

**Draft Sunshine Coast Planning Scheme**  
Review of Submissions  
**Region Wide Key Issues Paper No. 6:**  
**Application and accuracy of overlays**

<b>Key Issue:</b>	<b>Application and accuracy of overlays</b>
No. of submissions:	175
Major issues raised:	Overlay constraint/feature non-existent Boundaries of overlay constraint/feature incorrect Underlying data for overlay constraint/feature flawed Modelling assumptions inappropriate

## 1.0 INTRODUCTION

The draft planning scheme includes a number of overlays that provide a means of identifying physical constraints and other features that may affect the use of land and development.

Many of the submissions relating to overlays<sup>1</sup> expressed concern that the overlay mapping contained in the draft planning scheme is inaccurate and that the constraints/features identified on some overlay maps are not present on particular sites or have been incorrectly classified.

In particular, submissions raise concern about some elements identified on the following overlays:

- (a) biodiversity, waterways and wetlands overlay (approximately 155 submissions);
- (b) bushfire hazard overlay (approximately 15 submissions);
- (c) flood hazard overlay (approximately 70 submissions); and
- (d) landslide hazard and steep land overlay (approximately 40 submissions).

Some submissions expressed support for the overlays in the planning scheme, particularly the Biodiversity, waterways and wetlands overlay and the Scenic amenity overlay.

This key issues discussion paper primarily deals with issues relating to the methodology used to inform the application of overlays and the way in which overlay constraints and features are represented on the planning scheme maps.

This Paper does not deal with the Extractive resources overlay or the Height of buildings and structures overlay.

Issues pertaining to the Extractive resources overlay are addressed in *Local Area Key Issues Paper No. 11: Extractive industry – Yandina Creek and Browns Creek Road*.

Issues pertaining to the Height of buildings and structures overlay generally relate to specific sites and have therefore been addressed in the applicable local plan area submissions table.

Some other overlay issues have also been dealt with in the applicable local plan area submission table, particularly where the issues raised are specific to a site and do not have broader implications for the application of overlays throughout the planning scheme.

<sup>1</sup> Some submissions dealt with multiple overlays.

## 2.0 EXISTING PLANNING SCHEME PROVISIONS

Both Maroochy Plan 2000 and Caloundra City Plan 2004 include overlays. Whilst they may be categorised differently, they generally cover a similar range of constraints and features.

In Maroochy Plan 2000, overlays are referred to as special management areas.

The following table provides an overview and comparison of overlays contained within the current planning schemes.

There are 10 overlays in Maroochy Plan 2000 and 13 overlays in Caloundra City Plan 2004.

Maroochy Plan 2000	Caloundra City Plan 2004
<ul style="list-style-type: none"> <li>• Acid sulfate soils</li> <li>• Bushfire prone areas</li> <li>• Cultural heritage places</li> <li>• Flood prone land and drainage constraint areas</li> <li>• Mineral and extractive resource and buffer areas</li> <li>• Nature conservation management areas</li> <li>• Steep and unstable land</li> <li>• Sunshine Coast Airport</li> <li>• Water resource catchment areas</li> <li>• Waterways, wetlands and fish habitat areas</li> </ul>	<ul style="list-style-type: none"> <li>• Acid sulfate soils</li> <li>• Aviation affected areas</li> <li>• Biting insects</li> <li>• Bushfire hazard management</li> <li>• Coastal management</li> <li>• Cultural heritage and character areas</li> <li>• Extractive resource areas</li> <li>• Flood management</li> <li>• Habitat and biodiversity</li> <li>• Natural waterways and wetlands</li> <li>• Steep slopes/stability</li> <li>• Visual management</li> <li>• Water resource catchments</li> </ul>

## 3.0 DRAFT SUNSHINE COAST PLANNING SCHEME

The draft planning scheme includes 14 types of overlay. Each of these overlays relate to one or more elements as described below:-

- (a) Acid sulfate soils overlay (Area A (below 5m AHD) and Area B (above 5m AHD and below 20 m AHD));
- (b) Aviation affected areas overlay (ANEF, facility sensitive areas, OLS, public safety areas and runway separation distances);
- (c) Biodiversity, waterways and wetlands overlay (native vegetation area, koala habitat area, waterways, wetlands, riparian protection areas and urban riparian areas);
- (d) Biting midges and mosquitoes overlay (freshwater breeding sites and buffer area, saltmarsh breeding sites and 15km affected area);
- (e) Bushfire hazard overlay (medium and high bushfire hazard area and buffer area);
- (f) Coastal protection overlay (coastal protection area, maritime development area);
- (g) Extractive resources overlay (State key resource processing area, State key resource separation area, local resource preparation area/processing area, local separation area, transport route and transport separation route);
- (h) Flood hazard overlay (flooding and inundation area);
- (i) Height of buildings and structures overlay (building heights);
- (j) Heritage and character areas overlay (State heritage place, local heritage place, neighbourhood character area);

