Planning and Environment Act 1987

Panel Report

South Gippsland Planning Scheme Amendment C81
Land Subject to Inundation Overlay

30 March 2016

Planning Panels Victoria
State Government Victoria

Planning and Environment Act 1987

Panel Report pursuant to Section 25 of the Act

South Gippsland Planning Scheme Amendment C81

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Trevor McCullough, Chair

Mandy Elliott, Member

Contents

List of Abbreviations

AHD	Australian Height Datum
ARI	Average Recurrence Interval
CHVA	Coastal Hazard Vulnerability Assessment
CMA	Catchment Management Authority
DELWP	Department of Environment, Land, Water and Planning
ESO	Environmental Significance Overlay
FO	Floodway Overlay
GIS	Geographic Information System
LiDAR	Light Detection and Ranging data from satellite radar imagery
LPPF	Local Planning Policy Framework
LSIO	Land Subject to Inundation Overlay
MSS	Municipal Strategic Statement
SPPF	State Planning Policy Framework
VCID	Victorian Coastal Inundation Dataset
VCS	Victorian Coastal Strategy
VPP	Victoria Planning Provisions
WGCMA	West Gippsland Catchment Management Authority

Overview

Amendment Summary	
The Amendment	South Gippsland Planning Scheme Amendment C81
Common Name	Land Subject to Inundation Overlay
Purpose	To modify flood mapping to include more up to date data
Subject Site	The Amendment applies to all land in the Shire of South Gippsland
The Proponents	Shire of South Gippsland and West Gippsland Catchment Management Authority
Planning Authority	Shire of South Gippsland
Exhibition	3 September to 15 October 2015
Submissions	25 written submissions were received as listed in Appendix A: • 7 submitters supported or did not oppose the Amendment; • 5 expressed general support but requesting changes; • 13 submitters opposed the Amendment.

Panel Process	
The Panel	Trevor McCullough (Chair) and Mandy Elliott (Member)
Directions Hearing	16 December 2015, Leongatha
Panel Hearing	23 and 24 February 2016, Leongatha
Parties to the Hearing	• South Gippsland Shire Council represented by Mr Ken Griffiths, • West Gippsland Catchment Management Authority represented by Mr Adam Dunn and Mr Wayne Gilmour • Mr Paul Hamlett • Mr Neil Smith • Mr Roger Harvey • Mr David Hoy
Site Inspections	Unaccompanied on 23 and 24 February 2016
Date of this Report	30 March 2016

Executive Summary

(i) Summary

South Gippsland Planning Scheme Amendment C81 proposes to update the flood inundation controls on inland and coastal areas across the South Gippsland Shire. The Amendment has been prepared by the Shire of South Gippsland in conjunction with the West Gippsland Catchment Management Authority (WGCMA).

The revised Land Subject to Inundation Overlay (LSIO) mapping is proposed to be applied to inland and coastal areas susceptible to inundation. This includes inland waterways and floodplains and coastal areas around Venus Bay, Tarwin Lower, Waratah Bay to Shallow Inlet, Tidal River, and most of the foreshore and immediate hinterland of Corner Inlet.

The WGCMA used a hierarchy of available data to remap areas of inundation:

- flood studies or inundation modelling
- records of actual inundation, noting that inundation extents and heights are time-variable and difficult to capture at their peak
- ground-truthing by experienced WGCMA officers
- anecdotal information from local residents and landowners
- existing inundation mapping from sources such as the Victorian Flood Database (VFD), the planning scheme and other agencies.

Submissions did not generally challenge the climate change science or the need to apply an overlay, but did challenge the interpretation of modelling data and the resultant minimum floor levels that should apply. Other key issues raised by submitters included:

- the Amendment is premature until a state-wide strategy is devised
- changes requested to permit exemptions in the proposed Schedule to the LSIO
- changes requested to the extent of the LSIO on individual properties
- the need for Council to undertake flood mitigation works
- impact of the proposed LSIO on property values and insurance premiums.

The Panel has considered all written submissions and presentations made to the public Hearing, and has concluded that the Amendment should be supported subject to changes proposed by Council and the WGCMA in response to submissions.

(ii) Recommendation

The Panel recommends that South Gippsland Planning Scheme Amendment C81 be adopted as exhibited subject to the following changes:

1. **Apply Land Subject to Inundation Overlay boundaries that correspond to sea level rise of 0.8m by 2100, as shown in revised Post Exhibition Land Subject to Inundation Overlay Mapping tabled prior to the Hearing., subject to the changes in recommendation 3.**
2. **Adopt the proposed Land Subject to Inundation Overlay Schedule with the minor changes as shown in the Panel preferred version in Appendix C of this report.**

3. **Amend the revised extent of the Land Subject to Inundation Overlay in the Lower Tarwin, Middle Tarwin, Leongatha and Upper Powlett areas consistent with the maps shown in Appendix D of this report.**

1 Introduction

1.1 The Amendment

South Gippsland Planning Scheme Amendment C81 proposes to update the flood inundation controls on inland and coastal areas across the South Gippsland Shire. The Planning Scheme changes proposed by the Amendment are:

- Delete the ESO6 (Clause 42.01 s6) entirely from the Planning Scheme – maps and schedule.
- Amend the current Land Subject to Inundation Overlay (LSIO) to:
  - Apply the LSIO to riverine waterways and adjoining land (floodplains) subject to inundation in areas currently within the ESO6.
  - Apply the LSIO to waterways and floodplains not currently affected by any inundation planning controls.
  - Improve the mapping accuracy of the existing application of the LSIO in coastal and some inland areas.
  - Apply the LSIO to coastal areas not currently affected by inundation planning controls. The coastal LSIO includes mapping of climate change related sea level rise and storm surge impacts (estimates) at the year 2100.
- Replace the existing LSIO Schedule with a new Schedule as exhibited, however with minor changes to be recommended to the Panel.
- Make minor changes to the Municipal Strategic Statement to acknowledge the updating of the inundation mapping and changes to the LSIO schedule provisions.
- Include as a Reference document in the Planning Scheme the 'Corner Inlet Dynamic Storm Tide Modelling Assessment – Water Technology June 2014'.[1]

Council noted that the current LSIO mapping of the Bass River and its tributaries is not affected by the Amendment.

1.2 Background to the Amendment

The Amendment has a long history commencing when the West Gippsland Catchment Management Authority (WGCMA) provided Council with updated flood mapping in 2010.[2] According to Council, one of the benefits of the updated mapping is that it provides justification for the removal of the existing ESO6 (Areas susceptible to flooding). The ESO6 was an interim control introduced into pre amalgamation planning schemes and later translated into the South Gippsland Planning Scheme. With technical flood information unavailable, the ESO6 was mapped to inaccurate boundaries and applied to large areas of land that will never be subject to flooding.

[1] Council Part A submission pp2-3.

[2] The mapping was of inland waterways based on a 1% AEP standard and did not consider coastal inundation.

The inaccurate application of the ESO6 has been an ongoing burden on landowners and Council for more than 20 years and has generated many hundreds of planning permits that Council considers to be of little or no benefit.

The WGCMA commissioned the *Corner Inlet Dynamic Storm Tide Modelling Study* (Water Technology June 2014), which is identified as a reference document in the Amendment. The work was undertaken because a peer review study of the Victorian Coastal Inundation Dataset (VCID) (which was released before Council sought Authorisation to prepare the Amendment) identified potential issues with elements of the methodology. The Water Technology modelling addressed peer review concerns, and reinforced the VCID as a reliable dataset for the application of the LSIO. At its Ordinary Meeting on 25 September 2013, Council " *…resolved to follow Bass Coast Council's lead and incorporate the VCID data into its mapping, and apply the LSIO to coastal areas, including urban zoned land, based on the 2100 storm surge mapped extent"*.[3] Council noted that this change took place along with extensive changes to the proposed LSIO Schedule for the purpose of exempting new coastal township dwellings from the requirement to have a planning permit if above the specified building height. The exemption was implemented to provide balance between identifying risk and facilitating development.

1.3 Issues addressed in this report

The Panel has considered all written submissions, as well as submissions presented to it during the Hearing. In addressing the issues raised in those submissions, the Panel has been assisted by the information provided to it as well as its observations from site inspections at Port Welshpool, Sandy Point and Leongatha.

This report deals with the issues under the following headings:

- Strategic Planning Context
- LSIO mapping and methodology
- The proposed LSIO schedule
- Individual site specific mapping
- Other issues.

[3] Council Part A submission p4.

2 Strategic Planning Context

Council provided a response to the Strategic Assessment Guidelines as part of the Explanatory Report.

The Panel has reviewed the policy context of the Amendment and made a brief appraisal of the relevant zone and overlay controls and other relevant planning strategies.

2.1 Policy framework

(i) State Planning Policy Framework

Council submitted that the Amendment is supported by the following clauses in the SPPF:

Clause 11.05-4 (Regional Planning Strategies and Principles) – this clause has the objective:

> *'To develop regions and settlements which have a strong identity, are prosperous and are environmentally sustainable'. This clause includes the section 'Climate change, natural hazards and community safety' which states that planning must 'Respond to the impacts of climate change and natural hazards'.*

Council submitted that the Amendment is consistent with this clause because the LSIO mapping identifies areas at risk of inundation and the application of the LSIO will *"discourage the siting of buildings and works and subdivisions in areas at risk"*. Where it is practical, in areas outside the LSIO, new buildings should be located in areas that are not prone to inundation. Where it cannot be avoided, buildings should be constructed in a way that reduces their flood risk.

Clause 13.01-1 (Coastal Inundation and Erosion) – this clause has the objective *"To plan for and manage the potential coastal impact of climate change"* and includes a number of strategies including:

- *Ensure that land subject to coastal hazards are identified and appropriately managed to ensure that future development is not at risk*
- *Ensure that development or protective works seeking to respond to coastal hazard risks avoid detrimental impacts on coastal processes.*[4]

Council noted that there is currently no planning scheme overlay to identify coastal hazard risks resulting from rising sea levels. As a result, planning permit applications do not currently consider the impacts of rising sea levels. Council also noted that the absence of an overlay has resulted in land being purchased without identification of the risk, even though Council now has adequate hazard mapping data to accurately map the risk via application of the LSIO. Council submitted that application of the LSIO is consistent with clause 13.01-1 because it:

- *Identifies the risk associated with climate change by placing the LSIO on coastal areas, triggering planning permits, which allows the appropriate 'management decisions-making processes' to occur.*

[4] Council Part A submission p9.

