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KENNETT RIVER, WYE RIVER & SEPARATION CREEK STRUCTURE PLANS

FINAL

COLAC OTWAY SHIRE

February 2008

Acknowledgements

Project Steering Committee

A Project Steering Committee (PSC) was formed to oversee the preparation of the Structure Plans and to provide direction on the project. Members of the PSC include:

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Stakeholder Reference Group

A stakeholder reference group has been established which consists of the following:

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David Henschall	Wye River and Separation Creek Progress Association
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Gendall Atkinson	Wye River and Separation Creek Foreshore Committee of Management
Gary McPike	Apollo Bay Kennett River Public Reserves Committee of Management
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How the Structure Plan report is organised

This volume of the report (Volume 1) contains the Structure Plans for Kennett River, Wye River and Separation Creek, with objectives and strategies for each of the identified themes. This Volume integrates the planning policy context and the outcomes of previous reports into a holistic form that is based on guiding principles for the three hamlets.

An Action Plan is included in the Appendix to this report, detailing how the strategies will be implemented.

Volume 2 of the report contains the Background and Discussion Paper (May 2006) and the Report on Community Consultation (July 2006). The Background and Discussion Paper outlines the existing conditions of the hamlets and summarises the considerable volume of planning policy that has been developed over the past 7 years for the Victorian coast and its settlements. It also summarises the extensive range of studies on issues and opportunities for the three hamlets that have been undertaken in the same time period.

Volume 2 can be referred to for further detailed information on State government and other strategies and for greater detail about the technical issues raised in previous reports.

The Report on Community Consultation (July 2006) presents the comments of residents and landowners in response to the issues raised in the Background and Discussion Paper. It represents the extent to which views about the three hamlets are shared by the participants.

Volume 2 can be referred to for detail on comments made by residents and landowners in response to issues in the three hamlets.

Executive Summary

Wye River, Separation Creek and Kennett River are small coastal hamlets in a spectacular natural setting of national significance. Each hamlet has the river estuary and beach as its focal point and each is nestled into the heavily vegetated foothills of the Otway Ranges.

The Victorian coast has been the subject of numerous planning reports due to the growing desire of Victorians to relocate or have a holiday house by the sea. The Great Ocean Road region, which contains the 3 hamlets, has been extensively studied and detailed plans have been adopted at State and Local Government level to strike a balance between the renowned natural and scenic values of the area and the pressure of development.

The adopted planning policy decision for the region has been to restrict development in the three hamlets and provide for future population growth in Apollo Bay.

At the same time, numerous technical reports have been prepared on the three hamlets. Waste water management, water supply, stormwater management, landslip, neighbourhood character and foreshore management have all been the subject of detailed studies on issues and opportunities.

These Structure Plans are built on the planning policy framework adopted by the State Government and the Colac Otway Shire and are directed by the findings of the technical reports on the hamlets.

The Structure Plans recommend a containment of growth with infill development based on the current zoning regime and retention or redevelopment of existing commercial and community facilities. No land is proposed to be rezoned to allow more development.

Tourist development of a small scale can occur at strategic locations close to these facilities. Public realm works undertaken by the Council and other relevant authorities are recommended to be focused on enhancing existing facilities and focal points in the hamlets.

The recommendations of the technical studies have been adopted and incorporated in the Structure Plans. The recommendations consistently choose options that would have very low impacts on the appearance of the hamlets yet would resolve serious environmental issues caused by existing waste water and stormwater systems.

The management of effluent disposal is a high priority. A solution for this has not been found for Kennett River. This is a major concern and requires advocacy on behalf of the Council and funding on behalf of the State Government.

The Structure Plans anticipate that the hamlets will retain their role and character over the next 20 years. In other words, they will continue to be very attractive places with a limited number of permanent residents, a high number of part time residents and a regular holiday rental during peak season. There will continue to be a basic level of community and commercial services.

Guiding Principles for the Structure Plans

The following principles have guided the preparation of the Structure Plans, and future proposals can be measured against them to ensure that a positive contribution will be made to realising a vision for the area.

- Wye River, Separation Creek and Kennett River will remain as distinct coastal hamlets nestled in the foothills of the Otway Ranges
- The impact of the hamlets on the natural environment will be as minimal as possible with water being sustainably managed and vegetation acknowledged and valued.
- The primary roles of the hamlets will be to provide housing for permanent and part time residents and to provide a diverse range of holiday accommodation

Implementation and Action Plan

An Action Plan details how objectives and strategies will be implemented, the responsibility within Council for implementation, and any external partners who will assist in implementation, and the broad timeframes and priorities for implementation.

Monitoring and Review

The achievement of the objectives and strategies of the Structure Plans will be monitored on an annual basis, with a review of the Structure Plans to take place every 5 years. The 5 yearly review will ensure that the objectives and strategies are up to date and reflect new and emerging planning policy and issues, to ensure that the Structure Plans remain a flexible and relevant planning instrument while, at the same time, providing certainty about the future development of the area to the community and Council.

1. About the Study

1.1 The Brief

In May 2007 the Colac Otway Shire engaged planning consultants Planisphere to prepare Structure Plans for Kennett River, Wye River and Separation Creek. Kennett River, Wye River & Separation Creek are small coastal hamlets and as such have a particular suite of planning issues. Officers of the Colac Otway Shire prepared a *Background and Discussion Paper* in May 2006 which was the focus of community meetings and submissions in May and June 2006.

A comprehensive list of issues to be responded to in the Structure Plan was derived from the *Background and Discussion Paper* and the community consultation. These are:

- The definition of settlement boundaries
- Stormwater management and effluent disposal
- Water supply
- Estuary management
- Wildfire threat
- Building in landslip prone areas
- Open space and recreation opportunities
- Pedestrian and bicycle links
- Traffic management and road treatments
- Protection of neighbourhood character

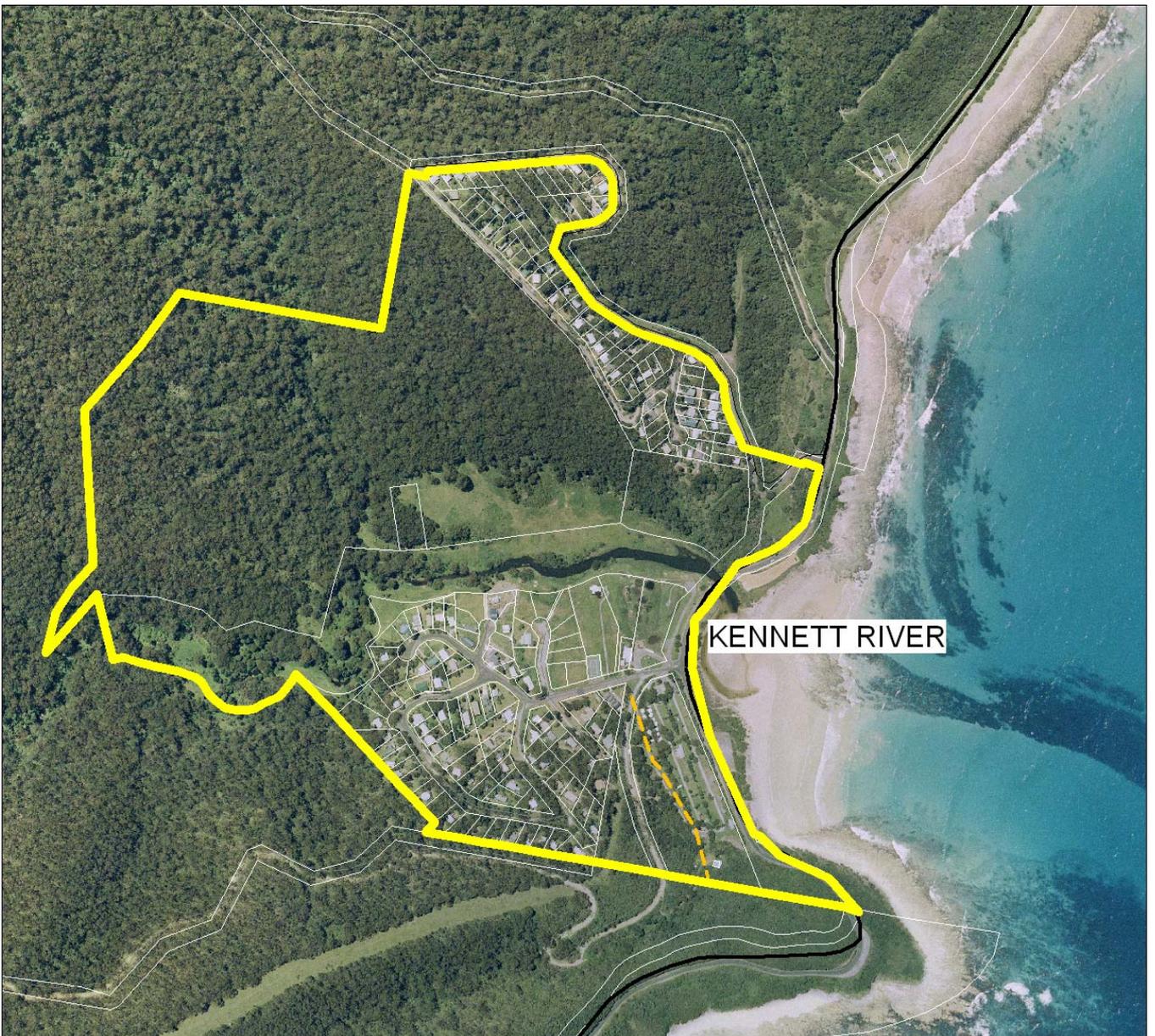
The Structure Plan provides a framework for the ecologically sustainable development and integrated management of the hamlets. It will guide ongoing land use, built form and public space development to achieve overall economic, social and environmental objectives. The Structure Plan is intended to be a framework articulating how the hamlets will develop and the actions needed to achieve that outcome. An Action Plan of the strategies to deliver the desired outcomes is part of the Structure Plan. These strategies will be delivered through actions of individual landowners, the Council and other authorities with responsibilities to manage the foreshore, water and sewerage and fire hazard.

As the Structure Plan has a 20 year time span, the changes proposed in the plan will take place incrementally, with some occurring in the short term and others taking the full life of the plan to come to fruition. Monitoring success and reviewing and updating the Structure Plan to take these changes into account will be important throughout the life of the Plan, to ensure that it remains a responsive and flexible planning tool.

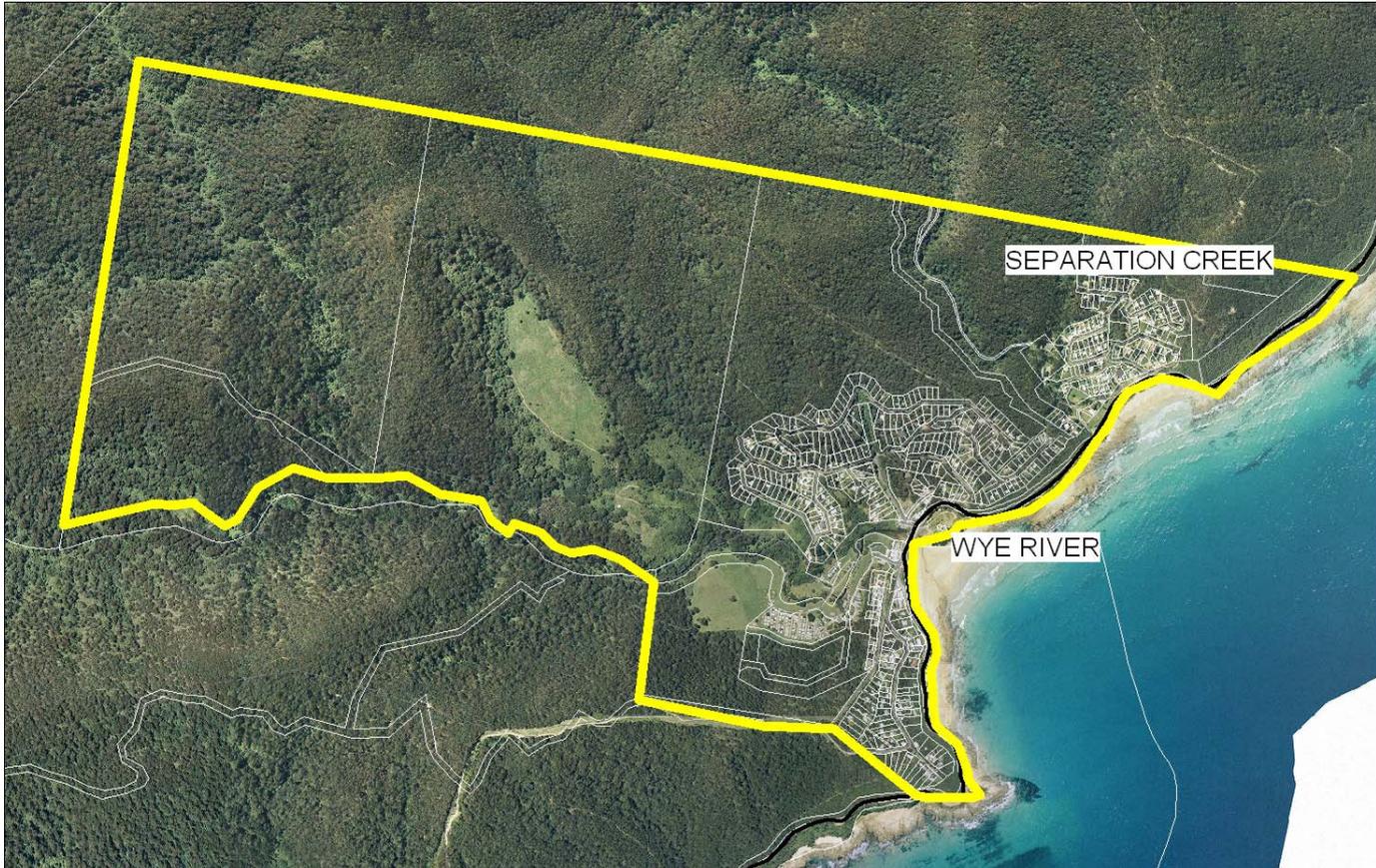
1.2 Study Areas

The Study Areas for the Structure Plan are:

Map 1: Kennett River Study Area



Map 2: Wye River and Separation Creek Study Area



1.3 Study Process

This section outlines the stages in the structure planning process. Stages 1-3 have been completed by the Council and this Final Structure Plans Report is Stage 6 of the process.