- (k) Landslide hazard and steep land overlay (moderate, high and very high landslip hazard area, slope 15%-20%, 20-25%, greater than 25%);
- (l) Regional infrastructure overlay (gas pipeline corridor and buffer, high voltage electricity line and buffer, water supply pipeline and buffer, wastewater treatment plant buffer, major transport corridor and buffer);
- (m) Scenic amenity overlay (high scenic area, scenic route, regional inter-urban break); and
- (n) Water resource catchments overlay (water resource catchment area).

The overlays are represented on a series of maps which display the overlay elements. The overlay maps are complemented by:-

- (a) a **table of assessment for overlays** that specifies the circumstances in which an overlay code applies to a particular type of development (not all development is subject to overlay provisions even though within a mapped overlay area); and
- (b) an **overlay code** which provides the assessment criteria for development that is identified as being subject to overlay provisions.

A particular site may be affected by no overlays, one overlay or a number of overlays depending on its location and the nature, form, scale and intensity of the development.

Large undeveloped sites included in the urban growth management boundary or rural residential growth management boundary that are entirely or mostly affected by one or more critical constraints identified on an overlay map (i.e. flooding, landslide hazard and steep land or biodiversity (native vegetation area), waterways or wetlands) have been included in the Limited development (constrained land) zone<sup>2</sup>.

#### 4.0 CONSIDERATION OF ISSUES

##### Role of overlays and policy basis

Overlays are a standard feature of contemporary planning schemes and play an important role in identifying land constraints and other features that need to be taken into account during the development process.

In most cases overlays reflect a State interest that is identified in the SEQ Regional Plan or a State Planning Policy (or both). They also reflect local considerations.

##### Application of overlays

It is important to understand that the presence of an overlay affecting a particular site or area does not necessarily mean that the overlay is a consideration in the development process. It is the correlation between an overlay and the development type that determines whether that overlay applies. For example, overlays do not generally apply to development occurring within an existing building and many rural uses conducted in rural areas are exempt from overlays.

The Table of assessment for overlays in Part 5 of the draft planning scheme identifies:

- (a) the circumstances in which an overlay applies to a development;
- (b) whether the overlay changes the provisional level of assessment for a development; and
- (c) the assessment criteria (overlay code or part thereof) that is relevant to a development.

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<sup>2</sup> See also **Region Wide Key Issues Paper No.5: Use and application of Limited development (constrained land) zone.**

### Acknowledged limitations of overlay mapping

The accuracy of overlay mapping is a common issue in most planning schemes. This is because:-

- (a) new data sets are difficult and expensive to create;
- (b) existing data sets are drawn from a range of different sources at various scales and levels of accuracy (including from State government sources); and
- (c) most data sets tend to become quickly out of date and it is not time or cost effective to update them more than occasionally.

For this reason, where overlays are shown to affect a particular site, they are generally considered to provide a trigger for consideration of an overlay issue (to be verified by further on-site investigations) rather than an absolute delineation of a constraint or feature.

In this way it is acknowledged that the planning scheme does not (and cannot) contain perfect knowledge about overlay matters.

Having said this, in preparing the draft planning scheme significant time and effort was expended in seeking to make the overlay mapping as accurate as possible recognising the acknowledged limitations described above. Compared to many other local government areas, the Sunshine Coast has highly developed data sets with reasonable levels of accuracy.

### Data sources and models underlying particular overlay mapping

The following provides a brief overview of the data that was used to create the mapping for those overlays that have been subject to most of the submissions received about this topic. It also identifies the key issues raised by submitters in respect to those overlays.

- (a) Biodiversity, waterways and wetlands overlay

The Biodiversity, waterways and wetlands overlay includes two components – native vegetation and koala habitat area mapping and waterways, wetlands and associated buffer areas mapping.

A significant number of submissions relating to this overlay have raised concern about the Koala habitat area mapping.

The data underlying this overlay element was sourced directly from the State government as a requirement of State Planning Policy 2/10 Koala Conservation in South East Queensland and has been created at a very broad State-wide scale.

Given the inherent issues with this overlay element, it is considered appropriate that it be removed from the revised Biodiversity, waterways and wetlands overlay maps incorporated in the final planning scheme.