- *Applies the LSIO to address the requirement that …future development is not at risk by identifying risk areas, triggering planning permits in some circumstances and discouraging development that may present an unacceptable risk in the future.*
- *Applies the LSIO on the basis of the 0.8 metres sea level rise…which is consistent with the application of the precautionary principle.*[5]

Clause 13.02-1 (Floodplain Management) – this clause has the objective *"To assist the protection of"*:

- *Life, property and community infrastructure from flood hazard*
- *The natural flood carrying capacity of rivers, streams and floodways*
- *The flood storage function of floodplains and waterways*
- *Floodplain areas of environmental significance or of importance to river health.*[6]

Council stated that the submissions indicate that "*…inland application of the LSIO is not a controversial element of the Amendment. The Amendment benefits more inland residents than it burdens because of the removal of the outdated ESO6"*[7].

Council further noted that the Bass Coast Amendment C82 Panel was satisfied that the methodology for LSIO application was consistent with the requirements of Clause 13.02-1.

Clause 14.02-2 (Water Quality) – this clause contains the following strategy:

> *Discourage incompatible land use activities in areas subject to flooding, severe soil degradation, groundwater salinity or geotechnical hazards where the land cannot be sustainable (sic) managed to ensure minimum impact on downstream water quality or flow volumes.*[8]

Council stated that the LSIO application identifies the areas of risk and discourages inappropriate development, and that allowing development in flood prone areas increases the risk of water contamination, including in farming areas.

(ii) Local Planning Policy Framework

Council submitted that the Amendment supports the following local planning objectives:

Clause 21.03-3 (Environmental risk) – this clause includes the following 'key issues' policy statements:

- *The anticipated impact of climate change on the local environment, and the need to monitor and continue a plan for these impacts in the context of broader climate change and new knowledge.*
- *Pressure for development and subdivision along the coast and other environmentally sensitive areas, and the associated impacts of vegetation*

[5] Council Part A submission pp9-10.
[6] Council Part A submission p12.
[7] Council Part A submission p12.
[8] Council Part A submission p12.

> *clearing, introduction of pest and animals, erosion and a decline in water quality.*[9]

Council considered the Amendment to be consistent with these provisions, and that the application of the LSIO to coastal areas will assist in planning for the impacts of climate change in coastal areas.

Clause 21.07-1 (Climate change) – the objective of this clause is *"To manage the impacts resulting from climate change"*. Under 'Implementation' it states that *"Strategies relating to climate change will be implemented by Applying the Land Subject to Inundation Overlay"*. A further action includes:

> *Updating the Land Subject to Inundation Overlay so that development in coastal areas is compatible with the risk of climate change sea level rise and storm surge induction.*[10]

Council considered that the Amendment is consistent with these provisions because the LSIO is being used to map the hazard areas and the policy highlights that the policy environment in this area is evolving.

Clause 21.15-9 (Venus Bay – 'Further strategic work') – this clause states that further strategic work for the township includes investigating a flood study for Venus Bay to inform a local policy or overlay control, and review the sustainability of planning controls of land potentially affected by flooding.

Council considered that the Amendment is consistent with the further strategic work requirements and a flood study for Venus Bay requires discussion with the CMA.

Local Policy Clause 21.15-12 (Tarwin Lower – 'Further Strategic Work') – this clause states that further strategic work for the township includes *"Review of the suitability of Environmental Significance Overlay, Schedule 6, and develop amended or new controls as appropriate, to address land potentially affected by flooding"*

Council stated that the Amendment fulfils this requirement as it supports the removal of ESO6 from the planning scheme. To achieve consistency with other Framework Plans, Council also notes that the 'Land potentially subject to flooding' in the Port Welshpool and Port Franklin Framework Plan maps will be removed from these maps.

2.2 Planning scheme provisions

(i) Other planning strategies

Victorian Coastal Strategy 2014

The Victorian Coastal Strategy (VCS), produced by the Victorian Coastal Council, is the state's leading coastal planning document. Council submitted that the Amendment is consistent with the principles in the VCS.

[9] Council Part A submission p13.
[10] Council Part A submission p13.

Victorian Coastal Hazard Guide 2012

The guide was produced by the former Department of Sustainability and Environment, and provides guidance in relation to the preparation of coastal hazard assessments, which is a discretionary requirement of the proposed LSIO schedule.

Victorian Floodplain Management Strategy 2015 DELWP (draft)

The Victorian Floodplain Management Strategy is a draft strategy prepared by DELWP. Although the document has no formal decision making weight at present, Council noted that the document is of interest to the Amendment because of the comments at Chapter 15.4 'Planning for rising sea levels' (page 43) where it states:

> *For coastal flooding … the CMAs and Melbourne Water will have a supporting role: LGAs wishing to prepare adaptation plans, conduct flood studies or amend Planning Schemes in response to the risk of coastal flooding can seek assistance from DELWP and the CMAs or Melbourne Water.*

2.3 Ministerial Directions and Practice Notes

Ministerial Direction No 13 - Managing Coastal Hazards and the Coastal Impacts of Climate Change

This Ministerial Direction specifically applies to the rezoning of land abutting the coastline and land below 5 metres AHD. Council noted that no direction or comment is made in relation to the application of overlays that seek to identify areas of risk of coastal impacts of climate change.

Planning Practice Note 12 - Applying the Flood Provisions in Planning Schemes

PPN12 provides guidance on what overlay or zone should be applied to identify and manage flood risk. Council found the mapping of the FO to be challenging (small areas, irregular shapes, affecting non-urban land), which Council considered to be of little practical benefit. Consequentially, Council considered application of the LSIO to be consistent with the requirements of the Practice Note. Council noted that the Bass Coast C82 Panel report accepted the use of the LSIO as the sole overlay tool to map inundation areas.

Planning Practice Note 46 - Strategic Assessment Guidelines

PPN46 states that only a brief assessment is required for amendments applying a land management overlay where there is clear basis for its application e.g. where information is available to show that the land is subject to flooding.

2.4 Conclusion

The Panel concludes that the Amendment is supported by, and implements, the relevant sections of the State and Local Planning Policy Framework and has been prepared in accordance with the relevant Planning Practice Notes and Ministerial Directions.

3 LSIO mapping and methodology

3.1 The issues

Is the LSIO mapping and methodology fit for purpose? In developing the mapping, was adequate consultation with stakeholders, including affected landowners, undertaken?

Does the Amendment appropriately address the risks associated with climate change, including sea level rise and an increase in storm events?

3.2 Applied methodology

(i) Submissions

Topographical data

The Panel requested an overview of the basis for the topographical mapping used and information on the levels of accuracy.

The WGCMA responded as follows[11]:

> *All of the inundation mapping undertaken as part of this Amendment was done on a fully functional Geographic Information System (GIS), using standard VicMap layers such as cadastral property boundaries and watercourse delineations.*
>
> *In addition to the standard VicMap-type data and the various sources of flooding data mentioned in Section 3, the one special layer of information that the CMA used as a tool to assist its mapping was LiDAR.*
>
> *LiDAR is a survey technique that measures distance by illuminating a target with a laser beam and measuring the time for the laser to reflect back to the transmitter unit. It captures a very rich 'cloud' of individual data points, each with x, y (horizontal) and z (elevation) values.*
>
> *In our application of it, LiDAR is a remote aerial sensing technique whereby highly detailed and accurate topographical data is captured by an aircraft flying at a fixed height, transmitting and recapturing reflected laser light.*
>
> *The LiDAR data that we have used comes from a number of different datasets. Along our rivers and riverine floodplains, we used LiDAR from datasets that the CMA had commissioned – the primary dataset we used here was a Floodplain LiDAR dataset that has a stated accuracy of +/- 10cm @ 1 sigma. This LiDAR was captured over the Summer of 2010/2011.*
>
> *Along the coast, we used LiDAR obtained by DSE (now DELWP) as part of its Future Coasts program. The vertical accuracy of the LiDAR in this dataset is quoted as +/- 10cm @ 1 sigma, and that's outlined in several product descriptions issued by DSE. This LiDAR dataset was captured between 2007 and 2009.*

[11] WGCMA submission to the panel hearing.

> *In terms of the accuracy of the data, it is noted that +/- 10cm is actually quite accurate and close to what could be achieved by ground survey. It's also important to note that accuracy is stated as a +/- figure. Whilst the actual level of the land could be represented in the LiDAR data as 10 cm too low, indicating that land would be inundated when it's actually not, it could also be 10 cm too high, showing that land that actually inundates is outside the extent. The point is that the LiDAR data is the* ***best information available*** *to us and, at +/- 10cm @ 1 sigma, is also very accurate; more than accurate enough to help define the boundary of an LSIO.*

Is the LSIO mapping and methodology fit for purpose?

The Amendment seeks to map the predicted impacts of coastal and riverine flood inundation as a result of a changing climate in South Gippsland. The LSIO mapping will be applied to inland and coastal areas susceptible to inundation. This includes inland waterways and floodplains and coastal areas around Venus Bay, Tarwin Lower, Waratah Bay to Shallow Inlet, Tidal River, and most of the foreshore and immediate hinterland of Corner Inlet. The LSIO is already extensively applied to low lying areas along South Gippsland's coastline.

The mapping of the LSIO in the Tarwin River catchment is based on flood information provided by the WGCMA and significantly reduces the extent of the existing ESO6 overlay. As highlighted in WGCMA's submission, the WGCMA used a hierarchy of available data to remap areas of inundation, which included:

- flood studies or inundation modelling
- records of actual inundation, noting that inundation extents and heights are time-variable and difficult to capture at their peak. Records of actual inundation exist for Powlett and Tarwin Rivers
- ground-truthing by experienced WGCMA officers, noting that access to all areas is limited (Powlett River, areas of the Tarwin River; Agnes River and Franklin River)
- anecdotal information from local residents and others, noting that recollections frequently differ and are also time variable
- existing inundation mapping from sources such as the Victorian Flood Database (VFD), the planning scheme and other agencies. WGCMA noted in its submission that the existing flood mapping within the planning scheme is inaccurate, and the mapping in the VFD is based on soil type only.