Stage 1 Inception and Analysis

This involved a review of existing State, Regional and Local Planning Policies for the coast and the hamlets. These policies set the agreed direction for future management and change for the Coast and the rivers and estuaries that are important natural features of the area.

The policies provide clear direction on the location of future population growth in the region, on the status of the significant landscapes along the coast and on the balance between growth and conservation that will provide a sustainable future for this area.

These policies have a considerable bearing on the overall direction of the Structure Plans and are the context for the key decision of settlement boundaries.

Relevant State policies include:

- *The Victorian Coastal Strategy (2002)*
- *The Great Ocean Road Region Land Use and Transport Strategy (2004)*
- *The Corangamite Regional Catchment Strategy (2003) and Draft River Health Strategy (2006)*
- *The Coastal Spaces Inception Report (2005) and Recommendations Report (2006)*
- *The Central West Victoria Regional Coastal Action Plan (2003)*
- *The Central West Victoria Estuaries Coastal Action Plan (2005).*

Over the past 5 years, considerable research has been undertaken into major elements of the Structure Plans for the three hamlets. Issues such as foreshore management, neighbourhood character, water supply, stormwater management, wastewater management and local heritage have been carefully studied with a view to improve and sustain the local environment. These reports have been the subject of considerable community consultation and have been supported or enacted to varying degrees.

These recommendations of these reports have a considerable bearing on the detail of the Structure Plans.

The relevant previous reports are:

- *Wye River and Separation Creek Foreshore Masterplan (1997)*
- *Issues Paper Wastewater Management Kennett River (2002)*
- *Issues Paper Wastewater Management Wye River (2002)*
- *Coastal Community Revitalisation Project (2003)*
- *Three Towns Stormwater Management Strategy Concept Study Final Report (2004)*
- *Skenes Creek, Kennett River, Wye River and Separation Creek Neighbourhood Character Study Background Report (2005)*
- *Wye River Separation Creek, Kennett River Concept Design Final Report (2007).*

This stage of the project also determined the extent and timing of community consultation on the various stages of the Structure Plans.

Stage 2 Background and Discussion Paper

This paper which was prepared in May 2006, provides background information and raises key issues that will need to be addressed in the future planning for the three hamlets. It 'sets the scene' for the Structure Plans. It also served to facilitate community consultation on the six key areas of:

- Settlement boundaries
- Stormwater management
- Effluent disposal
- Water supply
- Recreation (including pedestrian/bicycle linkages)
- Public realm improvements (including traffic and footpath issues).

It also contains a summary of what the community had told the Council regarding its aspirations and the issues it believed needed to be addressed. These were summarised as being:

“a concern about the degradation of their natural environment, especially with respect to the water quality of the rivers and estuaries

a belief that an integrated holistic approach to the issues of wastewater, stormwater, drainage and landslide management is essential for ongoing environmental sustainability of the hamlets.”

Stage 3 Consultation

Community consultation consisted of workshops at Wye River and Melbourne and an opportunity to prepare written submissions on the *Background and Discussion Paper*. The *Community Consultation Report 1 – July 2006* presenting the outcomes of this consultation was prepared by the Council. The report presents information on all six areas outlined by the Council and suggests a range of improvements for the hamlets.

Step 4 Draft Structure Plans

A Draft Structure Plans report was prepared for the three hamlets. This report was based on site inspections, the policy framework, the technical reports and the outcomes of the first round of community consultation.

Step 5 Consultation

The draft Structure Plans report was adopted by the Council to allow for public exhibition of the report. A second round of consultation occurred as part of this exhibition process. This included Community Workshops in Wye River and Melbourne. The written submissions resulting from this consultation were reported to the Council and the recommended changes were adopted.

Step 6 Final Structure Plans and Implementation Recommendations

This is the final Structure Plans report, incorporating the recommended changes.

1.4

Community Consultation

The Final Structure Plans report was prepared with considerable community input.

Consultation A:

Prior to the preparation of the draft Structure Plans report, community consultation consisted of workshops at Wye River and Melbourne and an opportunity to prepare written submissions on the Background and Discussion Paper. A report presenting the outcomes of this consultation (Community Consultation Report 1 – July 2006) was prepared by the Council. The report presents information on all six areas outlined by the Council and suggests a range of improvements for the hamlets.

Consultation B: Draft Structure Plans

Further consultation based on the Draft Structure Plans report occurred in November 2007. This consultation included Community Information Sessions in Wye River and Melbourne. The results of this consultation were reported to the Council.

At the conclusion of this second round of consultation, a site inspection was undertaken by Council officers and representatives of the owner of land immediately west of Wye River. The outcome of this inspection was a recommendation to Council to identify a Further Investigation Area for the purpose of a mix of open space / recreation, non-urban form tourism accommodation and small scale residential development on land adjacent to the western boundary of the Caravan Park. This Further Investigation Area would be subject to further, detailed planning and consultation to investigate what is possible.

The Structure Plans report does nothing more than direct that this proposal be the subject of a separate planning process once the Structure Plans are adopted.

Further discussion on this process is provided in Section 4.2.

A detailed summary of the outcomes of Consultation A can be found in Volume 2: Background Report.

A detailed summary of the outcomes of Consultation B (with the exception of the site inspection described above) is provided in the Recommended Changes Report provided to the Council.

2. Guiding Principles for the Structure Plan

Guiding Principles for the Structure Plans

The following principles have guided the preparation of the Structure Plans, and future proposals will be measured against them to ensure that a positive contribution will be made to realising a vision for the area.

- Wye River, Separation Creek and Kennett River will remain as distinct coastal hamlets nestled in the foothills of the Otway Ranges
 - The impact of the hamlets on the natural environment will be as minimal as possible with water being sustainably managed and vegetation acknowledged and valued.
 - The primary role of hamlets will be to provide housing for permanent and part time residents and a diverse range of holiday accommodation.
-

Map 3: Key Directions: Kennett River



- Coastal settlement boundary
- Potential diverse, modest scale accommodation opportunity

Landscape & Settlement Character

- Continue to protect and maintain the landscape setting of the three hamlets.
- Ensure that the redevelopment of housing lots respects and is in keeping with the character of the three hamlets.
- Ensure that diverse accommodation of modest scale suitable for tourist uses is respectful of the existing and preferred character of the towns and the context of the central location that is proposed.

The Size of Settlements (Settlement Boundaries)

- Contain growth of the hamlets within the existing boundaries.

Environment

- Ensure that waste water from existing and proposed development is effectively managed so that no undue environmental effects occur.
- Ensure that individual landowners remain responsible for their own water supply
- Manage stormwater drainage recognising the constraints posed by the unique climatic, geological and environmental setting.
- Reduce the threat of wildfire while where possible maintaining the vegetated character of the hamlets.
- Reduce the likelihood of landslip.

Activities

- Maintain the foreshore area and keep as natural as possible
- Minimise intrusion of new structures
- Provide quality facilities to provide for and attract tourism
- Ensure that the foreshores are readily accessible from all areas of the hamlets.
- Support the growth of tourism as an employer for the region
- Continue to provide commercial and retail services by Incremental change to existing facilities
- Continue to provide tourist accommodation principally in the form of holiday rental of single dwellings.
- Provide diverse accommodation of a modest scale, suitable for tourism in the central locations shown on the Structure Plan maps

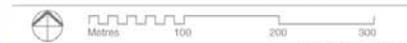
Access

- Provide a road network that reflects the character of the hamlets and acknowledges that these roads are shared by vehicles and pedestrians
- Improve pedestrian access to the foreshore.
- Improve pedestrian access between the beach and the hamlets, particularly the general stores/café.

Kennett River
Key Directions

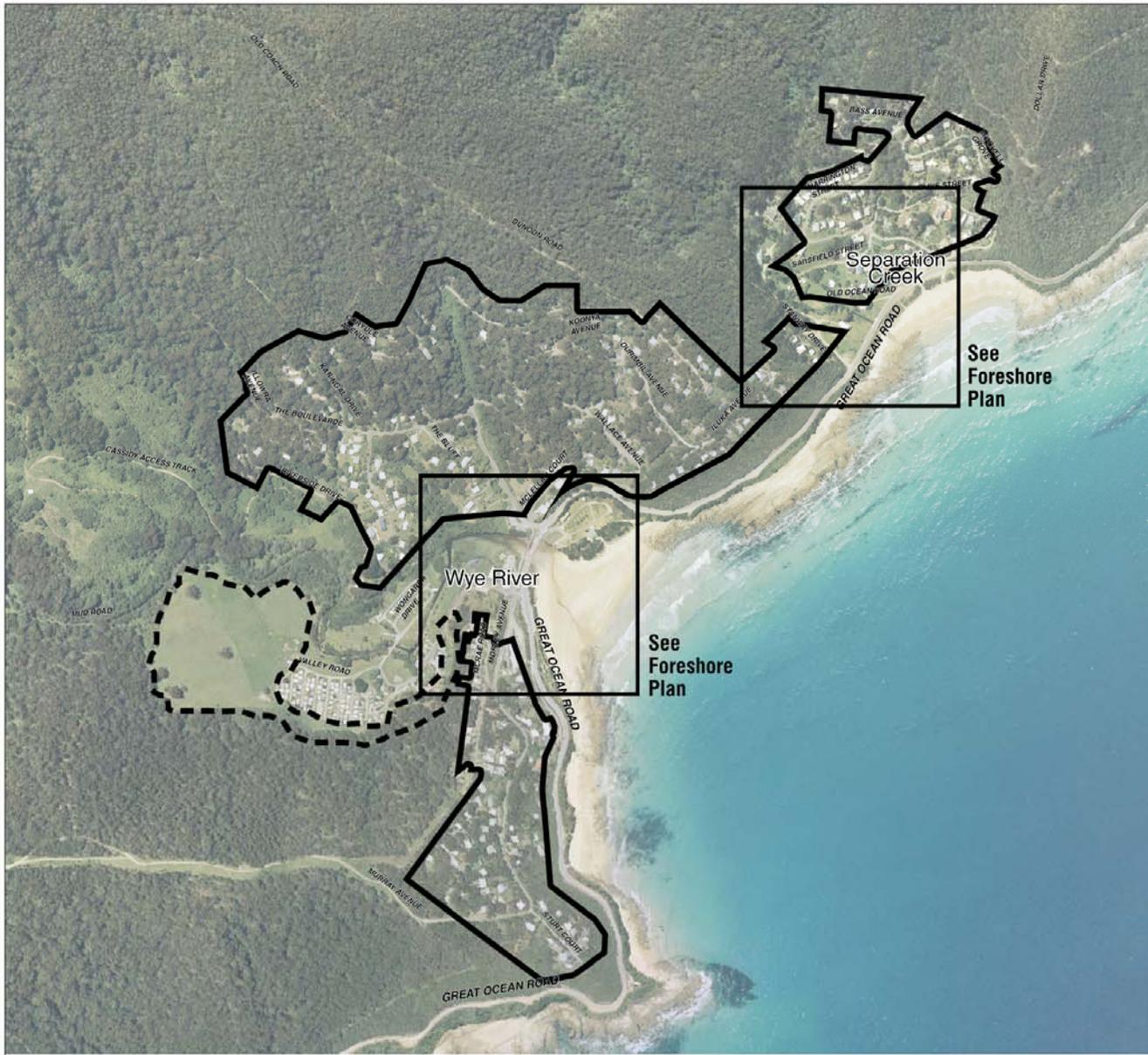
Kennett River, Wye River & Separation Creek Structure Plan

date | Jan / 08 revision | 03 client | Colac Otway Shire



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Map 4: Key Directions: Wye River and Separation Creek



-  Coastal settlement boundary
-  Future Investigation Area

Landscape & Settlement Character

- Continue to protect and maintain the landscape setting of the three hamlets.
- Ensure that the redevelopment of housing lots respects and is in keeping with the character of the three hamlets.
- Ensure that diverse accommodation of modest scale suitable for tourist uses is respectful of the existing and preferred character of the towns and the context of the central location that is proposed.