Issues related to the protection of koala habitat should be able to be appropriately addressed through the native vegetation area element of the Biodiversity, waterways and wetlands overlay and an understanding of the habitat types that support koala populations.

A smaller but still significant number of submissions raised concern about the identification of riparian areas in the planning scheme. In particular, submissions raised concern about the application of the urban riparian area in existing developed areas.

An internal review by Council officers has identified that this overlay element is of limited benefit given its area of application and that it should be removed from the revised Biodiversity, waterways and wetlands overlay maps incorporated in the final planning scheme.

Another concern raised in submissions is the incorrect classifications of artificial waterways as natural waterways. This is particularly problematic in the former lowland cane growing areas where farm drains have been erroneously classified as natural waterways. Therefore, it is recommended that this is rectified on the revised Biodiversity, waterways and wetlands overlay maps incorporated in the final planning scheme.

A number of submissions also raised concerns in relation to the wetlands mapping, in particular submissions raised concern that areas mapped were not wetland vegetation. The data underlying this overlay element was sourced from the State government. It is intended to undertake a major review of the wetlands dataset with a view to reducing the extent of the dataset to key wetland areas only. It is noted that this will also necessitate a review of (and reduction in the extent of) riparian buffer areas associated with the wetlands dataset. This review will inform the finalised Biodiversity, waterways and wetland overlay.

Most of the data informing the other elements of this overlay was prepared by Council using aerial laser survey, aerial photography, some limited ground truthing and mapping exercises to cleanse the data and remove smaller polygons, background scatter and other data aberrations (e.g. vegetation mapping).

Whilst it is acknowledged that there are still some errors in the data these are unlikely to be significant at a regional scale. Nevertheless, further refinement of the data will be undertaken prior to the finalisation of the planning scheme to increase the current level of accuracy as far as reasonably practicable.

(b) Biting midges and mosquitoes overlay

The biting midges and mosquitoes overlay identifies breeding sites and specifies a 15km biting midges and mosquito affected area along the coastal and lowland plains part of the region.

Although there were not a significant number of submissions relating to this particular overlay, an internal officer review has identified that matters raised in this overlay can appropriately be dealt with through other mechanisms in the planning scheme (i.e. relevant use codes and other development codes) and that efficiency improvements would be achieved by removing this overlay from the final planning scheme.

(c) Bushfire hazard overlay

The bushfire hazard overlay identifies medium and high bushfire hazard areas and buffer areas to these hazard area categories.

The data underlying this mapping was produced using an algorithm that categorises hazard risk based on an assessment of slope, aspect and vegetation type.

The methodology used to identify areas potentially subject to bushfire hazard is well established and generally applied in a similar way across the State.

Although the underlying data sets informing the algorithm are an essential determinant of mapping accuracy it is considered that in the case of the Sunshine Coast, this data is relatively sophisticated compared to what is available for many other local government areas.

The identification of buffer areas in addition to hazard risk areas is a recent addition to bushfire hazard mapping that does not exist in any of the three existing planning schemes but which is now recognised as good practice as recommended by the CSIRO following recent bushfire events in southern Australia.

For these reasons, it is not recommended to make any substantive changes to the Bushfire hazard overlay mapping.

(d) Flood hazard overlay

The Flood hazard overlay identifies flood and inundation areas derived from flood models prepared by Council for different catchments across the region. Where no flood modelling is available, historical or recent flood data has been used.

Where models exist, they represent the best available data at a catchment wide scale and include a contingency for the predicted impacts of climate change and storm tide inundation (where relevant).

Council has in place a program to progressively update the flood hazard overlay maps in the planning scheme as new or updated modelling is prepared for particular catchments. This is an important part of maintaining the accuracy and operational efficiency of the planning scheme into the future.

If timing allows, updated overlay maps will be incorporated in the final planning scheme (before it commences). If this is not achievable it is intended that a future planning scheme amendment will incorporate the updated mapping.

A number of submissions have raised concerns about the flood hazard overlay mapping and how it has impacted on particular properties or areas.

Most of these submitters expressed concern with sites in master planned residential estates that have previously been filled as part of localised flood management strategies but which have been identified as having a residual flood risk on the overlay maps (i.e. parts of Pelican Waters, Brightwater, etc).

Other submitters expressed concern that the flood and inundation area identified on the Flood hazard overlay maps is different to the hazard areas shown on other flood maps contained on Council's website or from other sources.