Where available, the WGCMA used 1 per cent Annual Exceedance Probability (AEP) mapping from flood studies. Detailed inundation mapping is available for:

- Tarwin Lower and surrounds (Tarwin Lower Flood Study, Water Technology, 2006)
- Agnes River (Agnes River Flood Modelling Exercise, WGCMA, 2015)
- Franklin River (Franklin River Flood Modelling Exercise, WGCMA, 2015)
- Corner Inlet, (Corner Inlet Dynamic Storm Tide Modelling Assessment, Water Technology, 2014). This assessment found that there was very little reduction of storm surge through Corner Inlet and very little change to the 1% AEP Year 2100 Victorian Coastal Inundation Dataset (VCID) extent
- Coastal areas other than Corner Inlet, from the VCID.

The methodology used by WGCMA for riverine flood mapping was the same as that used in support of Bass Coast Amendment C82 and as used by other Catchment Management Authority's across Victoria.

In using the VCID, WGCMA removed:

- Any low lying areas that don't have a physical connection with tidal areas
- Small areas of urban inundation with only a narrow or shallow connection with tidal areas, the logic being that these areas could be easily and inexpensively protected, and
- The whole of urban properties where only a small proportion of the property will be inundated by a 1 per cent AEP event in the Year 2100.

The purpose of the VCID dataset is to provide a consistent State-wide assessment of the potential physical impacts of sea level rise associated with climate change. The VCID is the current and best data on coastal inundation and is based on predicted sea level rise of 0.82 metres and a 1:100 (1 per cent AEP) storm surge event, which also takes tides and storm surge into consideration.

The WGCMA explained that the Amendment also uses new coastal contour data (land height information) to improve accuracy of the existing flood mapping and includes consideration of sea level rise predictions (including estimated average sea level heights and storm surge impacts) to the year 2100 in the mapping of the LSIO. These factors combine to increase the extent of the LSIO in coastal areas.

Coastal mapping of the LSIO in Corner Inlet is supported by an assessment by Water Technology (June 2014) – *Corner Inlet Dynamic Storm Tide Modelling Assessment*. The Amendment proposes this document as a reference document in the planning scheme. The additional assessment allows for an enhanced level of accuracy of the dataset from that provided to Council under the Future Coasts Program - VCID. The WGCMA stated that the Corner Inlet Dynamic study found that there was very little difference in the mapping extent between the VCID 1 per cent AEP 2100 scenario and the Corner Inlet Dynamic study extent. In providing an explanation of this to the Panel, WGCMA stated:

> *The Corner Inlet Study matched the same forcings used by CSIRO in its forecast of extreme coastal inundation levels but introduced a very important element – **time**. Whilst the VCID was a 'bathtub' modelling exercise which made no allowance for time, the Corner Inlet Study took account of the time factor by modelling the movement of water over time using a flexible mesh modelling grid in a dynamic way that allowed for the modelling of water movement through the complex bathymetry of Corner Inlet in a time-dependent way.*
>
> *… there was little difference in the extents derived from the Corner Inlet Study and the VCID, despite the complex topography within Corner Inlet. This also gives us confidence that the VCID will be accurate in less complex areas, such as Shallow Inlet and Andersons Inlet*[12]*.*

[12] WGCMA submission to the panel hearing.

Council submitted that the Corner Inlet Dynamic study demonstrates that the VCID is a reliable dataset for the application of the LSIO as proposed by the Amendment and, in Council's view, the recently completed Western Port Local Coastal Hazard Assessment Report also supports and substantiates the VCID.

Council stated that the LSIO mapping identified areas at risk of inundation, and its application will discourage the siting of buildings, works and subdivisions in areas at risk. Where it is practical on a lot, new buildings should be located in areas not prone to inundation (outside of the LSIO), however where it cannot be avoided, (such as most urban zoned land in coastal townships) buildings should be constructed in a manner that reduces their flood risk. In most cases this will involve increasing floor levels.

Council suggested that Clause 13.01-1 (climate change) policy provisions are open to interpretation. Although Council accepted the conclusions drawn in the Bass Coast C82 Panel Report regarding LSIO mapping and planning for sea level rise, they submitted that where further information has been provided which builds on and verifies the accuracy and appropriateness of using the VCID to apply the LSIO, the LSIO can be applied to urban areas at its fullest 2100 extent (0.8 metre) rather than the 0.2 metre by 2040 ('urban infill'). Council submitted:

> *The maximum extent of the LSIO has been set to the VCID and Corner Inlet Study's maps of storm surge, combined with 82cm sea level rise at the year 2100. This is consistent with Council's interpretation of Clause 13.01-1 which states "Plan for possible sea level rise of 0.8 metres by 2100, and allow for the combined effects of tides, storm surges, coastal processes and local conditions such as topography and geology when assessing risks and coastal impacts associated with climate change."*

The WGCMA submitted that they are also firmly of the view that, when applying the inundation overlay to coastal areas, the '*Guidelines for Coastal Catchment Management Authorities: Assessing Development in relation to sea level rise'* and the provisions of the planning scheme require it to plan for at least 0.8 metre sea level rise by 2100.

A common theme in the submissions was that the coastal mapping of the LSIO is overly simplistic, either because it fails to consider a broad range of factors that might affect rising sea levels, or that the mapping is speculative because insufficient certainty surrounds predicted rising sea levels to accurately map likely affected areas.

Mr Harvey submitted that the Amendment is premature until a state-wide strategy is devised and he questioned what planning and actions the South Gippsland Shire was undertaking to protect the towns and infrastructure from the risks associated from climate change. Mr Harvey suggested that the Council "*needs to spell out exactly how they expect the flood scenario will play out in terms of existing dwellings, infrastructure and their action on the day and beyond*". Mr Harvey also pointed the Panel to a current Commonwealth government initiative called CoastAdapt, an online tool for managing climate risks including sea level rise and storm surges which is proposed to be released some time in 2016.

In response to these submissions, Council suggested that predicting how coastal areas might be affected in the future by rising sea levels is difficult to accurately determine. The

modelling on which the LSIO mapping is based does not consider all of the technical factors (for example coastal geology) that might allow highly accurate identification of land susceptible to inundation at any point in time up to the year 2100.

(ii) Discussion

The Panel is satisfied that the topographical data used by WGCMA is appropriate for the purpose of providing a base for flood mapping and the data is the best available information with an appropriate degree of accuracy.

Although there are practice notes and some guidance within the SPPF and LPPF for identifying the risk of inundation and climate change impacts, there is no clear direction on how overlays should be applied to coastal areas to manage coastal climate change impacts. The use of the LSIO as the planning tool was generally not contested.

It is clear from the submissions that inland application of the LSIO was not a controversial element of the Amendment, however some of the LSIO mapping of coastal areas/townships was (for example, Port Welshpool and Sandy Point). The Amendment benefits more inland residents than it burdens because of the removal of the outdated ESO6 and the relatively small areas covered by the revised LSIO.

The Panel concurs with Council that the Amendment is not necessarily a comprehensive planning response to the management of coastal climate change risks, however the LSIO mapping is based on the best available and verified information, and its application to land (regardless of zoning) is considered to be consistent with the climate change policy at Clause 13.01-1. For this reason the Panel finds that the LSIO mapping is appropriate for mapping areas subject to inundation from predicted climate change risks and it is not considered to be premature.

In regard to the application to urban areas at its fullest 2100 extent (0.8 metre) rather than the 0.2 metre by 2040, South Gippsland Council submitted that they had demonstrated through a more detailed dynamic modelling and assessment exercise for Corner Inlet that the VCID is a comprehensive dataset. They submitted that the results of the detailed dynamic modelling for the year 2100 were not much different and could be readily applied for the rest of the LSIO coastal areas. Indeed, the Bass Coast C82 Panel (pages 19 and 20) stated:

> *The Panel believes that the meaning of clause 13.01-1 is clear as described in the explanatory report for VC94, which states, under the heading 'How does the amendment address the environmental effects and any social effects?*
>
> *Amendment VC94 provides flexibility and certainty on planning for coastal climate change by introducing a short term benchmark to be used for new development within existing urban areas (infill development) while further information becomes available and this strategic adaptation planning work can be undertaken by Council's, departments and agencies. The existing requirements to plan for not less than 0.8 metre sea level rise by 2100 will continue to apply for greenfield developments outside of existing town boundaries.*

> *The Reasons for Decision to use the Ministerial Powers of Intervention for Amendment VC94 provides some further similar guidance by stating:*
>
> > *The clause (13.01) ensures that decision making considers the risk associated with climate change with a long term probable sea level rise benchmark of not less than 0.8 metres by 2100. Amendment VC94 will provide flexibility and certainty on planning for coastal climate change for urban infill development while further information becomes available and this strategic adaptation planning work can be undertaken …"*

The Bass Coast C82 Panel Report concludes its commentary on this matter by stating:

> *The Panel's interpretation of these explanatory words is that strategic planning for urban infill areas should apply a 0.2m sea level rise by 2040 'while further information becomes available and this strategic adaptation planning work can be undertaken by Council's, departments and agencies'. In other words, where predicted coastal inundation has not been subject to more detailed dynamic modelling, 0.2m by 2040 should apply to urban infill areas.*

The Panel accepts that South Gippsland Council has provided the 'further information' and 'strategic adaptation planning work' referred to in the Clause 13.01-1 through the Corner Inlet Dynamic Study. The application of the 2100 full extent (0.8 metre) to the LSIO mapping, as exhibited (with exception to any mapping that has been subject to post exhibition changes), is accepted.

The Panel accepts the Council's argument that as the Corner Inlet Dynamic Study effectively verifies the modelling of the VCID, and that the 0.8 metre by 2100 can be used over all coastal areas covered by the LSIO.