The Size of Settlements (Settlement Boundaries)

- Contain growth of the hamlets within the existing boundaries.

Environment

- Ensure that waste water from existing and proposed development is effectively managed so that no undue environmental effects occur.
- Ensure that individual landowners remain responsible for their own water supply
- Manage stormwater drainage recognising the constraints posed by the unique climatic, geological and environmental setting.
- Reduce the threat of wildfire while where possible maintaining the vegetated character of the hamlets.
- Reduce the likelihood of landslip.

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- Maintain the foreshore area and keep as natural as possible
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- Support the growth of tourism as an employer for the region
- Continue to provide commercial and retail services by incremental change to existing facilities
- Continue to provide tourist accommodation principally in the form of holiday rental of single dwellings.
- Provide diverse accommodation of a modest scale, suitable for tourism in the central locations.

Access

- Provide a road network that reflects the character of the hamlets and acknowledges that these roads are shared by vehicles and pedestrians
- Improve pedestrian access to the foreshore.
- Improve pedestrian access between the beach and the hamlets, particularly the general stores/café and hotel.

Wye River & Separation Creek

Key Directions

Kennett River, Wye River & Separation Creek Structure Plan

date | Jan / 08 revision | 03 client | Colac Otway Shire



3. About the Study

This Structure Planning Process draws on and integrates the findings of the considerable amount of research undertaken in the hamlets. Through these reports, the bulk of infrastructure issues appear to have been addressed. These issues are:

- Stormwater management
- Water Supply
- Waste Water Management for Wye River/Separation Creek
- Neighbourhood Character
- Heritage

The Structure Plan also:

- Acknowledges and incorporates detail of the updated Foreshore Masterplan for Wye River/Separation Creek,
- Develops a Foreshore Plan for Kennett River,
- Identifies pedestrian access points and routes to provide direction for further traffic engineering work and
- Provides a direction for fire management.

4

Themes

4.1

Landscape & Settlement Character

Landscape Setting

Existing Conditions

The hamlets of Separation Creek, Wye River and Kennett River are nestled between the foothills of the Otway Ranges and the coast, in a landscape that is nationally significant. Apart from this significance, Wye River and Separation Creek are home to the threatened species of the Rufous Bristlebird and the Australian mudfish.

The *Skenes Creek, Kennett River, Wye River and Separation Creek Neighbourhood Character Study 2005* (Planisphere 2005) (the NCS) describes Kennett River as a hamlet that:

“nestles into the vegetated ridges and hill slopes that form the Kennett River Valley. In the flatter areas of the town established native vegetation around houses, the River, and wetlands provide natural links to the adjoining heavily vegetated hill faces. Bushy ridgelines surround the town and development in prominent locations and slopes is hidden from view”.

The NCS describes Wye River and Separation Creek hamlets as places that:

“form a loosely defined residential settlement at the base of the Otway hills. The watercourses dividing the residential areas are key focal points and retain indigenous vegetation which is reflected in private gardens and streetscapes. The forested hillsides and coast are important and visible features throughout the settlements. Housing on the steeper slopes is set into the landscape and is largely hidden from view from the Great Ocean Road.”

The Great Ocean Road Region Landscape Assessment Study (Planisphere 2003) (the GORRLAS) which is further described in the next section, describes the landscape of the wider ‘precinct’ hamlets as follows:

“... contains large areas of dense forest cover in hilly terrain, extending to the sea in places. The vegetation changes from wet to dry in response to changes in the orientation and type of terrain, which ranges from steep and rocky to smoothly rounded hills. Dry coastal sclerophyll forests occur on south west facing slopes, some of which meet the coastline... much of the drive from Lorne to Apollo Bay is lined with relatively low coastal vegetation. Here the road clings to the face of rocky promontories and snakes past steep gullies, offering a constantly changing prospect of sea, sky and coastal scenery...”

The GORRLAS notes that while the Otway forests and coast landscape is an important part of the region’s landscape character, particular parts have greater significance. Notably:

“... the Great Ocean Road hugs the coastline from Lorne to Kennett River, offering some of the most dramatic cliff and ocean scenery able to be viewed from a car or bus anywhere in the world and is a landscape of national significance...”

The GORRLAS states that the outlook from the Great Ocean Road should remain dominated by views of the natural landscape. This is reflected in the following ‘landscape objectives’ that were prepared for the precinct:

- *“To protect the indigenous vegetation and sense of openness and exposure that characterises the coastal areas of the precinct.*
- *To retain an outlook dominated by vegetation from the Great Ocean Road and other main road corridors throughout the precinct.*
- *To retain the dominance of an indigenous natural landscape in coastal areas, between townships, particularly from the Great Ocean Road.*

- *To ensure that development located outside townships is integrated with the landscape.”*

These objectives are reflected in public policy where the State Planning Policy Framework objective is to avoid lineal urban sprawl along the coastal edge and retain non-urban uses between settlements.

The findings of the NCS and parts of the Great Ocean Road Region Strategy (GORRS), specifically Initiative 2.1.2 have been implemented through Planning Scheme Amendment C22. The amendment introduced a suite of planning controls which restrict development in the hamlets to preserve and improve the neighbourhood and landscape character. It introduced a Significant Landscape Overlay (SLO) which requires a permit for removal of trees over a certain circumference. It also introduced a Neighbourhood Character Overlay (NCO) that sets new standards for the single house and unit development controls of the Planning Scheme for:

- Street setback
- Building height
- Site coverage
- Significant trees / Landscaping (including total hard surface coverage)
- Side and rear setbacks
- Walls on boundaries
- Design detail
- Front fence height

Finally the amendment introduced a Design and Development Overlay (DDO) that sets minimum lot sizes for subdivision.

The natural landscape described above dominates the area between Wye River and Kennett River. The distance between these two hamlets ensures that there is a break that is dominated by the natural landscape. There is a clear sense of leaving each of the hamlets as the Great Ocean Road twists around the coast.

The green break between Separation Creek and Wye River is more subtle. Though the hamlets are very close together, there is still a sense of leaving one and arriving at the other, particularly from the Great Ocean Road. This is due to the heavily vegetated topography rising steeply from the road after leaving Separation Creek, with dwellings located at the periphery of Wye River (fronting Iluka Avenue) not being visible.

Future Direction

With the exception of the Low Density Residential Zone at Separation Creek, the existing zoning and land ownership pattern of the three hamlets protects the broader landscape setting. The extent of public land between Kennett River and Wye River/Separation Creek protects this break between the settlements.

The Neighbourhood Character and Significant Landscape Overlays have been introduced or strengthened to lessen the impact of re-development in the Township zoned land.

The Rural Conservation zoned land surrounding and to the south of Wye River has limited development potential due to the objectives and requirements of these zones and the Particular Provisions of the Planning Scheme.

Low Density Residential Zone

The Low Density Residential Zoned (LDRZ) land north of Separation Creek is not covered by the SLO, NCO or DDO. The Council has granted planning permits to allow a four lot subdivision of the eastern portion of this land and a three lot subdivision of the western portion of this land. While these subdivisions have not occurred to date, they provide an indication of the limited development potential of this Low Density Residential zoned land. The Council's decisions on these subdivision

proposals set a 'planning context' that indicates that while some subdivision may be possible, the environmental and topographical constraints of this land can only support a limited degree of development.

Given that these subdivisions have not occurred, it is possible that a land owner may seek a permit for a greater number of lots in the future. This would not meet the future direction outlined in this Structure Plan..

This limited degree of subdivision would support the landscape character objectives of the Structure Plan and allow the landscaped setting of Separation Creek to be retained.

In this light a strengthening of the planning controls to restrict development of this area is recommended. It is recommended that a Development Plan Overlay requiring subdivision in accordance with the permitted subdivision plans be introduced to ensure a restricted extent of subdivision for land in this zone.

Impact on the Structure Plans

The landscape setting of these hamlets is perhaps their most significant element. The context of sea, river and vegetated hillsides is what characterises these hamlets and defines what they are. This significance is embedded in the original level of development, has been acknowledged in planning policy and is embedded in planning scheme controls.

The impact on the Structure Plans thus is to restrict the hamlets' growth so that its setting is retained. Further discussion of settlement boundaries is found in the following section.

Objectives

Continue to protect and maintain the landscape setting of the three hamlets

Strategies

- Maintain the existing Township zone boundary.
- Ensure that development in the Rural Conservation Zone complies with the policy context of the Colac Otway Planning Scheme and the objectives and requirements of that zone.
- Restrict development on the Low Density Residential Zone north of Separation Creek by introducing a Development Plan Overlay based on the approved three and four lot subdivision plans.

Settlement Character

Existing Conditions

The GORRLAS describes Wye River as:

"... a small settlement at the base of the Otway hills and adjacent to the coastline. The commercial (area) is low key and blends in with the residential character. The narrow river that cuts through, and its bay, provides a stronger definition of the town centre. Housing is mostly simple shacks from the 50s to more recent times; they are nestled into the hills and sometimes exposed by often concealed by the tree canopy which is eucalypt woodland with some healthy scrub. The beach is only small, with rocky points at either end defining the edge of the settlement."

And Kennett River:

"... is located in a valley that falls to a small rocky beach and is largely cleared of trees and understorey. Housing is sprawled across the settlement; the simple weatherboard shack forms ranging in style from the 50s to present day. The township is surrounded by well treed hills, with houses at the edges seeming to feather into their environment."

The Neighbourhood Character Overlay reinforces the elements of the character described above. It also confirms a 'status quo' future for the hamlets. It describes the existing and preferred character as generally as one where:

“buildings (are) nestled within the often steep topography and the indigenous and native vegetation. The buildings sit below the tree canopy height, and there is sufficient space around them to accommodate substantial vegetation as well as clearances required for wildfire management. The buildings are of varying low scale designs but contain elements that respond to the coastal location including a predominance of non-masonry materials, metal roofing, balconies and transparent balustrades...”

The NCS described Precincts of the three hamlets in greater detail. These are described below:

Wye River

Precinct 1 is situated on the ridgeline between the Wye River and the Separation Creek. This area consists of dwellings constructed since the 1970s. The terrain is heavily vegetated and steep to very steep and dwelling styles have responded by using pole or elevated column construction. Views are to the ocean or surrounding ridgelines yet are heavily filtered by vegetation. Roads are commonly unsealed.

Precinct 2 is closer to the river. It is an older area with houses from the 1950s. Dwellings are visible through the vegetation on the steep land to the south of the river while, to the north of the river, there are fewer canopy trees on the township lots. The roads are commonly sealed.

Separation Creek

The hamlet sits beneath vegetated hillsides around the Creek. The housing is generally from the 1950s onwards and, generally speaking, is on lots that are smaller than at Wye River. The topography is rolling to steep and there are views to both the ocean and the surrounding hillsides. Roads are generally sealed.

Kennett River

Precinct 1 is a small residential area on a ridge to the north of the river where most houses are single storey yet elevated on poles due to the sloping land. The precinct is heavily vegetated however some lots have views to the coast.

Precinct 2 is to the south of the river with housing stock from the 1950s to 1970s with the exception of some areas that have been recently subdivided. There are recent dwellings on the cleared, flatter land in the middle of the hamlet. Some views to the hillsides and coast are available.

Public land in the Hamlets

The centre of Wye River and Kennett River with the general store, car park and caravan park is characterised by a cleared grassy floodplain adjacent to a narrow estuary with an informal low density rural character. Separation Creek has a narrow partially cleared corridor following the creek with a similar character. The waterways and estuaries act as landscape edges dividing the settlements and providing a contrast to the steep enclosed slopes comprising the remainder of the hamlets. The hill slopes form an amphitheatre around this area and long ocean views are possible across the foreshore.

The foreshores of the hamlets are comprised of a thin strip of land between the Great Ocean Road and the beach with sand dunes and low coastal vegetation. The dunes are occasionally broken by gravel car parks and narrow informal pathways through to the beach. Toward the centre of the hamlets the foreshore is cleared in patches with facilities such as public toilets / change rooms and picnic tables.

Future Direction

The Neighbourhood Character Overlay sets the direction for the future built form of the hamlets. This is to retain the existing character as much as possible while recognising that re-development will occur. The waste water and water supply solutions described later in this report suggest that development will still be constrained due to the need for on-site waste water systems and rainwater tanks for water supply. Such constraints are in keeping with the Neighbourhood Character objectives and with the general objectives for the hamlets.

Redevelopment of lots will continue constantly over the next 20 years and, as a result, the appearance of the hamlets will alter. Notwithstanding this, the Neighbourhood Character Overlay and other elements of these Structure Plans will mean that the character of the hamlets, i.e. small settlements in heavily vegetated settings, will be dominant.

There is a need for a more diverse range of accommodation options due to the changing demands of the housing and tourism market. Such accommodation can be located on the flatter land near the rivers and near the commercial and community facilities. Holiday unit developments of a modest scale, in keeping with the Neighbourhood Character controls are envisaged in these areas. This would have the least impact on the landscape setting of the hamlets and on the local road network.