In response to these submissions, the following points are made:

- a. the flood hazard and inundation area is a planning tool only and does not specify a level of hazard in different flood events;
- b. some areas subject to pre-existing development approvals may have modified flood extents that alter or eliminate the risk of flooding for that area;
- c. some areas subject to pre-existing development approvals may retain a residual risk of flooding due to changes in the way in which the defined flood event has been determined over time (i.e. more recent modelling has revised the level of flood susceptibility);
- d. the flood extents shown on council's website are based on current climate conditions. Most of the flood extents within the flood hazard overlay incorporate future climate change projections. This is because the datasets are used for different purposes (e.g. current evacuation planning vs. future development planning).

These points are not currently acknowledged on the overlay maps or in the text of the draft planning scheme but are important to understanding the role and operation of the Flood hazard overlay. It is recommended that these points are incorporated as notes in the final planning scheme.

A number of other submitters have raised queries about technical aspects of the flood modelling underlying the flood hazard overlay. In particular, submitters have sought clarification of and/or raised queries about the contingency adopted for the predicted effects of climate change. A further number of submissions supported the provisions of the planning scheme relating to climate change and/or requested such provisions be strengthened.

The flood hazard overlay mapping included in the draft planning scheme was based on modelling which incorporated a 1.1m contingency for the predicted effects of climate change (sea level rise by 2100).

This scenario reflects a precautionary approach to the potential risks posed by climate change. It considers the possible high end risk identified in the Fourth Assessment Report by the International Panel on Climate Change (IPCC) and more specifically in research undertaken subsequent to the Fourth Assessment Report. This scenario factors in recent publications that explore the impacts of recent warming trends on ice sheet dynamics beyond those already included in the IPCC projections.

In contrast to this, the Queensland government has identified a 0.8m contingency for planning purposes. The State government position can reasonably be described as the medium scenario that represents the upper end of the Fourth Assessment Report by the IPCC and is in line with recent global emissions and observations of sea level rise.

The next IPCC Assessment Report is due to be released in late 2014. This is likely to further clarify the preferred approach to considering the impacts of climate change on sea level rise.

Until this report is released, it is considered appropriate to utilise a 0.8m contingency for the Flood hazard overlay mapping. This is because:

- a. it is consistent with the recommendations of the most recent report of the IPCC;
- b. it aligns with the position of the Queensland government;
- c. adopting a higher contingency would disadvantage recent developments that have relied upon a 0.8m contingency in flood modelling and have been proactive in considering and responding to the predicted impacts of climate change; and
- d. the freeboard allowance specified in the Flood hazard overlay code already provides a further protection against the revising up of the predicted impacts of climate change in the future.

This change to the modelling parameters should result in a reduction in the extent of areas identified as flood and inundation areas on the overlay maps. Depending on the timing required for remodelling the amended overlay maps it is intended that the revised mapping will be incorporated in the final planning scheme or as a future amendment to the planning scheme.

Sensitivity testing for a contingency of 1.1m should be undertaken as part of the development process where appropriate.

(e) Landslide hazard and steep land overlay

The landslide hazard and steep land overlay comprises of two components – landslide hazard and steep land.

Three different categories of steep land were identified using aerial laser survey and a digital terrain model.

Landslide hazard risk categories were then determined using a combination of the steep land data and other known characteristics for landslide susceptibility.

Mapping of steep land and landslide hazard for the draft planning scheme was prepared by a geotechnical firm using their risk assessment model and their local knowledge of landslide hazard on the Sunshine Coast. The methodology behind this mapping was independently reviewed by another geotechnical firm.

There is limited opportunity to further refine the landslide hazard and steep land overlay mapping having regard to the primary data sources described above and the technical parameters used to determine hazard susceptibility.

Some submissions have expressed concern about the accuracy of the landslide hazard mapping and its use as a definitive statement of hazard rating.

However, the landslide hazard mapping has been based on a rigorous technical assessment and is considered to be the best available data at this time. The overlays provide a trigger for further assessment as part of any development application process.

(f) Heritage and neighbourhood character areas overlay

The heritage and neighbourhood character area overlay identifies State heritage places, local heritage places, sites adjacent to State and local heritage places and neighbourhood character areas.

State heritage places have been identified from the Queensland Heritage Register under the *Queensland Heritage Act 1992*.

Local heritage places and neighbourhood character areas within the former local government areas of Caloundra have been carried forward into the draft planning scheme with no additional sites added.

Only a limited number of local heritage places are currently included in Maroochy Plan 2000. A heritage validation study of a number of informally identified places has resulted in the identification of a number of additional sites for this part of the region.

It is acknowledged that the list of heritage places and neighbourhood character areas in the draft Planning Scheme is not definitive. However, it does represent a good start that can be built on as further validation work is undertaken.