The Bass Coast C82 Panel was satisfied that the methodology for LSIO application was sound and consistent with the requirements of Clause 13.02-1. The Bass Coast C82 Panel accepted the use of the LSIO as the sole overlay tool to map coastal and riverine inundation areas. The Bass Coast C82 Panel also formed the view that, in the absence of any more appropriate control, application of the LSIO is appropriate to map coastal inundation. This Panel believes that the same arguments apply to South Gippsland Amendment C81.

(iii) Conclusions

The Panel agrees that the methodology is sound and that the application of the LSIO to map coastal and riverine inundation is the most appropriate planning tool currently available.

The Panel accepts Council's and the WGCMA's argument that because 'further information' and 'strategic adaptation planning work' referred to in Clause 13.01-1 has occurred via the Corner Inlet Dynamic Study, the 2100 full extent (0.8 metre) can be applied to the coastal LSIO mapping.

The Panel agrees that the *Corner Inlet Dynamic Storm Tide Modelling Assessment, Water Technology (June 2014)* should be included as a reference document in the planning scheme.

3.3 Historical flood data and information

(i) Submissions

The WGCMA submitted that it is widely acknowledged that the existing inundation mapping in South Gippsland is inaccurate. ESO6 was originally applied as an interim measure pending the completion of extensive flood path mapping. The WGCMA suggested that the existing overlays are a poor representation of known areas of inundation and essentially a 'start from scratch' exercise. Council agreed with the WGCMA.

There were no submissions suggesting the historical data was more accurate that the proposed LSIO mapping datasets for coastal or riverine inundation.

(ii) Discussion and conclusion

The Panel accepts the advice of WGCMA.

3.4 Amendment consultation process

Council advised that postal notification to the owners and occupiers of all land where the LSIO is proposed or amended, and where the ESO6 is to be deleted and replaced with the LSIO was undertaken. Council did not notify owners and occupiers of land affected by the existing LSIO in Melbourne Water's catchment area west of Korumburra as the mapping in this area will not change, and the new Schedule to the LSIO benefits these owners and occupiers by introducing more permit exemptions.

Along with the statutory requirements for public notice of an Amendment, Council also conducted community information drop-in sessions at Port Welshpool, Sandy Point, Tarwin Lower and Leongatha. Council minutes of 25 November 2015 state that the Council officers were satisfied that parties likely to be affected by the Amendment had been given fair opportunity to inform themselves of the Amendment and its potential impacts.

Mr Hoy raised a number of issues in his written and verbal submissions, including that he had not been notified about the Amendment. The Panel felt that a further discussion between Mr Hoy, Council and the WGCMA would clarify some of the issues raised by Mr Hoy. The Panel was encouraged that such a meeting was arranged at the completion of the Hearings.

3.5 Climate change and sea level rise

(i) Submissions

Council submitted that the mapping that is part of the Amendment is of sufficient accuracy to map the risks of climate change via application of the LSIO. Council submitted that application of the LSIO addresses the climate change policy requirements because it:

- Identifies the risks associated with climate change by placing the LSIO on coastal areas, triggering planning permits which allow the appropriate 'management decision-making processes' to occur.
- Applies the LSIO to addresses the requirement that '…future development is not at risk' by identifying risk areas, triggering planning permits in some circumstances and discouraging development that may present an unacceptable risk in the future.

- Applies the LSIO on the basis of 0.8 metres sea level rise by 2100 with consideration of storm surge and other factors based on the best available information presently available, which is consistent with application of the precautionary principle.

During the exhibition period where workshops were undertaken, Council found that there is a very clear expectation from the community that Council accurately identify inundation prone land in the Planning Scheme. In coastal areas it was also evident that landowners are informed of the potential impacts of rising sea levels and very few questions were made of the science underpinning sea level rise. This is reflected in the submissions (11 objections from residents of coastal townships) which acknowledge climate change but focus their concerns on how the Amendment provisions seek to address climate change challenges. Only two submissions clearly state that they believe that sea levels are not rising - siting a historic high tide marker at Port Arthur in Tasmania as evidence.

(ii) Discussion and conclusions

Most submissions did not raise issue with the notion of climate change and that sea levels will rise.

The Panel accepts the argument from Council that the application of the LSIO addresses the climate change policy requirements.

3.6 Recommendation

The Panel recommends the following:

1. **Apply LSIO boundaries that correspond to sea level rise of 0.8m by 2100, as shown in revised Post Exhibition Land Subject to Inundation Overlay Mapping tabled prior to the Hearing.**

4 The proposed LSIO schedule

4.1 The issue

The key issues raised in relation to the proposed LSIO schedule were the floor height levels, a call for further exemptions, and allowing for some flexibility in relation to earth moving (fill).

4.2 Submissions

Council submitted that the permit exemptions found in the schedule are not too different to those found in other planning schemes across Victoria. Council outlined the key features of the proposed schedule as follows:

> *A permit is not required for "A new dwelling in a residential zone (including the Township Zone) in the townships of Sandy Point, Venus Bay and Tarwin Lower, provided the finished floor level of the habitable building is 3.4 metres or more above Australian Height Datum (AHD)". A similar provision applies to Port Welshpool however with the height set to 3.0m above AHD – a reduced height responding to the Corner Inlet Assessment …*
>
> *A permit exemption is provided for modest ground floor extensions (not more than 20sqm) similar to the C82 Schedule. It is considered excessively onerous to require split level floor construction for minor additions …*
>
> *An exemption is provided for "A single Replacement dwelling…". The justification for the provision is to make it clear that existing dwellings can be replaced.*
>
> *A non-habitable building (other than a building associated with the use of land for industry or for a public or commercial use) with a floor area less than 20 square metres. Most carports and small sheds in urban areas are less than 20sqm. This exemption removes the need for a planning permit for these minor works. If a proposal is for more than 20sqm, it does not require a permit if consent is provided by the floodplain manager.*
>
> *Earthworks involving the receipt, importation, stockpiling or placement of not more than 100 cubic metres of fill. This provision is recommended for inclusion in the Schedule. It provides an appropriate level of flexibility in relation to earth moving.*
>
> *Buildings and works undertaken by or on behalf of Parks Victoria in accordance with a park management plan approved by the floodplain management authority, or where the buildings and works have otherwise received written consent from the relevant floodplain management authority.*
>
> *Buildings and works associated with bicycle pathways and trails undertaken by or on behalf of South Gippsland Shire Council that do not alter the existing surface level by more than 150mm. Rail Trails will be affected by the proposed*

> *LSIO. At Clause 44.04-1 a permit is required for 'Bicycle pathways and trails'. The Schedule exemption is in response to the Clause 44.04-1 provision.*

Mr Hamlett provided detail in his submission that the Corner Inlet Dynamic Storm Tide Modelling Assessment undertaken by Water Technology, identifies the maximum 1 per cent AEP Storm Tide level to be 2.68 metres AHD by 2100 at Port Welshpool. When an additional 0.3 metres is added as a contingency for free board allowance then the minimum floor level should be 3.0 metres AHD not the 3.4 metres AHD as originally proposed in the schedule. Mr and Mrs Jeffrey also raised this issue in regard to floor levels in Port Welshpool. Both Council and the WGCMA agreed with Mr Hamlett's assessment and changes have been proposed to the exhibited LSIO schedule to reflect this.

Council explained that the provisions for floor levels are a permit trigger only and not a prohibition on approving developments with lower floor levels. Property owners can still apply for a permit for any form of buildings and works regardless of height and it will be considered on its merits. This is important because decision-making discretion must be retained where uncertainty exists.

Mr Hamlett raised the matter that the exhibited schedule excludes the ability for property owners to import any form of fill onto their properties without obtaining a permit. He points out that this has the potential to generate numerous permit applications for very minor or trivial works particularly in relation to farm operations. Mr Hamlett cited other regions that have exemptions for importing volumes of less than 100 cubic metres (such as Bass Coast).

Gippsland Ports submitted that development and works associated with boating activities ought to be exempt from the requirement for a permit. They requested the inclusion of the following exemption in the overlay schedule:

> *Development and works associated with boating activities including marinas, jetties, boardwalks, landings, boat ramps, dredging, seawalls and groynes, beach refurbishment, swing moorings, navigational aids, beacons and signs.*

Council responded that: *'these exemptions are excessive, port works have the potential to change how inundation water moves and should be considered by the CMA'*.

The LSIO is proposed to be applied to Tidal River at Wilsons Promontory, an area under the management of Parks Victoria. The exemption provision was considered by Parks Victoria prior to exhibition. Council submitted that it does not wish to burden one of the State's top tourist attractions with a permit requirement, however the township at Tidal River has flooded in recent times and significant damage occurred. Council submitted that it is therefore appropriate that the WGCMA be provided the opportunity to consider (either through a permit or via other form of consent) buildings and works in the Tidal River floodplain.

WGCMA agreed with the positions put forward by Council and it is:

> *happy to exempt them, [agencies] from requiring permits for routine maintenance but not for works that might affect flood behaviour. Works that have the potential to alter flood behaviour and adversely affect other properties should have the scrutiny of the CMA.*

4.3 Discussion

Floor heights

Council agreed with Mr Hamlett regarding the floor height levels for Port Welshpool. For other areas covered by the LSIO such as Sandy Point, Venus Bay and Tarwin Lower, the 3.4 metres above AHD will remain and is based on the VCID mapping. Natural ground level variations across each township will mean that the finished floor height at which you would have to build to achieve the permit exemption will vary, however analysis of the LiDAR contour data shows the provision is practical. The Panel agrees with the approach to floor height levels as part of the LSIO schedule.

Earthworks

The Panel agrees with allowing some flexibility in term of earthworks involving the receipt, importation, stockpiling or placement fill and accepts the final agreed words between the Council and WGCMA as:

> *On non-urban zoned land, earthworks involving the receipt, importation, stockpiling or placement of not more than 100 cubic metres of fill, to a depth of no more than 150 mm.*

This will address the issues raised by Mr Hamlett.

Agency exemptions

The Panel agrees with Council and WGCMA that further exemptions to Gippsland Ports, South Gippsland Water and VicTrack are not supported for the reasons put forward by the WGCMA, in particular for works that might affect flood behaviour.