Such development would impact on the built form due to this central location. Any permanent development would need to comply with the Neighbourhood Character Overlay and broader objectives for the hamlets. It would demonstrate high architectural and environmental quality due to the prominence of this locality.

It may be possible to improve the appearance of the flatter areas of Separation Creek and Kennett River by undergrounding power and telephone lines in these areas. This will need careful investigation to ensure there is no environmental damage caused by trenching. Undergrounding of power and telephone lines is not appropriate in the steeper land in the hamlets due to the potential for erosion and scouring.

Impact on the Structure Plans

Redevelopment of the housing stock of the hamlets as envisaged by the policies of the Neighbourhood Character Study and other relevant planning scheme controls will enhance the outcomes of the Structure Plan. These controls will result in more site responsive designs with a higher level of vegetation retention. It is likely that the population will grow marginally as some part time residents relocate after retirement however the majority of the housing stock would continue to be for part time residents (holiday homes). The hamlets will continue as small settlements with only a few basic urban amenities.

The provision of more diverse accommodation, including for tourists would need to respect these characteristics. The preferred location close to the rivers and commercial and community facilities would make this accommodation visible and apparent, if it were to be used for tourist accommodation.. The challenge is to design this accommodation so that it respects and enhances its context.

The choice of these central locations is made as the likely impacts are considered to be less significant than more intensive development on the heavily vegetated hillsides. This extends beyond the appearance of the buildings as access to sites and distance to commercial and community facilities are also important considerations.

Objectives

Ensure that the redevelopment of housing lots respects and is in keeping with the character of the three hamlets.

Ensure that any additional tourist accommodation respects the existing and preferred character and the context of the central location that is proposed.

Strategies

- Apply the Planning Scheme Municipal Strategic Statement and Overlay provisions relating to Neighbourhood Character and Significant Landscapes when assessing applications for new dwellings or extension to existing dwellings.
- Apply a Development Plan Overlay to the Low Density Residential Zone at Separation Creek.
- Investigate undergrounding power and telephone lines in flatter areas of Separation Creek and Kennett River however ensure that there is no environmental damage caused by trenching.

4.2. The Size of Settlements (Settlement Boundaries)

Existing Situation

Land Supply and Demand

The Great Ocean Road Region of Colac Otway Shire, which includes Kennett River, Wye River and Separation Creek, has a strong projected population growth of 2.59 per cent (Colac Otway Shire 2006a, p.11). This growth and associated development is anticipated to occur in other settlements in the Great Ocean Road region, particularly Apollo Bay, in accordance with the Great Ocean Road Region Strategy.

There is growth and building activity in the hamlets with 2.6 new dwellings per year in Kennett River; and 8.2 new dwellings per year in Wye River/Separation Creek (Colac Otway 2006a, p.11). The rate of new dwelling construction in Wye River/Separation Creek has reduced to 4 per annum in the last three years.

There is some developable land remaining either as vacant allotments or through subdivision. The NCS audited within the Township Zone to identify the additional lots that could be subdivided based on the recommended lot sizes, as detailed on the table below:

TOWNSHIP	NUMBER OF VACANT LOTS
Kennett River	19
Wye River	56
Separation Creek	10

(Planisphere 2005)

State Planning Policy Framework

State Government policy, as set out in Clause 15.08 Coastal Areas within the State Planning Policy Framework of all Victorian Planning Schemes, states that planning for coastal areas should:

- *Encourage urban renewal and redevelopment opportunities within existing settlements to reduce the demand for urban sprawl.*
- *Avoid linear urban sprawl along the coastal edge and ribbon development within rural landscapes and preserve areas between settlements for non-urban use.*
- *Protect identified visually significant landscapes, views and vistas in coastal areas.*
- *Protect non-urban areas for their visual landscape, environmental, agricultural and recreational qualities.*
- *Retain the existing subdivision patterns and non-urban uses between settlements.*
- *Identify and avoid development in areas susceptible to flooding (both river and coastal inundation), landslip, erosion, coastal acid sulfate soils, wildfire or geotechnical risk.*
- *Avoid development within the primary sand dunes and in low lying coastal areas.*
- *Avoid disturbance of coastal acid sulfate soils.*

This is also further reiterated in the DSE VPP Practice Note *Implementing a Coastal Settlement Boundary*, October 2006.

Victorian Coastal Strategy

The State Government *Victorian Coastal Strategy* provides a vision for the use and development of the Victorian coast. The Strategy provides a hierarchy of principles for coastal planning and management:

1. *provide for the protection of significant environmental features;*
2. *ensure the sustainable use of natural coastal resources;*
3. *undertake integrated planning and provide direction for the future; and*
4. *when the above principles have been met, facilitate suitable development on the coast within existing modified and resilient environments where the demand for services is evident and requires management.* (State Government of Victoria & the Victorian Coastal Council, 2002, p.20)

Great Ocean Road Region Strategy (GORRS)

The GORRS is a “20 year land use and transport plan for managing growth and change across the Great Ocean Road Region” (DSE 2003, p.1).

The Strategy outlines a regional settlement framework to manage and direct the pressure for growth in the region. Direction 2 (Settlement) of the strategy manages the growth of settlements across the region. The strategy states that Torquay and Warrnambool have capacity for further growth and the strategy seeks to strengthen their role as services centres. The strategy states that Apollo Bay is “*the only other coastal settlement with capacity for growth beyond its current boundaries*” (DSE 2003, p.27). The strategy continues stating that “*the outward growth of other coastal towns will be managed by setting clear town boundaries, within which residential development will occur on suitable zoned land*” (DSE 2003, p.27).

Great Ocean Road Region Landscape Assessment Study (GORRLAS)

The GORRLAS was prepared as part of the overall GORRS. The aim of the study was to assess landscape character and significance in the region and develop guidelines to manage development.

The assessment identified the landscapes of the hamlets and their surrounding hinterland as being of National Significance (Planisphere 2003). The assessment sets the future directions for the precinct and landscape objectives to achieve these directions. The directions and objectives include focussing development within existing hamlets, protecting indigenous vegetation and dense tree cover, minimising the visual impact of infrastructure particularly in coastal areas, hill faces and ridges and defining the edge of hamlets (Planisphere 2003, Precinct 4.1 pp.3-4).

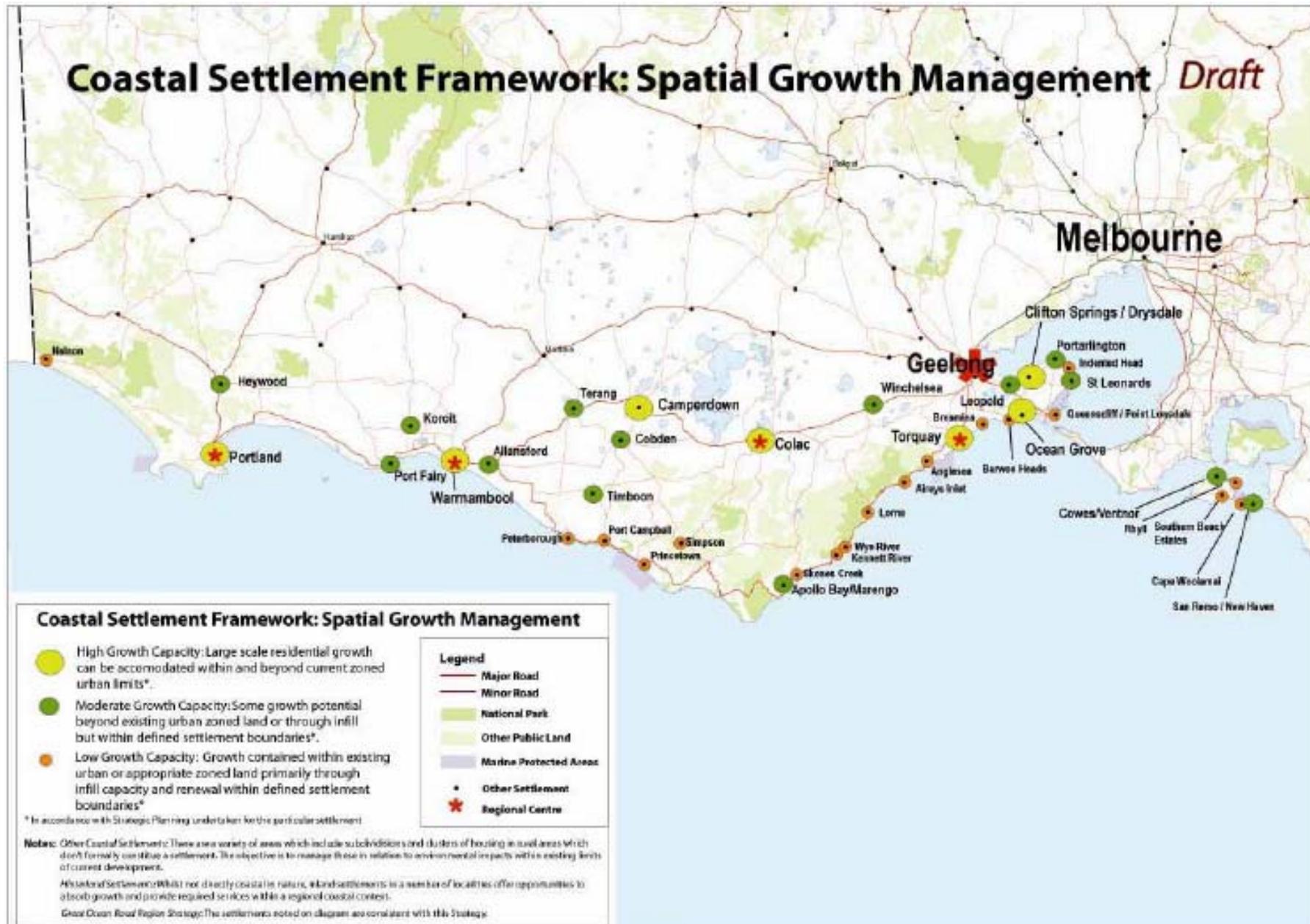
Coastal Spaces Initiative

The *Coastal Spaces Initiative* was developed to help local governments implement the *Victorian Coastal Strategy* and manage development pressures in coastal towns beyond metropolitan Melbourne.

As described in the previous section the GORRS outlines a regional settlement framework to manage and direct the pressure for growth in the region. The Coastal Spaces initiative responds to this by developing a Coastal Settlements Framework which outlines the role and function of each settlement. The Framework reinforces the concept of consolidating development in existing settlements to improve efficiently use the land, services and infrastructure (DSE 2006, p.11). The map below shows where growth is to be directed in the region. It is noted that Wye River/Separation Creek and Kennett River are defined as having “Low Growth Capacity” with “Growth contained within existing urban or appropriately zoned land primarily through infill capacity within defined settlement boundaries”.

This Framework has been included in the 2007 draft *Victorian Coastal Strategy*.

Map 5: Coastal Settlement Framework Map



Future Direction

The future direction is one of low growth contained within the existing Township Zoned land and greater restriction of development in the Low Density Residential Zone at Separation Creek. There will be no expansion of the land area occupied by the hamlets. Growth will take place by means of infill development in existing vacant land and subdivision in the Township zones in accordance with the provisions of the Colac Otway Planning Scheme.

The current rates of 2.6 and 4 new dwellings per year in Kennett River and Wye River/Separation Creek respectively suggests that there is adequate land supply for a low level of growth over the next 10 years. The State Planning Policy Framework encourages higher growth at Apollo Bay thus the bulk of additional development pressure is directed towards that town.

The recommended Development Plan Overlay on the Low Density Residential Zone land would result in a limited amount of development (7 lots). There would be no need to change the settlement boundary to accommodate this zone given the non-urban nature of the proposed development.

Impact on the Structure Plans

The strong strategic direction for low growth in the hamlets indicates that the Structure Plans need to contain the hamlets rather than allow for expansion. Growth can still occur through infill development including the options outlined in the previous section.

Each hamlet will continue to have very small residential populations notwithstanding the trend towards part time and permanent occupation of holiday houses by retirees. This will limit the range of commercial and community services that are sustainable as neither commercial operators nor the Council could justify providing a broad range of services to a small and intermittent population.

It will justify limits on the extent of commercial and community facilities proposed for the hamlets. The existing limited range of facilities of the Surf Life Saving Clubs, the foreshore facilities and recreational land, the river estuaries, the hotel and the General Store are considered to be the full extent of public/community facilities.

Accordingly, improvements in the hamlets will be limited to measures that enhance these facilities. These would include better access such as formalised or improved walking paths and car parking areas and incremental improvement such as upgrades and renovations to existing buildings. These improvements are discussed in more detail in the sections on Business, Tourism, Community and Recreation.

As a result, the Council will need to ensure that all parts of the community retain access to services. This may be in the form of improved transport to larger settlements or the encouragement of mobile services to the hamlets.

Objectives

Contain growth of the hamlets within the existing boundaries.

Strategies

- Contain development within the settlement boundary as defined on the Size of Settlements map.
- Ensure that any development outside the settlement boundary is non-urban in appearance and function and meets the criteria contained in the GORRLAS.
- Encourage any infill development, particularly tourist accommodation, to locate in the flatter, less vegetated areas near the centre of the hamlets (as depicted in map) in preference to steeper more vegetated land.