The individual consideration of submissions relating to particular places and areas has been addressed in the applicable local plan area submissions table.

(g) Scenic amenity overlay

The scenic amenity overlay includes three components – high scenic areas, regional-inter-urban break and scenic routes. The main concern identified in submissions relates to the identification of high scenic areas.

High scenic areas were identified using a scenic amenity model that combined land characteristics (landscape, slope and vegetation) with an assessment of visual exposure and importance.

Whilst there is some support in submissions for the maintenance and extension of this overlay element in the final planning scheme, it is acknowledged that the process for determining affected areas is subjective and that this has resulted in some inconsistency in its application across the region.

Given that the effect of this overlay is fairly limited, it is considered appropriate to remove this element from the Scenic amenity overlay maps but to retain the related overarching provisions in the Strategic framework. In this way the issue will remain relevant for large scale or other development that triggers assessment against the Strategic Framework but not have broader application to small scale or low risk development.

Other matters

As part of the finalisation of the planning scheme it is proposed to undertake a cadastral enhancement program that will better align the digital cadastral database with a large number of fixed survey points. It is anticipated that this enhancement program will improve the accuracy of all mapping incorporated in the final planning scheme, with particular benefits for overlays.



## Conclusion

Overlays provide a trigger for consideration of an overlay issue (to be verified by further on-site investigations) rather than an absolute delineation of a constraint or feature.

Overlays apply only in the circumstances provided for by the planning scheme and do not apply to all development or existing lawful uses as some respondents are concerned about.

The overlays used in the planning scheme have been developed using the best available data and appropriate models and methodologies. However, there are some limitations to the accuracy of the data included on the overlay maps and it is important to acknowledge and work within these limitations.

To the extent the time and budget allows, it is recommended that the overlay maps be updated and refined to maximise their currency and accuracy in the final planning scheme.

Some specific overlays or overlay elements should be removed and consideration should also be given to reviewing the detailed content of the other overlays included in the final version of the planning scheme.

## **5.0 DIRECTION**

**That:**

### **Biodiversity, waterways and wetlands overlay**

- (a) koala habitat areas be removed as an element from the Biodiversity, waterways and wetlands overlay maps;**
- (b) urban riparian areas be removed as an element from the Biodiversity, waterways and wetlands overlay maps;**
- (c) man-made waterways that are identified as natural waterways (e.g. cane drains) be removed from the Biodiversity, waterways and wetlands overlay maps or otherwise reclassified as appropriate;**
- (d) a significant review is undertaken of the wetlands mapping with a view to reducing the extent of, and improving the accuracy of, the dataset and associated riparian buffers;**

### **Biting midges and mosquitoes overlay**

- (e) all elements of the Biting midges and mosquitoes overlay be removed from the final planning scheme;**

### **Flood hazard overlay**

- (f) the flood and inundation area element of the Flood hazard overlay be revised to reflect the most up-to-date modelling available;**

**Note**—if updated modelling is not available prior to the finalisation of the planning scheme it will be incorporated as a future planning scheme amendment.

- (g) the contingency for the projected impacts of climate change on flood hazard be set at 0.8m;**
- (h) the following notes be included on the Flood hazard overlay maps and/or in the Flood hazard overlay code:-**
  - (i) the flood hazard and inundation area is a planning tool only and does not specify a level of hazard in different flood events;**

- (ii) some areas subject to pre-existing development approvals may have modified flood extents that alter or eliminate the risk of flooding for that area;
- (iii) some areas subject to pre-existing development approvals may retain a residual risk of flooding due to changes in the way in which the defined flood event has been determined over time;
- (i) for those catchments where flood modelling is yet to be undertaken by Council, the interim flood mapping prepared by the Queensland Flood reconstruction Authority, or a more appropriate methodology if available, be included on the applicable flood hazard overlay maps;

**Scenic amenity overlay**

- (j) high scenic areas be removed as an element from the Scenic amenity overlay maps;

**All overlays**

- (k) other overlay elements be reviewed with a view to maximising their level of accuracy and the efficiency with which they operate across the planning scheme area;
- (l) all overlay maps be reviewed to remove background scatter and residual small isolated polygons which do not reflect a material constraint to development;
- (m) the following notes be included on the overlay maps, in the table of assessment for overlays and in the applicable overlay code as appropriate:-
  - (i) overlays provide a trigger for consideration of an overlay issue to be verified by further on-site investigations;
  - (ii) in certain circumstances pre-existing development approvals may override the operation of an overlay; and

**Other**

- (n) an implementation note be prepared to complement the final planning scheme and provide guidance to planning scheme users about the use and application of overlays.