4.4 Conclusion

The Panel concludes that the LSIO schedule should be adopted subject to the following minor changes:

- Introduction of a specific new dwelling trigger provision for Port Welshpool. The height trigger is reduced from 3.4 metres to 3.0 metres AHD for Port Welshpool's urban zoned land.
- An earthworks exemption involving the receipt, importation, stockpiling or placement of not more than 100 cubic metres of fill which reads as "*On non-urban zoned land, earthworks involving the receipt, importation, stockpiling or placement of not more than 100 cubic metres of fill, to a depth of no more than 150mm"*.
- Minor wording changes to the 'Coastal Development' section of the schedule to read: "*If a report is required, the report must be prepared by a suitably qualified coastal processes engineer …*".

4.5 Recommendation

The Panel makes the following recommendation in relation to the proposed Land Subject to Inundation Overlay Schedule:

2. **Adopt the proposed Land Subject to Inundation Overlay Schedule with the minor changes as shown in the Panel preferred version in Appendix C of this report.**

5 Individual site specific mapping

5.1 The issues

Have the matters raised in submissions relating to the LSIO mapping on individual sites been appropriately considered and addressed?

5.2 Port Welshpool

(i) Submissions

The submissions of Mr Hamlett and Mr and Mrs Jeffrey in relation to the floor maximum level at Port Welshpool are discussed in Chapter 4.

Both Council and the WGCMA agreed with Mr Hamlett's assessment and changes have been proposed to the exhibited LSIO schedule to reflect a minimum floor level of 3.0 metres AHD rather than 3.4 metres AHD.

Ms Hague submitted that the land at 75 Townsend Street had never flooded and so therefore should not be included in the LSIO.

The WGCMA responded that they were confident in the flood mapping in this area and pointed out that it took into account sea level rise as well as the most up to date modelling available.

(ii) Discussion and conclusion

The Panel accepts the accuracy of the flood mapping at Port Welshpool and concludes that no changes to the mapping or the LSIO are required in the Port Welshpool area.

5.3 Sandy Point

(i) Submissions

Five submissions were received from landowners in or near Ash Avenue, Sandy Point. Submissions challenged the application of the LSIO on a number of grounds. Some of the issues raised were general in nature and are covered elsewhere in this report. Submitters also challenged whether the land would ever be subject to flooding.

The Panel asked the WGCMA to explain the dynamics of potential flooding of the area proposed for inclusion in the LSIO at Sandy Point. Mr Dunn and Mr Gilmour explained that flood inundation would occur as the level of Shallow Inlet rises and water would flow overland south across Waratah Road into the north eastern parts of the town. Mr Gilmour added that WGCMA were confident that the mapping of projected flooding is accurate in this area and submitted that the LSIO should remain as exhibited.

None of the Sandy Point submitters appeared at the Hearing to elaborate on their concerns.

(ii) Discussion and conclusion

The Panel accepts that the modelling of potential flooding at Sandy Point is reliable and that the LSIO should be applied as exhibited.

5.4 Lower and Middle Tarwin

(i) Submissions

The WGCMA advised that they were contacted by a number of landowners in the Lower and Middle Tarwin River catchments to discuss the extent of the proposed LSIO in those areas. Following on-site visits with landowners and further investigation using LiDAR, WGCMA have proposed revised LSIO mapping in those areas. It is understood that the revised mapping is agreed by the landowners.

The proposed revised mapping is as shown in Appendix D.

(ii) Discussion and conclusion

The Panel accepts the proposed refinements to the LSIO in the Lower and Middle Tarwin areas as shown in Appendix D.

5.5 Leongatha

(i) Submissions

The WGCMA advised that they were contacted by Mr Murrihy to discuss the extent of the proposed LSIO on his property east of Leongatha. Following on-site visits and further investigation using LiDAR and aerial photography, WGCMA have proposed revised LSIO mapping in those areas. It is understood that the revised mapping is agreed by Mr Murrihy.

The proposed revised mapping is as shown in Appendix D.

(ii) Discussion and conclusion

The Panel accepts the proposed refinements to the LSIO east of Leongatha as shown in Appendix D.

5.6 Upper Powlett River, Outtrim

(i) Submissions

The WGCMA advised that they were contacted by two landowners about LSIO mapping in the Upper Powlett River area near Outtrim. This resulted in a substantial review of the mapping in this the Upper Powlett area and, overall, a significant reduction the area proposed to be included in the LSIO.

There is one area where the LSIO is proposed to be applied to land not in the exhibited LSIO. This affects three landowners. WGCMA contacted the three landowners concerned and has since obtained their written agreement to the changes. Copies of the written consents were provided to the Panel.

The proposed revised mapping is as shown in Appendix D.

(ii) Discussion and conclusions

The Panel accepts the proposed refinements to the LSIO in the Upper Powlett area near Outtrim as shown in Appendix D.

The Panel accepts that the WGCMA has acted responsibly in reviewing the LSIO in this area and has appropriately sought input from affected landowners.

5.7 Recommendation

The Panel makes the following recommendations in relation to individual properties:

3. **Amend the revised extent of the Land Subject to Inundation Overlay in the Lower Tarwin, Middle Tarwin, Leongatha and Upper Powlett areas consistent with the maps shown in Appendix D of this report.**

6 Other issues

6.1 The issues

Other issues raised in submissions included questions around what measures Council have put in place to protect townships from climate change impacts; impacts on land values, land sales and insurance; and removing the ESO6.

6.2 Mitigation and protection works

(i) Submissions

A number of submitters questioned what the Council are doing to protect coastal townships from inundation and the risks of climate change, other than the LSIO. Mr Harvey submitted that there is no point in raising the height of dwellings if the infrastructure in town is flood damaged beyond repair.

Council submitted that it has no capital works proposals in the short, medium or long term capital works plan related to management of rising sea levels. In coastal areas, the Amendment seeks only to identify land that may be susceptible to coastal inundation and is not a tool through which Council can, or should, consider how mitigation works may be undertaken.

In past decades, the pre amalgamation councils that now form the South Gippsland Shire Council, were occasionally directly involved with the maintenance of seawalls, however this direct involvement ended in the 1970s.

(ii) Discussion and conclusion

Council made it clear to the Panel that they have no current capital works program for managing the risks of climate change.

The LSIO is an appropriate planning tool to integrate into a planning scheme to ensure the risks of climate change are identified. The Panel suggests that Council should be working more closely with State government and the relevant authorities to identify works that they made need to investigate to ensure assets are protected into the future.

6.3 Property value, land sales and insurance

(i) Submissions

Five property owners made submission regarding the possible effect of the LSIO upon the value of their property; submitting that the LSIO would make it more difficult to sell and insurance premiums would increase.

Council submitted that the LSIO has an important function to reflect this underlying condition of the land to current property owners and future purchasers of affected properties so that they may make informed decisions about the property and about planning for their own safety during flooding events.

Council submitted that it is a common fear that the application of a new planning scheme overlay will affect land values. Council submitted that exhibition of the Amendment has revealed a high degree of knowledge and understanding in the community of the risk posed by rising sea levels.

Council emphasised that it is important to reiterate that the LSIO does not prohibit development and is 'development proactive' in that the LSIO provisions in coastal townships specifically exempt the requirement for a planning permit for a new dwelling if the floor levels are raised above inundation height. Council submitted that this is a positive statement that every residential zoned lot in the proposed LSIO can have a dwelling. They further submitted that certainty that you can build a dwelling in a coastal township (along with the other permit exemptions offered in the LSIO schedule) should further address concerns that application of the LSIO may affect land values or make it difficult to sell land.

Council submitted that concerns about insurance premiums are common when flood inundation controls are applied. Council submitted that the key point to note is that insurance companies already consider the flood data Council has used to map the LSIO when they make their insurance assessments.

Council also stated:

> *While … matters are primarily private sector / market force issues, and Council is not required to consider market forces in its administration of the Planning Scheme, experience in other councils has found that application of the LSIO, or similar inundation / flooding controls, does not have any significant or lasting effect on land values, land sales or insurance premiums.*

(ii) Discussion

Several Planning Panels have considered these issues previously.

The Planning Panel in relation to Amendment C18 to the Stonnington Planning Scheme concluded that:

> *Panels have consistently found that there is no justification for setting aside of any SBO Amendment on the basis of requests for compensation, loss of property value, and possible increase in insurance premiums.*

The Panel in relation to Amendment C50 to the Moreland Planning Scheme stated that:

> *The value of any property is determined by the complex interplay of many different factors such as overall economic conditions, public economic policies, location, streetscape and amenity, and it is difficult to assign what effect, if any, the identification of land as liable to overland flows may have on the value of a property. This view consistent with the conclusions of the Planning Panels for Amendment C3 to the Yarra Planning Scheme and Amendment C18 to the Stonnington Planning Scheme. These Panels generally found no correlation between the application of the SBO and property values. Melbourne Water also reported that the Stonnington Council commissioned Charter Keck Kramer (CKC) to review the effects on property prices of the application of the SBO. CKC examined property prices in the City of Port Phillip*

> *and found no correlation. The Panel was not provided with any contrary evidence and concludes that the SBO or the LSIO are highly unlikely to affect property prices, and that it is appropriate that the condition of the land be recorded and available to interested people.*

There is a long held view in case law that property devaluation is not a valid planning consideration. Planning Panels and Responsible Authorities have long relied upon several cases as a basis for finding that clause 10.04 *Integrated decision making* and 'net community benefit' is the core consideration for Amendments.

On balance, the Panel believes that the responsibility that the Council and floodplain management authorities have to identify properties at risk from inundation and implement an appropriate planning response outweighs any potential negative social or economic impacts.

This Panel is satisfied that Council's approach in relation to this issue is appropriate, and that property value and insurance conclusions by previous Panels should be similarly applied to this Amendment.

6.4 ESO3 at Port Welshpool

(i) The issue

Mr Harvey raised an issue regarding the existing ESO3 in Port Welshpool being too onerous and submitted that it no longer served any purpose.

(ii) Submissions

An ESO3 is currently in place over the township of Port Welshpool. The purpose of the ESO3 is to protect coastal towns from '*inappropriate development and mismanagement*'. Mr Harvey submitted that the existing ESO3 makes no contribution to either built form or protection of vegetation. He suggested that the ESO3 be abandoned.