Further investigation of a small scale open space / recreation, non-urban form tourist accommodation and small scale residential development west of the Wye River

Background

At the conclusion of this second round of consultation, a site inspection was undertaken by Council officers and representatives of the owner of land immediately west of the Wye River. The outcome of this inspection was a recommendation to Council to identify a Further Investigation Area for the purpose of a mix of open space / recreation, non-urban form tourism accommodation and small scale residential development on land adjacent to the western boundary of the Caravan Park. The implementation of this recommendation would require the rezoning of Rural Conservation zoned land.

This Further Investigation Area would be subject to further, detailed planning and consultation to investigate what is possible. This recommendation responds directly to some concerns raised during the Public Exhibition period that the draft Structure Plans report did not promote any additional public open space in Wye River/Separation Creek.

Process

This recommendation was finalised late in the Structure Plan process after considering submissions made by the community and responding directly to issues raised by the community. Due to the sensitive nature of the site and concern expressed by parts of the community about any development on the site, the Structure Plan does not recommend that the proposal occur, but recommends that it be subject of further investigation and detailed community consultation. In order to facilitate this, the following Objectives and Strategies have been drafted to:

- a) Advise of the existence of the modified proposal
- b) Set a context for assessment of the modified proposal.

This does not indicate support for the modified proposal nor change the content of the Structure Plans report.

Objective

Facilitate a process to consider a mix of open space / recreation, non-urban form tourist accommodation and small scale residential development on land on the southern side and to the west of the riverside Caravan Park.

Strategies

Ensure that any residential development on land immediately to the south of the riverside Caravan Park meets the following criteria:

Any proposal for subdivision and development of this site should:

- Have minimal visual impact on the landscape by requiring that any new development:
 - Is located at the bottom of the escarpment or as close as is practicable to the bottom of the escarpment and is not visible from the Great Ocean Road.
 - Reflects the slope of the site, to ensure the built form is recessive in the landscape context.
 - Sites buildings with existing or re-established vegetation and utilises informal new landscaping to screen the development, while highlighting the topographic features of the site.
 - Uses modest, low profile building forms.
 - Minimises the impacts of features such as fences, property boundaries and driveways
 - Uses muted, coastal recessive tones and colours and non reflective materials to assist in blending the development into the landscape

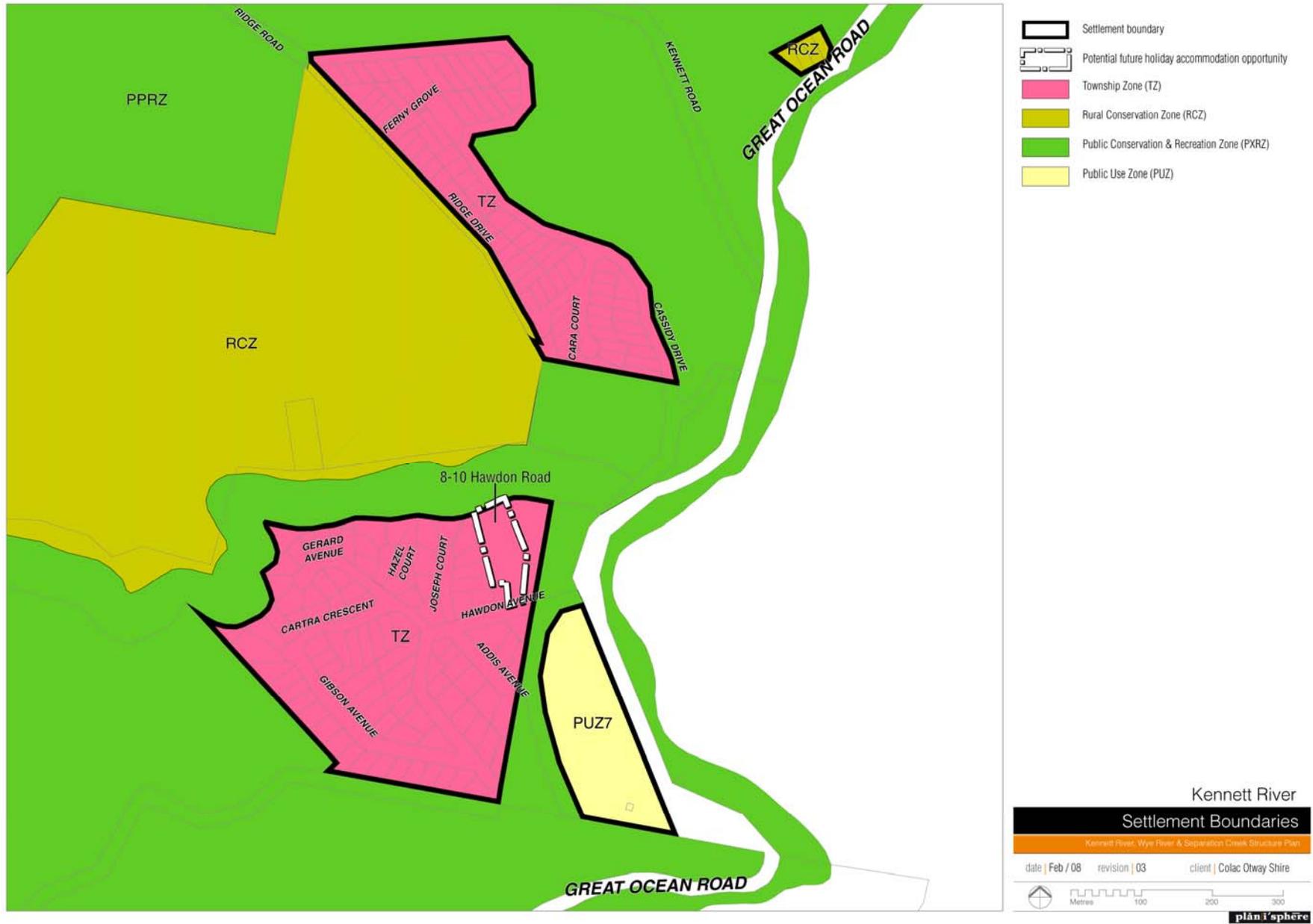
context.

- Avoids the use of solid fencing, particularly for property boundaries.
- Encourages indigenous vegetation in naturalistic planting patterns.
- Ensures that substantial revegetation with indigenous vegetation appropriate to the site takes place prior to the construction of dwellings (and is protected throughout the construction period) to ensure effective screening of the development from views from an early stage.
- Avoids the planting of non-indigenous vegetation, particularly where this would be visible from the viewing points outlined above.
- Avoids cut and fill/excavation and minimizes level changes (/building platforms).

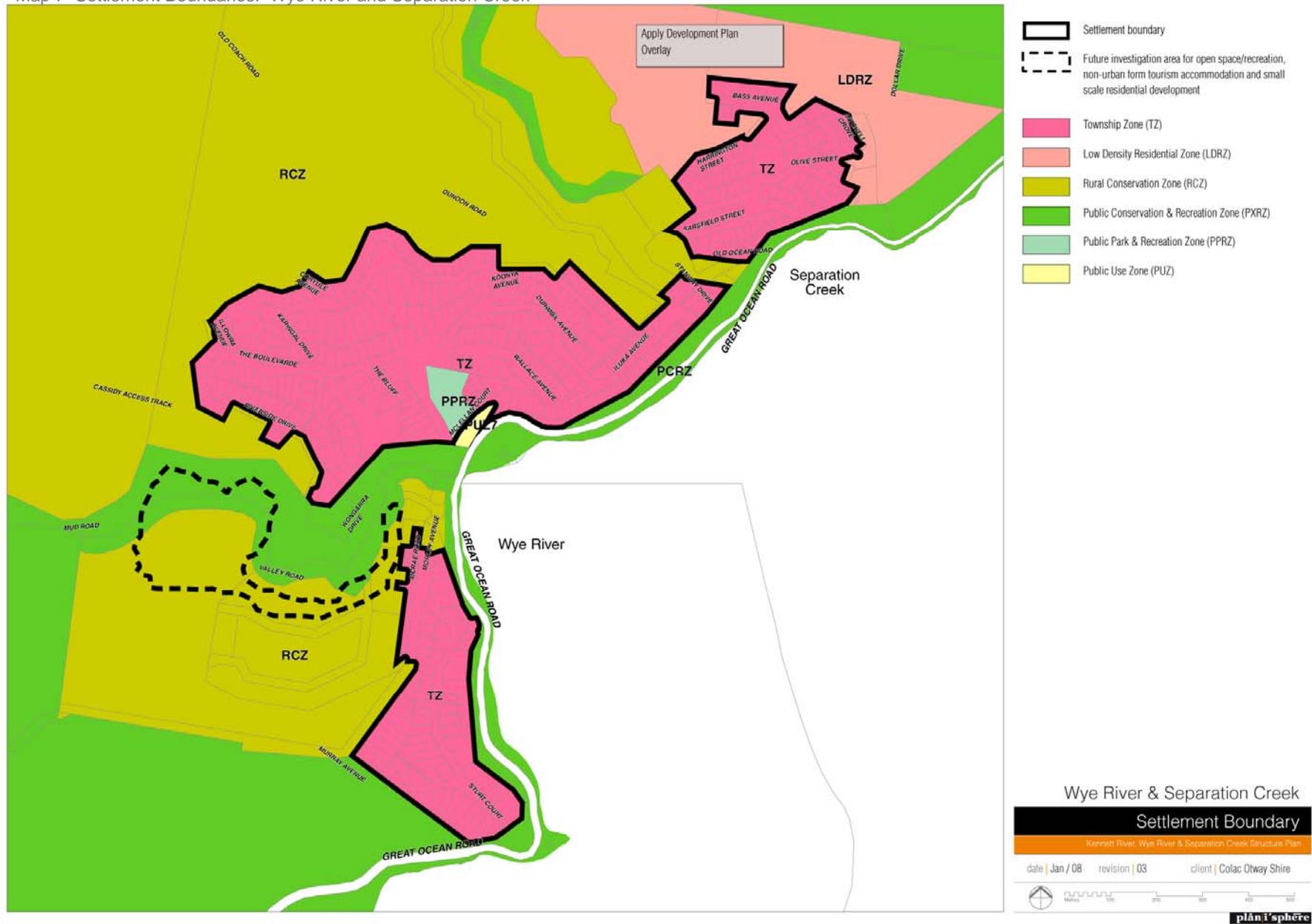
Demonstrate that the subdivision:

- Will provide a significant public open space at the time the subdivision commences.
- Will provide natural environmental benefits to the Wye River area.
- Will not impose additional infrastructure and service requirements, particularly for water supply and effluent disposal (i.e. will be self-sustaining and/or incorporate high levels of best practice sustainable development in the design and operation of the facilities).
- Will provide adequate traffic management solutions for the entry to the riverside Caravan Park and for access to and from the Great Ocean Road.
- Will integrate with adjoining land uses, and not cause detriment to the operation of legitimate uses of that land.

Map 6 Settlement Boundaries: Kennett River



Map 7 Settlement Boundaries: Wye River and Separation Creek



4.3

Environment**Introduction**

The existing level of residential and commercial development has led to degraded water quality in the hamlets. The problems of stormwater management and effluent disposal are exacerbated by the unique and sensitive climatic and geological conditions and the quality of the existing infrastructure.

The issues related to water are substantial and are intrinsically interrelated. Existing septic systems on small lots or on steep land have limited life spans and, on some lots are nearing or are past the end of their effective life. Grey water and effluent in these systems is not being properly treated and is infiltrating surface water, drainage lines, the creeks and rivers.

Informal stormwater management, where rainwater and water discharging from roofs, driveways and other impervious surfaces sheet flows across roads and private property, exacerbates the problem of poorly functioning septic systems. These sheet flows of rainwater infiltrate septic absorption lines and transport the semi treated waste water downstream and into the drainage lines and creeks.

The steep terrain further contributes to this adverse impact as it restricts opportunities for waste water to be treated and for surface waters to be contained on site. Consequently, water concentrates into narrow drainage lines and gullies and moves rapidly into the rivers.

A further significant contributing factor is that the population increases exponentially during vacations and particularly over the summer. The strain on water resources at these times is particularly damaging as the peak population stretches the capacity of waste water systems at the same time as people are swimming and recreating in the rivers and ocean.

Residents and commercial operators in the hamlets have acted to lessen the impacts of these issues. The use of rainwater as the main water supply lessens the extent of runoff firstly by capturing rainwater and secondly by minimising the extent of grey water from household use. Extensive retention of vegetation or re-vegetation of land also lessens the impact of sheet water flows and contributes to onsite absorption of water.

Notwithstanding this, the issues relating to water quality have become so challenging that, at peak season, the impacts have resulted in contamination and the placement of warning signs at the Wye River estuary.

These issues were at the top of the list in initial community consultations held as part of this Structure Plan process. The interplay of all the water elements – waste water, stormwater and water supply – is succinctly summarised in comments from the consultation process. In short, there are real concerns about providing water to the hamlets due to the increase in run off that would occur and concerns about bringing sewer due to its potential to ‘unlock’ greater development potential on individual lots.

