answer to a question from the Panel, Council advised that it undertakes maintenance works in and around public assets but does not have a programme of routine works. Past works were listed in Mr Tate's evidence at section 6.2.3, under a heading Changes in Floodplain Since Study. There he listed a series of works that he says "*have been completed which has slightly altered flood behaviour*". The works include:

- a clean out of bluestone drains;
- vegetation removal works along McCallum and Tullaroop Creek between Camp Street and the Railway line;
- construction of Pleasant Street levee north of the railway line and other works in the street;
- several drainage upgrades around town that will impact local flows in storm events, **but which, he states, are unlikely to have major impacts on larger magnitude events.**

(Panel emphasis)

The Panel notes Mr Tate's further advice in his evidence (at section 8.5) that vegetation removal works along the (Tullaroop) creek have been constructed and demonstrated to have reduced flood levels.

The Panel sees these statements from Mr Lane as support for the submissions that the Council should programme works on public assets. It is a matter for Council and not this Panel but works on a more frequent basis, and perhaps seasonally, are likely to assist overland flows.

The Panel accepts Mr Tate's advice emphasised above about the narrow benefit of such works. Mr Tate is supported in that opinion in a peer review report by the consultant AECOM, in a 2013 Review of Carisbrook Flood and Drainage Management Plan - Final Study Report. The consultant warned, at section 5.3:

m) The reliance on 'maintenance of the waterways' to reduce flood levels through the township is not recommended. Based on the information provided in the Final Study Report, it is not possible to determine what these works will include and how they will be implemented and maintained. We do not believe that this is a sustainable mitigation option, and should not be included in any mapping outputs of this investigation that are used for planning or emergency services purposes. The long term viability of this option is questioned.

AECOM further advised:

Maintenance of the waterways is not considered to be a sustainable mitigation option that will protect the town from flooding. The 0.25m reduction in flood levels achieved by changing modelling factors cannot be translated into a technical specification that can be implemented and maintained.

The Panel sees a distinction between the clearing of public assets and the greater task of clearing waterways. While the Panel agrees with the submitters about clearing obstructions from public assets to assist flow paths, the issue has no effect on the passage of the Amendment.

3.5 Conclusion

Whereas submitters 4 and 6 focused on their property, submitter 11 looked at the Amendment for what it meant for Carisbrook. Both approaches are reasonable. The different perspectives caused the Panel to look differently at the thrust of the submissions and to measure them against differing criteria. For example, with the individual property submissions, the Panel has considered the appropriateness of the way the subject sites are being treated apropos sites with similar circumstances. With the general submission by the group of concerned citizens, the Panel has considered the bigger picture and consider the problem the Amendment sets out to solve, and how it achieves the goal.

The Panel has sought to do that for the benefit of the community.

The Panel makes no recommendations for change to the Amendment on the basis of submissions.

While there are matters that can be improved, including communication; actions that can be speeded up, including levee construction and funding future works; and actions that can be taken to better maintain public assets, overall, the Panel concludes that:

- no changes are warranted to the mapping for Carisbrook;
- the submissions are not substantive enough to stop the Amendment from proceeding.

Appendix A Document list

No.	Date	Description	Presented by
1	16 Nov 2020	Part A submission with appendices: <ol style="list-style-type: none"> 1. Officer Report to Council Seeking Authorisation 2. DELWP Letter providing authorisation 3. Officer Report to Council Seeking Minister for Planning to Appoint Planning Panels Victoria including Submission Table as Appendix 4. PPV Letter of Instrument 5. Exhibited Explanatory Report C31cgol 6. Exhibited Instruction Sheet C31cgol 7. Supporting Document - Carisbrook Bushfire Report Response to Clause 13.02 8. Supporting Document - Dunolly Bushfire Report Response to Clause 13.02 9. Exhibited Planning Scheme Maps 10. Carisbrook Flood and Drainage Plan 2013 11. Dunolly Flood Study 2014 12. AECOM report to Carisbrook Flood Study, 2013 13. Water Tech response to AECOM report, 2014 14. Investigation and Design of Carisbrook Flood and Drainage Mitigation Treatments, Preliminary Design Entura 15. Investigation and Design of Carisbrook Flood and Drainage Mitigation Treatments, Preliminary Design Entura 2016 16. Jacobs Review 2017 17. Updated Hydrology and Hydraulic Report, AR&R 2016 and Water Technology 2019 18. Tullaroop Creek Rural Mapping NCCMA 2019 	Council
2	16 Nov 2020	Council information sheets: <ol style="list-style-type: none"> 1. Frequently Asked Questions 2. Info brochure for Carisbrook 3. Info brochure for Dunolly 	Council
3	16 Nov 2020	Site visit itinerary	Council
4	20 Nov 2020	Part B submission	Council
5	20 Nov 2020	Expert witness statement of Mr Ben Tate	Council
6	1 Dec 2020	List of Carisbrook properties affected by overlays	Council and NCCMA