Council agreed with the rationale put forward by Mr Harvey regarding ESO3 and accepted that a review would be appropriate.

(iii) Discussion and conclusion

The Panel makes no comment about the value of the ESO3, but agrees that there would seem to be merit in a review.

Appendix A List of Submitters

No.	Submitter
1	Paul and Penny Hamlett
2	Kerry Hague
3	Roger and Donna Harvey
4	Eric and Barbara Jeffrey
5	Dale Kerwood
6	J J and W Daley
7	J Perry
8	Jeremy Cicero
9	Lance and Dinah Ward
10	John and Anita Harris
11	David Hoy
12	Neil Smith
13	Ian and Maree Nicholas
14	David Whiteside
15	Melbourne Water
16	VicTrack
17	Gippsland Ports
18	Southern Rural Water
19	EPA Gippsland
20	South Gippsland Water
21	DELWP
22	Wellington Shire Council
23	Bass Coast Shire Council
24	Mae Adams
25	Mr Richard Ellis

Appendix B Document list

No	Date	Description	Presented by
1	23 Feb 2016	South Gippsland Shire Council Part A submission	Mr Ken Griffiths, SGSC
2	23 Feb 2016	SGSC Part B submission	Mr Griffiths
3	23 Feb 2016	Revised Schedule to LSIO	Mr Griffiths
4	24 Feb 2016	West Gippsland Catchment Management Authority presentation	Mr Adam Dunn, WGCMA
5	24 Feb 2016	WGCMA submission	Mr Dunn
6	24 Feb 2016	Submission	Mr Hamlett
7	24 Feb 2016	Submission	Mr Harvey
8	24 Feb 2016	Attachments to submission	Mr Harvey
9	24 Feb 2016	Submission	Mr Hoy

Appendix C Panel preferred Schedule to the LSIO

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SCHEDULE TO THE LAND SUBJECT TO INUNDATION OVERLAY

Shown on the planning scheme map as **LSIO**.

Note: The map on page 5 of this schedule identifies the administrative areas of the two floodplain management authorities in South Gippsland Shire.

Inappropriate development in areas susceptible to inundation can endanger life and result in costly property damage. Buildings and household materials can be washed away and damage other properties and worsen localised flooding due to the obstruction to water flows. Inundation can flood waste water systems, causing water contamination which can cause health problems. Developments in floodplains must be appropriately managed to minimise the risk and cost to both private landowner and the broader community.

The Land Subject to Inundation Overlay (LSIO) has been applied to riverine areas to recognise existing inundation risk and in coastal areas in expectation that sea level rise will continue into the future. The impacts of rising sea levels cannot be predicted with absolute certainty however the precautionary principle should be used when considering the intensification of development in coastal areas. The application of the LSIO over existing urban zoned lots in coastal townships does not prohibit development but seeks to facilitate continued development with appropriate and practical safeguards.

1.0 Permit requirement

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A permit is not required for any of the following:

- A new dwelling in a residential zone (including the Township Zone) in the townships of ~~Port Welshpool~~, Sandy Point, Venus Bay and Tarwin Lower, provided the finished floor level of the habitable building is 3.4 metres or more above Australian Height Datum (AHD).
- A new dwelling in a residential zone (including the Township Zone) in the townships of Port Welshpool, provided the finished floor level of the habitable building is 3.0 metres or more above Australian Height Datum (AHD).
- A ground floor extension to an existing habitable building (including a dwelling) provided the proposed floor level is at or above the highest point of the existing floor level and the gross floor area of the extension does not exceed 20 square metres.
- An upper storey extension to an existing building within the existing building footprint.
- A single Replacement dwelling[1] provided that the floor level is above the applicable floor levels set by the relevant floodplain management authority.
- A non-habitable building (other than a building associated with the use of land for industry or for a public or commercial use) with a floor area less than 20 square metres.
- A non-habitable building, or extension to a non-habitable building (other than a building associated with the use of land for industry or for a public or commercial use) provided the finished floor levels are above the applicable floor levels set by the relevant floodplain management authority.
- A pergola, open sided carport or in-ground swimming pool / spa (including plant equipment and safety features normal to a pool / spa) associated with a dwelling.
- An open sided deck or verandah associated with an existing dwelling and has a floor area no greater than 20 square metre~~r~~s.
- A rainwater tank associated with an existing dwelling, or the agricultural use of land, provided that the footprint of all rainwater tanks does not exceed 20 square metres.
- A replacement fence of the same materials as an existing fence, in the same location.

- Open type fencing (excluding paling and Colorbond style fencing, brick and concrete walls) and maintenance to existing fencing.
- An agricultural farm building, or structure, with permanent open sides.
- A mast, antenna, power pole or light pole.
- A non-domestic disabled access ramp.
- An outdoor advertising sign/structure, provided that it does not impede floodwater flows.
- Works ancillary to an existing building, including landscaping and pathways that do not alter the existing surface profile by more than 150 mm.
- Works associated with roads, roadsides or any other access way (public or private) that do not alter the existing surface level by more than 150mm.
- Works associated with roads, roadsides or any other access ways carried out by a public authority that have received written consent from the relevant floodplain management authority.
- Earthworks in accordance with a *whole farm plan* approved by the responsible authority and relevant floodplain management authority.
- Works associated with dams with less than 3000 cubic metres capacity, where no fill is imported to the site and where no embankment is proposed above natural ground level.
- Works associated with vine or horticultural trellises or watering systems.
- Windmills and solar units in association with the use of land for Agriculture.
- Routine and maintenance works that do not affect the height, length or location of a levee, embankment.
- On non-urban zoned land, earthworks involving the receipt, importation, stockpiling or placement of not more than 100 cubic metres of fill, to a depth of no more than 150mm.
- Buildings and works undertaken by Gippsland Ports associated with jetties, boardwalks, landings beach refurbishment, swing moorings, navigational aids, beacons and signs.
- Buildings and works associated with bicycle pathways and trails undertaken by or on behalf of South Gippsland Shire Council that do not alter the existing surface level by more than 150mm.
- Buildings and works undertaken by or on behalf of Parks Victoria in accordance with a park management plan approved by the floodplain management authority, or where the buildings and works have otherwise received written consent from the relevant floodplain management authority.
- Buildings and works carried out by a Water Corporation to maintain and replace infrastructure related to sewer and water supply.

Permit requirement explanatory note:
Replacement dwelling[1]. For the purpose of this schedule a Replacement dwelling is a new dwelling constructed on the same area of land containing an existing dwelling which is to be demolished and replaced by a new dwelling, or a new dwelling to replace on the same area of land a dwelling damaged or destroyed after 1 January 2016.

2.0 Application requirement

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Unless agreed in writing by the relevant floodplain management authority an application to construct a building or construct or carry out works must be accompanied by four sets of plans, drawn to scale, which show:

- A location plan showing the boundaries and dimensions of the site, surrounding uses and the layout of existing and proposed buildings and works.

- Elevation plans showing natural ground level, finished ground level and the floor levels of any proposed buildings in relation to Australian Height Datum, taken by or under direction of a licensed surveyor.
- A detailed site plan with 0.5m contour intervals showing the layout of existing and proposed buildings and works, watercourses and access roads, taken by or under the direction of a licensed land surveyor.
- Relevant ground levels, to Australian Height Datum, taken by or under the direction or supervision of a licensed land surveyor.
- For inland waterways, the 100 year Average Recurrence Interval flood level (1 in 100 year flood level) from the relevant floodplain management authority. The flood level information must not be greater than six months old.
- Any additional information requested in writing from the floodplain management authority.

Coastal Development

For land below 5m AHD, the Responsible Authority or floodplain management authority may require that a coastal hazard vulnerability assessment or similar statement be prepared to accompany the following planning permit application types:

- Subdivision
- Accommodation (including Dwelling, Residential building, Residential village, Retirement village, Camping and caravan park, Corrective institution, Dependent persons unit, Group accommodation and Host farm).

This requirement does not apply where the information has been previously published in a regional Local Coastal Hazard Assessment.

If a report is required, the report must be prepared by a suitably qualified coastal processes engineer and / or coastal processes specialist and prepared in accordance with any approved coastal hazard guidelines to the satisfaction of the responsible authority and floodplain management authority. The assessment is to be prepared in accordance with the Victorian Coastal Hazard Guide (or superseding document) and must not be more than six months old and contain at least the following information:

- A location plan drawn to scale, showing the boundaries and dimensions of the site, surrounding uses, the layout of existing and proposed buildings and works and the distance to coast or estuary;
- Elevation plans taken by or under the direction and supervision of a licensed land surveyor showing natural ground level, finished ground level and the floor levels of any proposed buildings in relation to both Australian Height Datum and the level as nominated by the relevant floodplain management authority at 2100;
- A detailed site plan with 0.5m contours showing the layout of existing and proposed buildings and works, watercourses, access roads, vegetation and all infrastructure that may be affected by flooding, sea level rise or coastal inundation, taken by or under the direction and supervision of a licensed land surveyor;

Note: Before commencing preparation of the coastal hazards vulnerability assessment, consultation should occur with the floodplain management authority and the responsible authority to determine what information, additional to that specified above, must be provided to fulfil the requirements of the Victorian Coastal Hazard Guide.

3.0 Referral of Applications

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An application to construct a building or construct or carry out works, or an application to amend a permit, does not require referral to the relevant floodplain management authority if the application satisfies one of the following:

- Is accompanied by the relevant floodplain management authority's written approval, which must:

- be granted not more than three months prior to lodging with the responsible authority;
- quote the reference number and date of the approved plans; and
- states the applicable flood level and any required floor levels.

- Is in accordance with an adopted local floodplain development plan or other agreement between the floodplain management authority and the responsible authority.
- Complies with a building envelope, filling levels and floor levels specified by the relevant floodplain management authority for the subject land in the previous six months.