They have also been significant to the Council for a number of years. Numerous studies on waste water and storm water have been commissioned by the Council and, in 2006/07, funds were procured from the Victorian Government’s Country Towns Water and Sewerage Supply Program. These funds will support a sewerage solution for Wye River and Separation Creek however have not extended to fund a similar solution for Kennett River. The long term sustainability of Kennett River depends on a sewerage solution thus continued advocacy is required to ensure funding for this as soon as possible.

The presence of threatened species of fauna, such as the Rufous Bristlebird, is also an issue of environmental importance. Such species are protected under the Commonwealth *Flora and Fauna Guarantee Act 1988*. The existing planning controls complement this Act and no additional protection is required under the Structure Plan.

The matters outlined above and the ramifications for the Structure Plans are discussed below in greater detail.

Effluent Disposal

Existing Situation

In the *Coastal Community Revitalisation Project* by Dahlhaus & Miner (2003), it was found that water quality in Wye River, Separation Creek and Kennett River exceeded the EPA's State Environment Protection Policies (SEPP) on nutrient objectives for waters and rivers in the Otway Region, and for marine and estuarine ecosystem protection for estuaries and inlets (Dahlhaus & Miner 2003, p.86). These limits are regarded as the upper threshold prior to ecological impact, such as the increased primary productivity of plants, increased risk of algal blooms and subsequent potential for eutrophication within the stream environment (Dahlhaus & Miner 2003, p.86). These levels are regarded as the upper nutrient levels to maintain a healthy ecology and protect human and faunal values.

The testing also showed that E.Coli levels in the Wye River are above the EPA limits (Dahlhaus & Miner 2003, p.86).

In addition, soils saturated with septic effluent have the potential to contaminate groundwater. Thin soils and steep slopes result in flows with the potential to carry pollution from septic and wastewater discharge systems to surface water flows and streams.

Recommendations from this report included:

- *Restraining any further subdivision until the wastewater management strategies are developed, and*
- *Finalising the wastewater management strategy as rapidly as possible and, in the interim, providing best practice advice on new developments.*

This report was preceded by the *Wastewater Management Strategy* (Colac Otway Shire 2002) which included Issues Papers on Wye River and Separation Creek and on Kennett River. The findings from these Issues Papers included:

- *There is wide variety of waste water disposal systems of different ages that operate at varying levels of effectiveness*
- *Most systems, using effluent trench disposal, will have reached their life expectancy within the next 10 years*
- *Future development and re-development will be limited, even stopped on 96% of blocks*
- *Offensive conditions exist, such as odour, potential mosquito breeding areas, and the ponding of sullage and effluent.*

Future Direction

No solution has been proposed for Kennett River. This needs to be addressed as a priority. It is recommended that opportunities to investigate and construct an appropriate waste water treatment system are pursued as soon as possible.

A conventional sewerage system is not proposed for Wye River due to the nature of the terrain. The proposed solution for Wye River/Separation Creek was devised by Hyder Consulting in consultation with the community in the *Wye River, Separation Creek, Kennett River Concept Design Final Report* (April 2007). This report proposes that properties that cannot effectively treat and dispose of their waste water on site upgrade their on site systems then pump the partially treated effluent to a decentralised treatment plant. This plant would be located on an area of land immediately adjacent to the Further Investigation Area approximately 1 km inland. This land would need to be publicly acquired and the plant would be owned and managed by Barwon Water. Property owners would pay charges to Barwon Water. This plant would not be operational until 2012.

Impact on the Structure Plans

It is likely that Kennett River is unsustainable in the long term unless better measures are taken to manage waste water. It is recommended that no additional land is

released for development and it is possible that development or redevelopment of existing lots is highly constrained by waste water management requirements.

The impacts of proposed waste water solution at Wye River are as follows:

- community use of the river for swimming and water harvesting will not be restricted by potential contamination and public health risks
- the amenity impact of saturated effluent trenches in backyards or on other parts of private properties will be diminished, making these spaces more usable for typical 'back yard' activities
- lots will be able to be redeveloped without being impractically constrained by waste water management requirements
- additional development would be practically feasible however this is limited by planning policy requirements
- there would be some 'formalisation' of the hamlet in that low lying, weedy, boggy patches on public and private land would be less frequent. In other words, the lines of flowering weeds that might denote a minor drainage line will, most likely, disappear or be diminished as waste water management improves. At times and for some people, this random neglect of land can convey a sense of being away from the 'hustle and bustle of the city'. However, these types of perceptions are changing, as people become more aware of environmental issues. In the Wye River community, there already is a strong understanding of the origins of such random neglect.

Objectives

Ensure that waste water from existing and proposed development is effectively managed so that no undue environmental effects occur.

Strategies

- Implement the Wye River and Separation Creek wastewater system as proposed by Hyder Consulting in the *Wye River, Separation Creek, Kennett River Concept Design Final Report* (Hyder Consulting 2007)
- Advocate for funding for improved effluent management at Kennett River
- Provide adequate effluent management at Kennett River
- Encourage parties that extract river water, such as the campgrounds to adopting water efficiency measures, maximising collection of rainwater on site, installing storage of 'winterfill' and introducing water reduction measures such as using treated waste water for toilet flushing.

Water Supply

Existing Situation

At present all water is supplied by private rainwater tanks with some river extraction. Community consultation has shown that there is support for this to remain the single source of water as this strategy complements the need to reduce wastewater and increase the efficiency of water use.

This form of supply has generally proved adequate except over the summer of 2005/6 where water shortages were resolved by tanking non-potable water (water that is unsafe or unpalatable to drink due to potential contaminants) from local rivers and other sources. Non-potable water is drawn from the river for the hotel, both caravan parks and the shop at Wye River and for the Caravan Park at Kennett River.

The sustainability of private water tanks is discussed in the Hyder report where it is concluded that a typical dwelling with an appropriately sized rainwater tank would provide more than enough water for houses used on a part time basis or for holiday rental. Houses that are permanently occupied or rented for much of the year may require a supplementary water source.

The sustainability of extracting water from the rivers in times of climate change is discussed in the Hyder report. It concludes that the drying up of the Wye and Kennett Rivers that occurred for a few days in the summer of 2005/6 may be representative of future conditions.

Future Direction

It is proposed to retain and enhance the status quo regarding water supply. A conventional water supply system is not proposed due to the impact this would have on the steep terrain and the distance to a reservoir or similar source. Rain water tanks would remain the primary source of water supply. Options for enhancing this supply are to correctly size water tanks to roof area and, for commercial properties, to introduce winterfill storage to lessen the demand on river extraction. The commercial operators who draw water from the rivers can be encouraged to reduce their dependence on the river by better use of existing water supply.

Impact on the Structure Plans

It is likely that this decision on water supply will have the greatest bearing of all factors on the nature of the hamlets over the next 20 years. This is a strategic decision to ensure the policy direction of ecologically sustainable, low growth is achieved.

The retention of the status quo regarding water supply reinforces that the hamlets will continue as a places where the majority of houses are used on a part time basis or for holiday rental. Restricted water supply reinforces the limited appeal of the hamlets for permanent residents thus it is fair to say that services and infrastructure will reflect the hamlets' 'holiday home' nature.

Limitations on water supply also restrict the scale of tourist accommodation facilities and unit development to what can be sustained with on-site water supply. Modest levels of development that are self sustaining in terms of water supply are anticipated.

The trend towards greater numbers of permanent residents is recognised however this does not change the future direction. These residents would need to take the appropriate measures to maximise their water supply and the supplement this supply from external sources if necessary.

Objectives

Ensure that individual landowners remain responsible for their own water supply

Strategies

- Undertake an education program to improve potable water security and reduce quality risks for property owners based on the DHS publication – *Your Private Drinking Water Supply 2006*.

Stormwater Management

Existing Conditions

The existing stormwater systems have largely developed in an ad hoc manner with all stormwater that is not captured in rainwater tanks running in an uncontrolled fashion in table drains on roadsides, across roads and across private property.

This informal arrangement has led to the roads being damaged, the table drains being scoured out and unwelcome sheet flows of water across private land from neighbouring properties. This situation is exacerbated by the steep terrain which, in turn, exacerbates existing waste water problems by sheeting stormwater across effluent absorption fields.

The constructed wetland in Kennett River is an exception to this and plays an important role in stormwater management by acting as a biofiltration system.

The Council commissioned the *Three Towns Stormwater Management Strategy* (GHD 2004) to consider and address these problems. The report recommended that a less intrusive approach be taken given the particular geological, climatic and environmental setting of the hamlets. The key functions of this strategy were:

- *Minimisation of run off saturating soils on steep slopes*
- *Control of nuisance flows over private and public land*
- *Protection of roads and drains*
- *Separation of runoff and waste water*
- *Limiting pollutants entering drainage lines and rivers.*

The recommendations include that:

- *Soil disturbance and vegetation removal are minimised*
- *The existing pipe and pit system be extended where possible and that, otherwise stormwater from private property will be directed to a roadside table drain or low flow pipes.*
- *Roads will be properly graded to direct water to the roadside drains*
- *Road drainage will be contained within road reserves or, in the case of cross falls, be directed through private property via easements*
Development and obstructions will be removed and easements established over natural drainage lines, including those on private property
- *Sediment traps and dissipation systems are provided at discharge points and, where possible, that stormwater passes through wetlands before being released into rivers.*

The recently introduced Neighbourhood Character Overlay will contribute to the retention of vegetation in that the site coverage standard has been reduced from 60% to 25%.

The other measures are intended to occur incrementally. Ten priority works packages have been identified by the Council and are currently underway. The placing of easements over private land requires considerable consultation with the owners of the affected land and can take some time.

The stormwater works packages and maps of drainage lines where easements are required are attached as Appendix 1 to this Report.

Impact on the Structure Plans

The formalisation of stormwater drainage in this steep and sensitive environment will bring substantial amenity and environmental benefits. Better management will result in better water quality and less degradation of roads and table drains. It will also resolve perennial problems of individual landowners who are on the low side of overland flows.

The main impacts are similar to some of the impacts of improved waste water management. These are:

- the adverse impact of overland flow paths in backyards or on other parts of private properties will be diminished,
- lots will be able to be redeveloped without being impractically constrained by storm water management requirements
- additional development would be practically feasible however this is limited by planning policy requirements
- there would be some 'formalisation' in that improvements to the roads and drains would create a more orderly or urbanised appearance.

Objectives

Manage stormwater drainage in the three hamlets, recognising the constraints posed by the unique climatic, geological and environmental setting

Strategies

- Minimise soil disturbance and vegetation removal.
- Extend the existing pipe and pit system where possible and, direct stormwater from private property to a roadside table drain or low flow pipes.
- Properly grade roads to direct water to the roadside drains.
- Contain road drainage within road reserves or, in the case of cross falls, direct road drainage through private property via easements.
- Remove development and obstructions and establish easements over natural drainage lines, including those on private property.
- Provide sediment traps and dissipation systems at discharge points and, where possible, ensure that stormwater passes through wetlands before being released into rivers.
- Maintain the wetland in Kennett River and its role as a biofiltration system and investigate other opportunities to introduce similar systems.
- Encourage water sensitive urban design in new developments.

Wildfire Threat

Existing Situation

The threat of wildfire is a major issue and is covered by the Wildfire Management Overlay (WMO). The heavily vegetated edges of the hamlets directly abut national park with no separation with reduced fuel buffer zone.

In addition the width and grade of the internal road network and provision of water for firefighting are generally not up to the CFA or WMO standards.

The CFA Requirements for *Water Supplies and Access for Subdivisions in Residential 1 and 2 and Township Zones* (2006) states that:

- *'The average grade must be no more than 1 in 7 (14.4%) (8.1 degrees):*
–
- *with a maximum of no more than 1 in 5 (20%) (11.3 degrees) for no more than 50 metres.'*
– This standard is exceeded on a number of roads in the hamlets.

All properties are covered by the Wildfire Management Overlay (WMO). The purpose of the overlay is to reduce the threat to life and property posed by wildfire. The application requirement for buildings and works, and similarly for subdivision requires:

- An accessible water supply with compatible connectors with capacity that provides an appropriate level of protection to assets.
- Access to the property for emergency vehicles, this includes an adequately wide and stable surface with passing bays.
- Design and siting of buildings that minimises fire risk.
- A building protection zone, landscape to reduce fuel load.

At present there are few properties that meet one or any of the above requirements.

Future Direction

Redevelopment of individual sites will result in the requirements of the Country Fire Authority (CFA) and the Wildfire Management Overlay being enforced through planning permit and building permit requirements.

Ongoing community education on fire risk and prevention is necessary given that fire prevention on existing lots is voluntary. The CFA are working with many Victorian communities to better manage fire risk and on-going CFA involvement is necessary.

Impact on the Structure Plans

The management of fire risk must occur within broader objectives for the hamlets. The community's regard for the heavily vegetated setting means that management will need to be through ensuring adequate water supply, establishing fuel modified areas and having personal Bushfire Survival Plans. The impacts on the Structure Plans of such activities will be minimal.

Objectives

Reduce the threat of wildfire while where possible maintaining the vegetated character of the hamlets

Strategies

- Provide information to residents and landowners about CFA publications and educational programs to ensure the community is aware of wildfire risks and methods to reduce risk, including through appropriate management, selection and placement of vegetation and landscaping.
- Finalise the Municipal Fire Prevention Plan.
- Consult with the CFA on low impact modification to the existing road network.
- Ensure that the requirements of the Wildfire Management Overlay are adhered to.