4.0 References

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Corner Inlet Dynamic Storm Tide Modelling Assessment – Water Technology June 2014

5.0 Map 1

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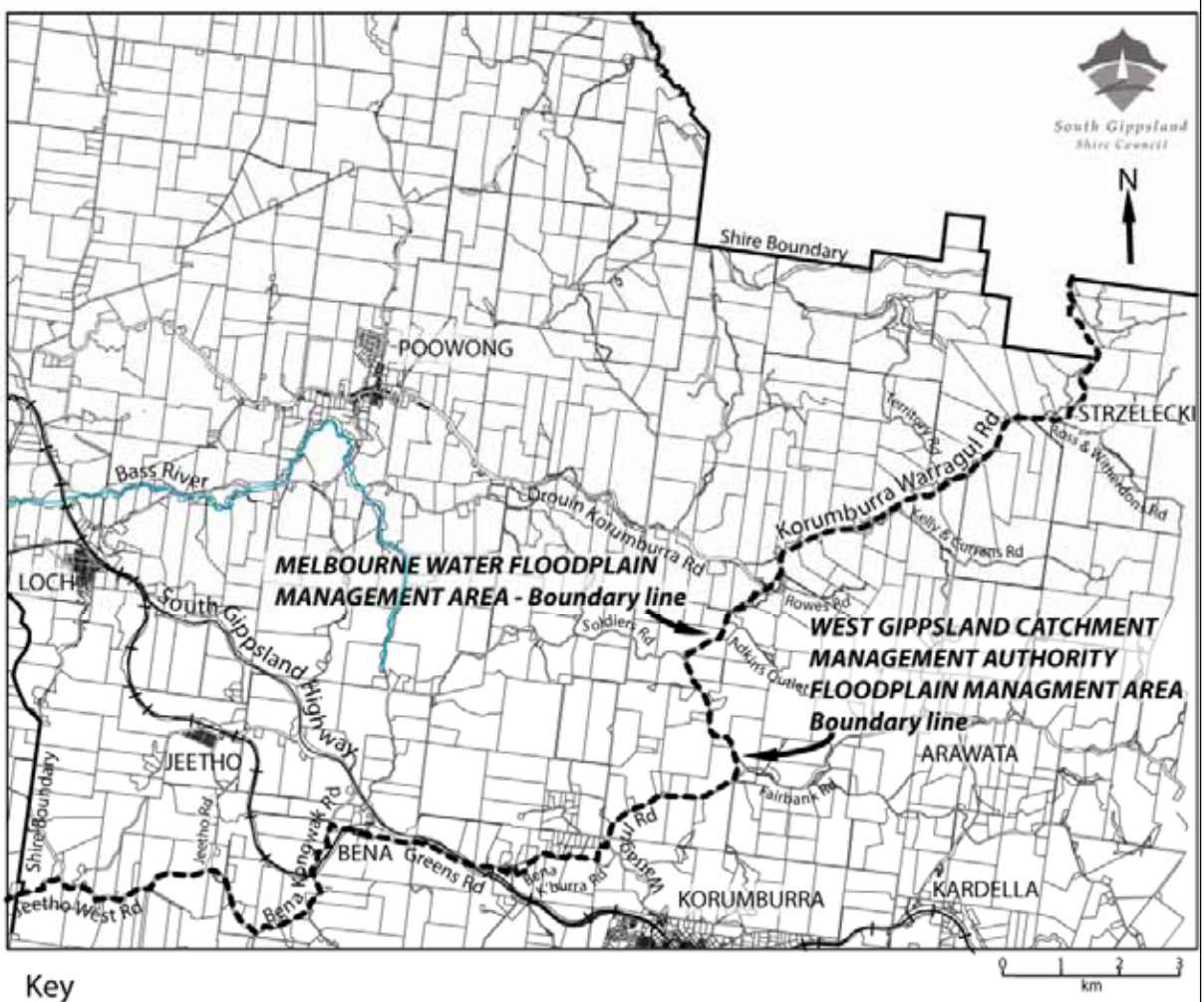
BOUNDARY LINE OF FLOODPLAIN MANAGEMENT AUTHORITY AREAS - SOUTH GIPPSLAND SHIRE



Key

----- Boundary line identifying the administrative areas of Melbourne Water (MW) and the West Gippsland Catchment Management Authority (WGCMA) within South Gippsland Shire.

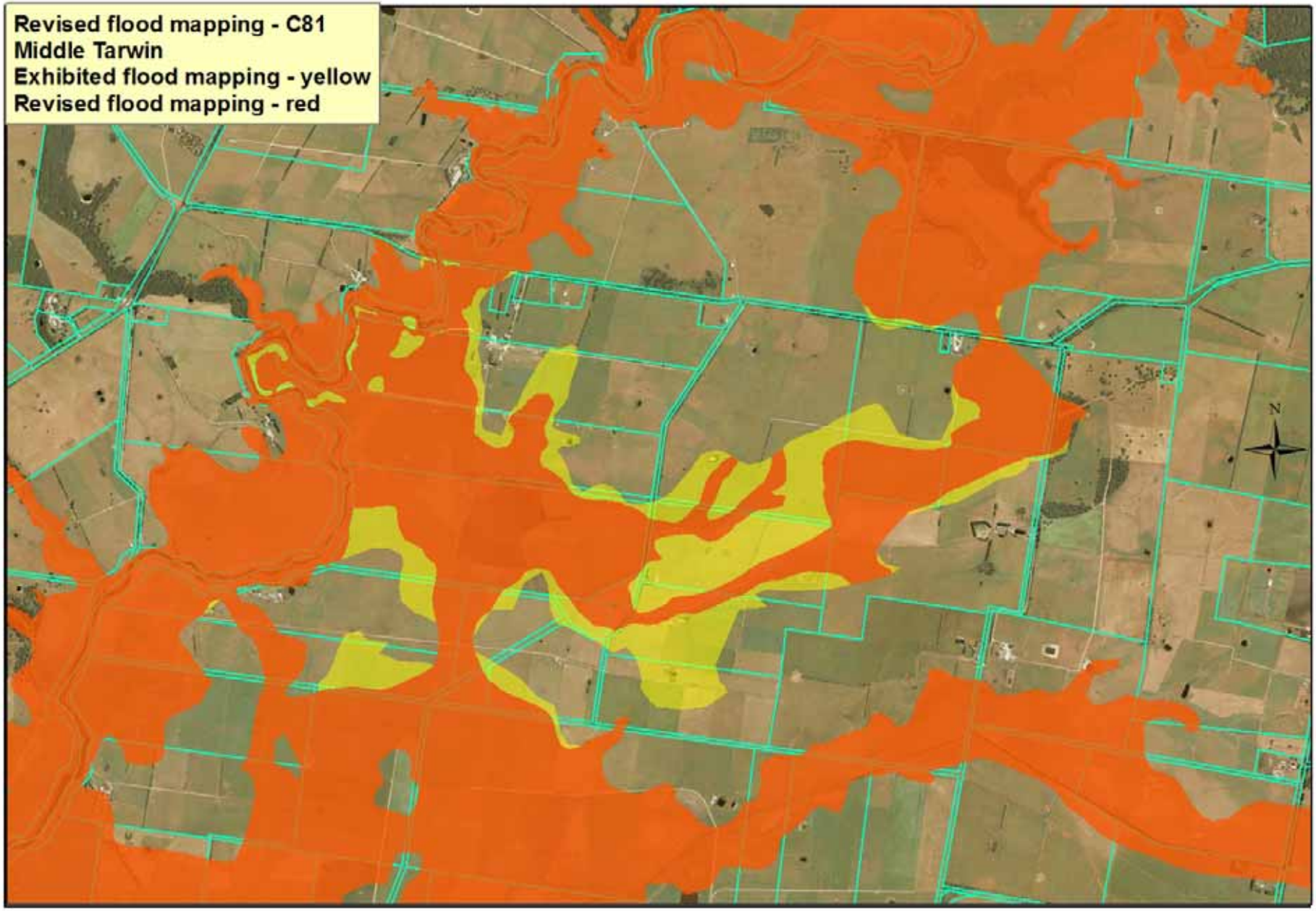
Notes:

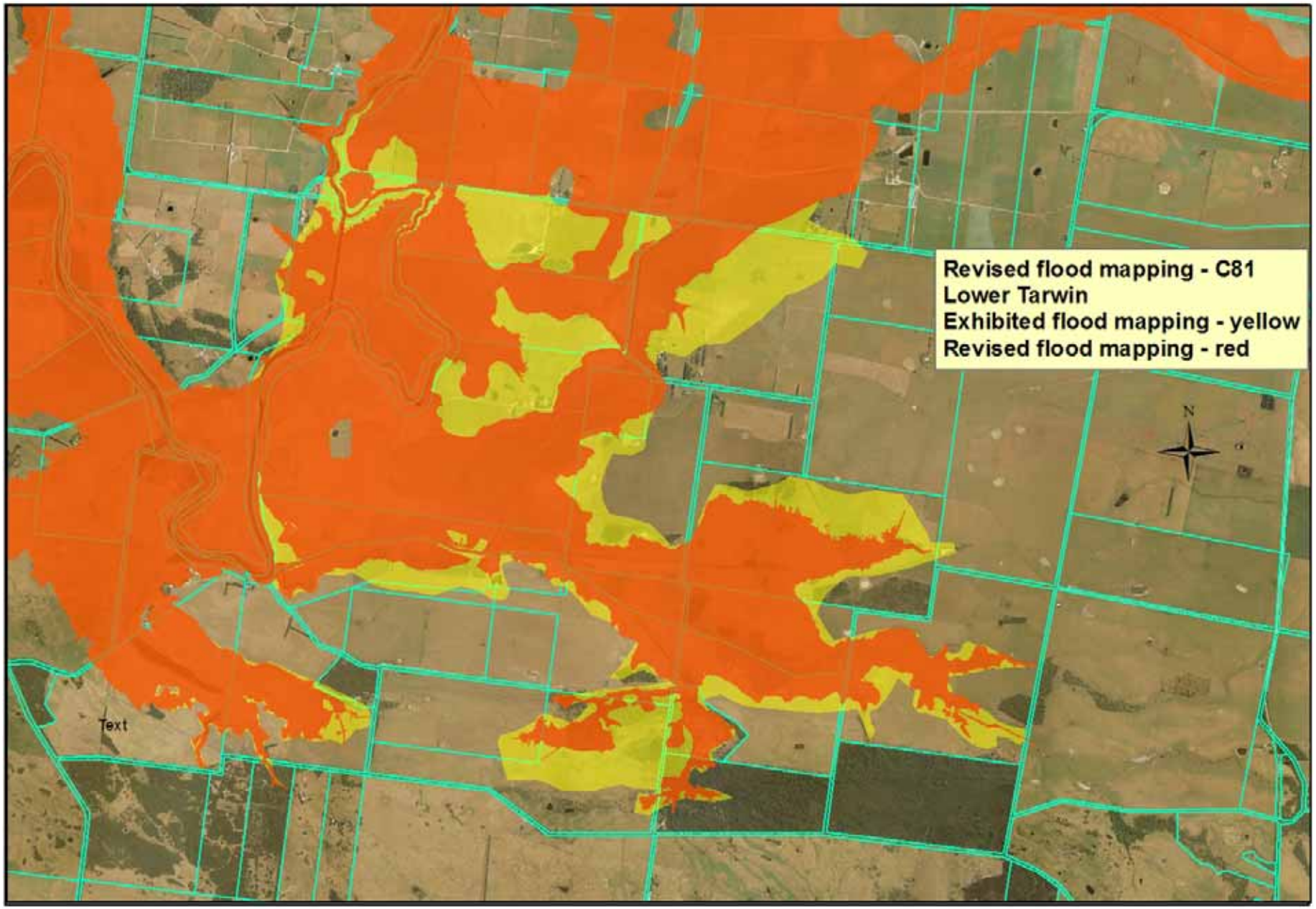
1. Precise details of the location of the boundary line (aligned to the cadastre) can be gained from MW and the WGCMA.