Building in Landslip Prone Areas

Existing Situation

The rocks and soils of the Otway Ranges are highly erodable and prone to landslides, ranking amongst the most hazardous in Australia. Tunnel erosion and landslides are ongoing events in all three hamlets. The problem is greatest in parts of Wye River where the stratum indicates that the area is highly susceptible to larger landslides (Dahlhaus & Miner 2003, p.86). Many of the contributing factors are beyond human control, such as the high rainfall, steep slopes, orientation of strata, weak nature of the rock mass, earthquake activity and coastal and valley erosion. Man made contributions include alterations to slope morphology, alterations to slope hydrology and drainage and loads induced on the slope by structures (Dahlhaus & Miner 2003, p.16).

Future Direction

The Structure Plans seek to reduce the anthropic contribution to landslide risk. This means:

- Reducing and minimising the load induced on slopes by maintaining a low density and scale of built form across the landscape.
- Minimising stormwater runoff

Impact on the Structure Plan

Landslip as an environmental risk adds an additional rationale for a number of the directions of the Structure Plans. Specifically the minimum lot size and site coverage provisions developed as part of the *Three Towns Neighbourhood Character Study* and implemented through Amendment C22 to the Colac Otway Planning Scheme and the recommendations from the *Stormwater Management Strategy*. These directions support the achievement of the aims of the existing Erosion Management Overlay.

Objectives

Reduce the likelihood of landslip in the hamlets

Strategies

- Maintain the Erosion Management Overlay on steeply sloping and unstable land surrounding the hamlets.

- Maintain the minimum lot size and site coverage provisions in the Scheme as a way to minimise the amount of development - and therefore loads induced on slopes.
- Maintain vegetation and encourage revegetation to improve land stability.
- Implement the stormwater management strategies to reduce runoff and associated landslip and erosion effects.

4.4

Activities

Foreshore

Existing Situation

The foreshore, including the Great Ocean Road, the General Store/Cafe and the estuaries, provide the focus for activity in the three hamlets. In summer they bustle with part time residents on holiday, beachgoers, traffic along the Great Ocean Road and sightseers breaking their journey at the General Store.

Responsibility for managing the foreshores is complex as both Council and the Department of Sustainability and Environment have roles as the Committee of Management while many of the works undertaken on the foreshore are undertaken by volunteers of the Foreshore Committees.

Wye River and Separation Creek Masterplan 1997 updated 2001 & 2005

states that *“the overriding treatment for the foreshore is to minimise intrusion by new structures, plant native species, remove weeds and maintain the whole area as natural as possible”* (Tract Consultants 1997, p.4).

Improvement works and new furniture on the foreshore have been based on a common theme that takes its inspiration from the timbering past and the wooden poles along the foreshore. A range of new works, including the upgrade of the playground, the new barbeque and associated tables and chairs, revegetation works and improvements to the foreshore camping ground have occurred based on the Masterplan.

The 2001 Masterplan is included as an Appendix to this report.

Recreation Strategy

The Structure Plans report is consistent with the *Recreation Strategy* which requires the development of a regional trails network. The Structure Plans provide the details of trail networks within Kennett River, Wye River and Separation Creek for the Regional Trails network.

Community Facilities

The foreshore is home to a number of community facilities. The following table outlines what facilities are present, their condition and recommended future direction.

BUILDING OR STRUCTURE	DESCRIPTION	RECOMMENDATION
KENNETT RIVER		
Surf Life Saving Club	Single storey older brick building. Poor appearance and unsuitable for multiple uses.	In need of replacement with a newer facility with potential for a greater number of uses. Investigate options for moving the building to a more central site.
Hard Court Tennis Court	Single tennis court	
Caravan Park	Cabins, predominantly campsites. Located close to the beach on flatter partially treed land.	Support the role of the Caravan Park. Encourage indigenous planting and landscaping across the caravan parks. Retain camping sites
Public Toilets	There are no public toilets in Kennett River. The toilets at the Caravan Park are used by people not staying there.	Develop public toilets at the General Store or at a new SLSC. A public toilet at the SLSC will be a multi-purpose building including the Surf Club gear room and a community

		meeting room.
WYE RIVER		
Surf Life Saving Club	High quality contemporary single storey brick building with a coastal design theme.	Needs to be more than a single use facility
Harrington Memorial Park	This bushland park located close to the centre of Wye River is greatly valued for its open space and visual impact.	Retain and maintain as a small, centrally located bushland area. Any proposed improvements should involve consultation with the community.
Playground	Redeveloped in 2002. Follows the large block hardwood design theme as outlined in the Masterplan.	Auditing and maintenance needs to be brought in line with Council's approach – currently managed by Foreshore Committee
BBQ and Shelter	Older structure	In need of improvements
Picnic Area	Recently constructed. Follows the large block hardwood design theme as outlined in the Masterplan.	None
Caravan Park (foreshore)	Campsites located on the foreshore reserve.	Support the role of the Caravan Park. Encourage indigenous planting and landscaping across the caravan park. Retain camping sites Encourage use as public open space outside of peak tourist season
Caravan Park (river)	Cabins, campsites, holiday flats. Occupies a predominantly cleared low lying valley across the Wye River.	Support the role of the Caravan Park. Encourage indigenous planting and landscaping across the caravan park. Retain camping sites.
Public Toilets	The southern foreshore toilet block has been upgraded. Plans to upgrade the toilet block in the Foreshore Caravan Park are included in the 2001 Masterplan.	The Foreshore Caravan Park toilet block is in need of improvement or replacement.
SEPARATION CREEK		
None		

Aside from the above, the Telstra exchange on the coast at the southern end of Wye River (Port Sturt) is visually intrusive as it breaks the view of the ocean and is a simple, functional building that does not respond to its landscape context. It should be relocated. If this is not possible, options are to be investigated to lessen the visual impact.

The impact of climate change must be planned for in any new works on the foreshore. The 2007 draft *Victorian Coastal Strategy* advises that a rise in sea levels of approximately 0.4 to 0.8 metres by the end of the 21st Century must be assumed for planning purposes. It also predicts that extreme weather events, such as major storms, will happen more often. Foreshore works will need to accommodate these changes, either by being strengthened at the time of re-construction or by being planned and designed to accommodate this change.

These coastal hamlets are expected to retain high levels of visitation notwithstanding climate change. Possible impacts may include longer visits and a demand for increased public transport from the larger towns.

Future Direction

The Masterplan for Wye River continues to provide a sound basis for improvement of the foreshore in Wye River and many directions are transferable to Kennett River. The actions of the Wye River Masterplan have been included in this report. These actions have been reviewed, updated and expanded to provide an outline Masterplan for the three hamlets.

Impact on the Structure Plans

The foreshores will continue to be the principal community spaces in the hamlets. Public improvement works (aside from the road and drainage works discussed in the Environment section of this report) will focus on improving the amenity and recreational opportunities of the foreshore or on improving access to the foreshore from other areas.

The Structure Plans envisage that there will be no formal active open space, such as ovals, tennis courts or soccer pitches, unless deemed appropriate in the Further Investigation Area. The recreational opportunities in the hamlets will generally be limited to the opportunities provided by the ocean and rivers and passive activities such as walking.

Objectives

Maintain the foreshore area and keep as natural as possible

Minimise intrusion of new structures

Provide quality facilities to provide for and attract tourism

Ensure that the foreshores are readily accessible from all areas of the hamlets

Strategies: General

See the Access section for information related to pedestrian and bicycle links

- Provide seating and landscaping at key nodes along high pedestrian traffic routes to provide small open space areas and rest stops for pedestrians. Set these seating and landscaping within the wide street reserve.
- Continue the common furniture theme (seating, barriers etc) across the hamlets using theme that takes its inspiration from the timbering past and the wooden poles along the foreshore as described in the 2001 Masterplan..
- Accommodate likely impacts of climate change, such as rises in sea levels of 0.4 to 0.8 metres and more frequent storm events in foreshore works, such as strengthening sea walls and jetties at the time of re-construction or planning and designing new works to accommodate climate change.
- Create or enhance safe pedestrian access to the foreshores.
- Encourage planting and landscaping at the Caravan Parks to incorporate indigenous plants, blurring the edges of public and private land.
- Retain camping sites in the Caravan Parks.
- Minimise new signage and structures.
- Audit and upgrade if necessary the public toilets/changing rooms.
- Continue the program of weed removal (hiring a qualified horticulturalist to oversee works) and planting of indigenous vegetation (this is applicable to the whole foreshore, refer to planting palette) ensuring mass plantings of a minimum number of species per area rather than numerous single species whilst maintaining views to the water

Strategies: Kennett River

- Maintain the camping sites at the Caravan Park and prevent further development of cabins.
- Preserve the “Pat Harrington” buildings as buildings contributing to the character of the area.
- Landscape the recreation reserve and picnic area.
- Investigate installing a playground in the recreation and picnic area.
- Construct a public toilet. The preferred location is to the north of the middle foreshore car park as part of a relocation / redevelopment of the Surf Life Saving Club (see map).

Strategies: Wye River

- Plant suitable native trees adjacent to the Cypress Trees (suggested species are Banksia marginate and Eucalyptus viminalis) to allow the conifers replacement in the next 20 years.
- Landscape and improve the grassed area on the south of the road bridge on the ocean side of Wye River.
- Upgrade the toilet block on the foreshore.
- Landscape the foreshore caravan park in a manner that does not reduce the total number of sites available such as tree planting along roadways and between sites.
- Encourage use of the foreshore Caravan Parks as public open space outside peak tourist season.
- Build a lookout at Point Sturt to access the beach

Strategies: Telstra Exchange

- Discussions should be held to encourage Telstra to investigate options to relocate the exchange at Point Sturt or to take measures to reduce the visual impact.

Commercial, Retail and Tourism Opportunities

Existing Situation

The economic opportunities presented by the tourism industry play a vital role in the ongoing viability of the hamlets, with a large proportion of the local employment in the area being tourism related. The importance of tourism is outlined and supported in State and Shire Planning Policy.

As the capacity to expand is restricted, it is important to ensure that opportunities for a diverse range of tourist accommodation are retained within the existing settlement boundaries. Due to the constraints of water supply and effluent disposal and limited land supply, it is envisaged that these would be developments of a modest scale and style.

There is a risk that rising land values might make the caravan parks commercially unviable compared to the development potential of the land. It is important to maintain the camping and caravan park facilities and other lower cost accommodation options.

The general stores / cafes provide an essential service and a social focus, however their role as cafes can be improved to better take advantage of the scenic surrounds and high summer visitation.

Future Direction

In general the hamlets are unsuited to large scale commercial or tourist developments. Tourist accommodation and retail developments are to be encouraged in small scale projects. The caravan parks are to be retained. The General Stores play an important commercial and social role and they should be

improved. Similarly effluent disposal issues need to be resolved before improvement or expansion can proceed.

Impact on the Structure Plans

Incremental change to existing facilities is envisioned by the Structure Plans. Accordingly, the current focal points of the hotel, the General Stores, the Life Saving Clubs and the Caravan Parks will continue to be the focal points over the life of the Structure Plan. Public works to manage traffic and provide pedestrian access will recognise this small network of focal points and gradually improve the existing situation in scale with the objective of incremental change to these places.

Additional tourist accommodation is proposed to be centrally located near the commercial and community facilities so as to minimise the impact of this infill growth. This is anticipated as being of a modest scale and self sustainable in terms of water supply.

Within the private sector, the use of single dwellings as holiday rental is expected to continue as the principal mode of tourist accommodation.

Objectives

Support the growth of tourism as an employer for the region

Continue to provide commercial and retail services by Incremental change to existing facilities

Continue to provide affordable tourist accommodation

Continue to provide tourist accommodation principally in the form of holiday rental of single dwellings.

Provide more diverse, small scale accommodation in the central locations shown on the Structure Plan maps

General Strategies

- Restrict/discourage large scale commercial development within the hamlets.
- Encourage the retention of caravan parks and camping facilities, to provide low cost accommodation options. Support the role of the caravan parks.
- Explore opportunities to improve the General Store and Cafes of Kennett River and Wye River, including incorporating outdoor dining areas.
- Coordinate redevelopment of the General Stores and Cafes of Kennett River and Wye River with improvement of the car parking area to be more landscaped and pedestrian friendly, and incorporate street furniture and shading for informal outdoor dining / picnic area. In Wye River this can include landscaping on the foreshore side of the Great Ocean Road south of the Wye River.