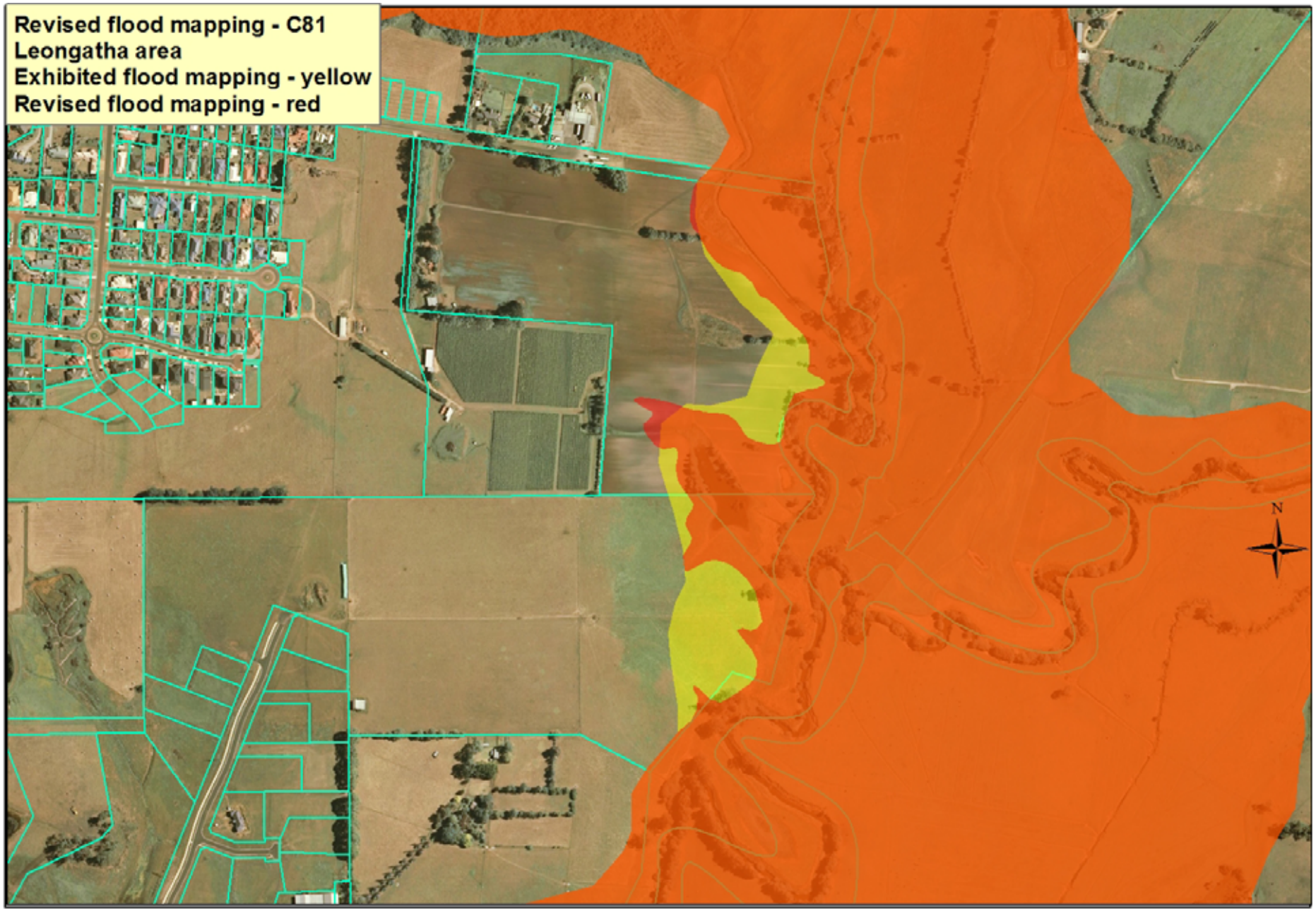
2. Enquiries regarding flood heights north of the boundary line should be directed to MW. Enquiries south and east of the line (the balance of South Gippsland Shire) should be directed to the WGCMA.

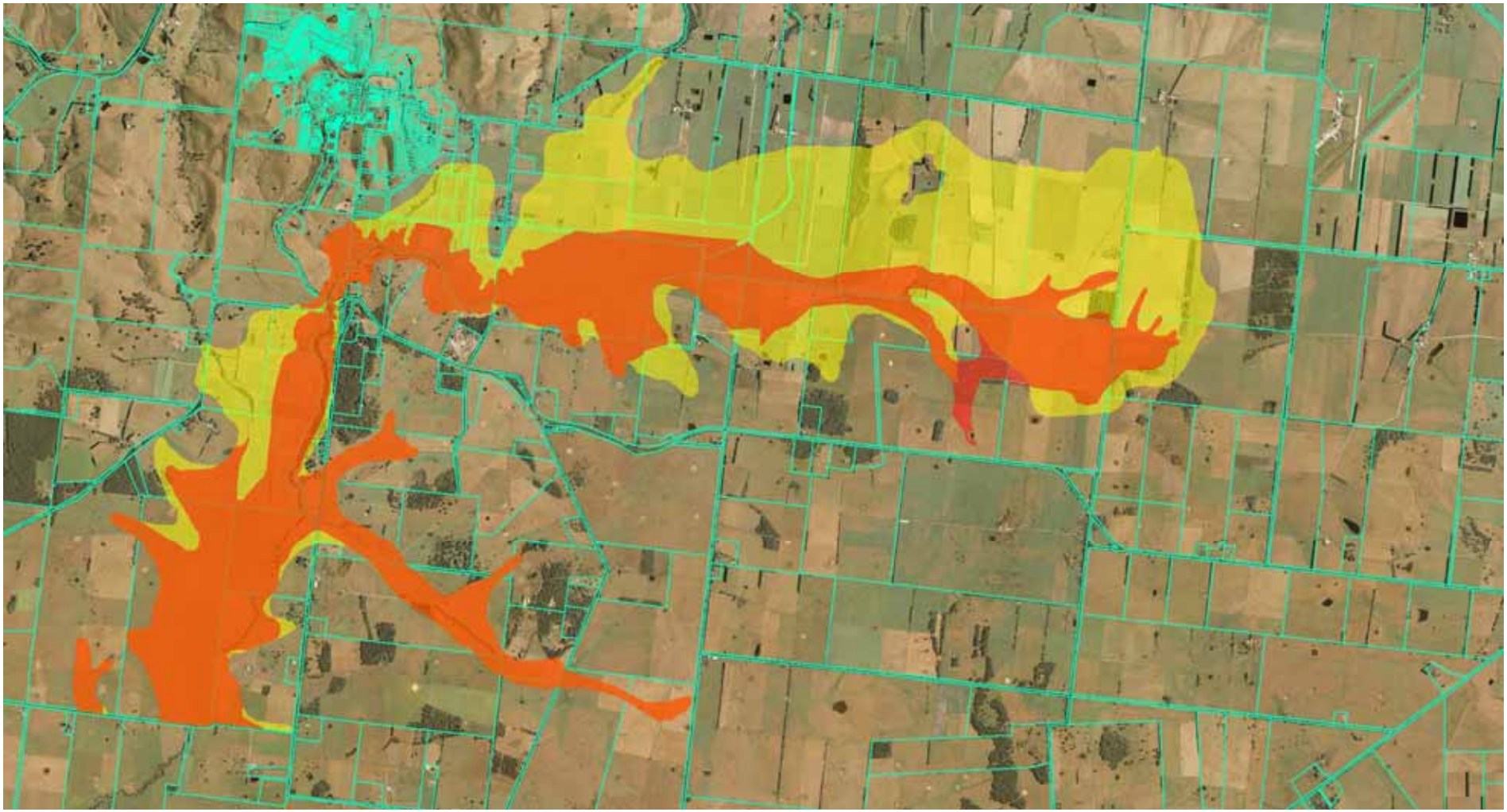
3. South Gippsland Shire Council does not provide flood height information.

Appendix D Changes to LSIO mapping


Revised flood mapping - C81
Middle Tarwin
Exhibited flood mapping - yellow
Revised flood mapping - red
N


Revised flood mapping - C81
Lower Tarwin
Exhibited flood mapping - yellow
Revised flood mapping - red
N
Text


Revised flood mapping - C81
Leongatha area
Exhibited flood mapping - yellow
Revised flood mapping - red
N



Upper Powlett proposed LSIO mapping changes

Exhibited flood mapping – Yellow; Proposed flood mapping – Red.