Kennett River Strategies

- Investigate opportunities for more diverse small scale accommodation, at 8-10 Hawdon Avenue, subject to the requirements of the Land Subject to Inundation Overlay and the resolution of effluent disposal issues.
Refer to the Key Directions Map for the location of the 8-10 Hawdon Avenue

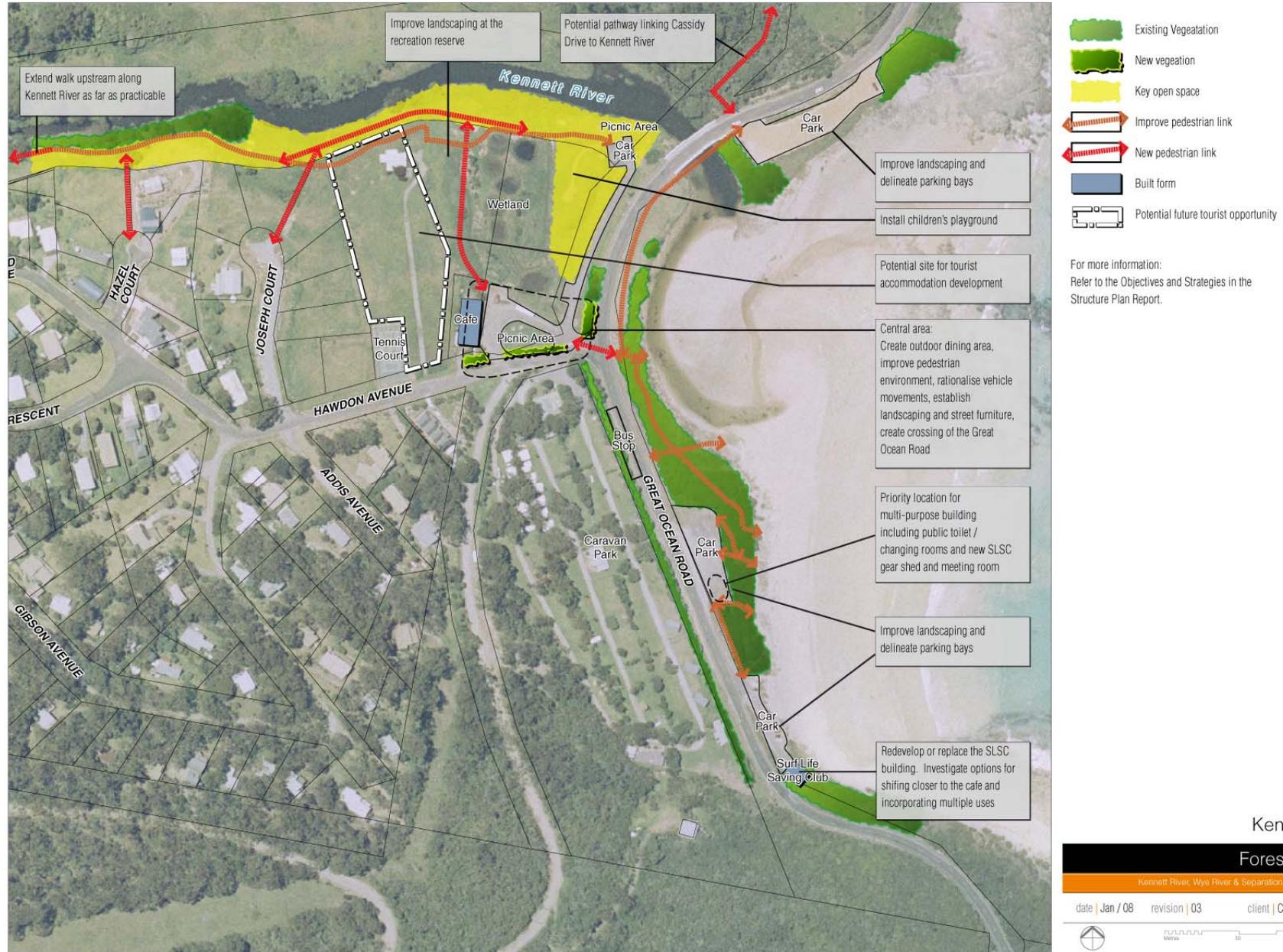
Wye River Strategies

- Retain the Wye River Caravan Park with the current range of accommodation options

Separation Creek Strategies

- Encourage more diverse accommodation in small scale projects on the flatter land close to the Creek.

Map 8 Foreshore Plan: Kennett River



Map 9 Foreshore Plan: Wye River



- Existing Vegetation
- New vegetation
- Key open space
- New tree planting (indicative)
- Improve pedestrian link
- New pedestrian link
- Built form

For more information:
Refer to the Objectives and Strategies in the Structure Plan Report.

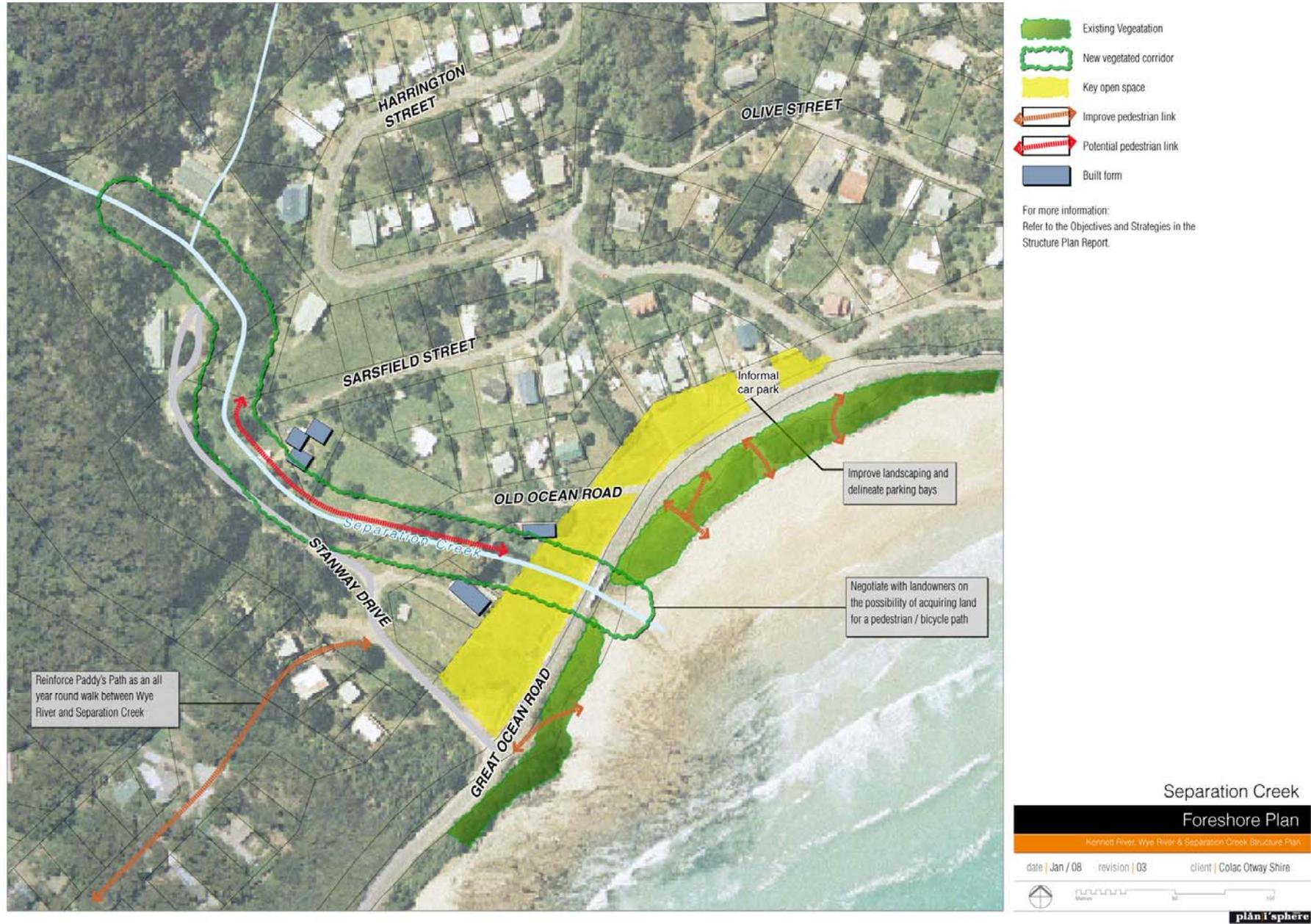
Wye River
Foreshore Plan

Kennett River, Wye River & Separation Creek Structure Plan

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Map 10 Foreshore Plan: Separation Creek



4.5

Access

Existing Conditions

Access is characterised by narrow roads without shoulders extending up the slopes from the Great Ocean Road. It is anticipated that the road network will have to carry some additional traffic related to increased population and visitation.

Great Ocean Road

The Great Ocean Road divides the beach and foreshore from the remainder of the three hamlets. There is significant pedestrian movement across the Great Ocean Road especially in peak summer periods. The traffic speed is slowed to 60km/h at this time.

There are a number of pedestrian desire lines crossing the road from various points to meet beach access tracks, stretched along a 100-200m section of the road.

Local Roads

The local roads are narrow and do not have shoulders. They are shared by cars, bikes and pedestrians. Many of these roads do not have kerbs or footpaths and many are unsealed. In many cases there are trees in the road reserves that are close to the road surface. Traffic volumes are low, and the aforementioned characteristics combined with the steep topography restrict vehicle speeds.

Parking

While a parking capacity study has not been undertaken, anecdotal evidence suggests that for most of the year there is an adequate car parking supply. Parking reaches or exceeds capacity during peak visitation periods and there is a need to improve the parking provision along the foreshore. The informal organisation (no parking bays delineated) of the foreshore car parks results in their inefficient use. Feedback in the second round of consultation suggested that visitor parking associated with the riverside Caravan Park may not be sufficient, with overflow visitor parking adding to the congestion near the entry to the Park.

Pedestrian and Bicycle Network

The small size, scenic landscape and low traffic volumes of the roads provide good opportunities to establish walking or cycling as a significant proportion of trips. The majority of the dwellings are located within 500m of the beach and/or shop area.

Kennett River has a pedestrian / bicycle path, maintained by the Kennett River Association, running adjacent to the river. This is utilised and valued by the community. There is a pedestrian path along the Wye River through the Caravan Park and the study team has identified a similar opportunity at Separation Creek. Ongoing landscaping, rehabilitation and revegetation of the existing paths provide an opportunity to improve the quality and community ownership of these spaces. Over a longer term, discussions should occur with the owners of those parts of the Separation Creek within the Township Zone that are in private ownership to eventually result in a path along this creek.

Signage

There is a proliferation of advertising and directional signage along the Great Ocean Road and in the hamlets. Some of this signage is old or inappropriate. It detracts from the spectacular setting of the hamlets and need not be there.

Future Direction

It is recommended that insofar as it is safely practical, and excluding necessary works to implement the Stormwater Management Strategy, the roads will be maintained in their current form. The current form of road treatment (in comparison with a sealed surface with kerb and channel) will calm traffic allowing the sharing of the space with pedestrians and cyclists, reduce stormwater runoff, allow the retention of native vegetation and help to retain the rural character.

Parking provision will be improved along the foreshore and at the General Stores. Improvements in the efficiency of use of the existing foreshore car parks may be improved through delineating of parking bays. The car parks will retain their informal appearance by retaining the unsealed surface and use of the palette of materials in accordance with the *Wye River and Separation Creek Masterplan* such as slab timber. Construction of large new car parks is to be avoided. If further car parking is required in the future it will be small scale and informal, developed back from the foreshore dunes and be integrated with landscaping.

Discussions will be held with the owners and the managers of the riverside Caravan Park with a view to providing more visitor car parking on site. This would lessen the congestion in the area outside the Park adjacent to the entry and the General Store.

Formal pedestrian crossings of the Great Ocean Road should be installed in each hamlet. Central locations, close to preferred foreshore entry points, will be selected if possible. A grade separated crossing, such as a boardwalk under the road bridge, will be investigated at Wye River as an alternative to a pedestrian crossing of the Great Ocean Road.

A number of alterations and extensions to the pedestrian/cycle network are suggested below in the Strategies section to form a more complete and connected network.

As a principle, signage should be sufficient to inform and direct travellers yet should not detract from the scenic beauty of the Great Ocean Road.

Impact on the Structure Plans

Retention of narrow road pavements with informal verges will help to retain the existing character. This non-interventionist approach will complement the preferred low impact stormwater, waste water and water supply solutions.

Objectives

Provide a road network that reflects the character of the hamlets and acknowledges that these roads are shared by vehicles and pedestrians

Improve pedestrian access between the hamlets and the foreshore.

Improve pedestrian access between the beach and the hamlets, particularly the general stores/café and hotel.

Improve the appearance of the Great Ocean Road and the hamlets by removing unnecessary signage .

General Strategies

- Maintain roads in their current form (as is practicable and safe), excluding works to implement the Stormwater Management Strategy and the Wildfire Management Overlay.
- Create or enhance safe pedestrian access from all parts of the hamlet to the foreshores.
- Construct zebra crossings (signage not flashing lights) with a pedestrian refuge on the Great Ocean Road opposite the general store in Wye River and opposite the middle foreshore car park at Kennett River. The precise location of both crossings would be subject to detailed survey work and approval by VicRoads. A grade separated crossing, such as a boardwalk under the road bridge, will be investigated at Wye River as an alternative to a pedestrian crossing of the Great Ocean Road.
- Introduce a 40km/h zone during peak holiday times (subject to VicRoads approval).
- Investigate options for dedicated pedestrian / bicycle pathways along the Great Ocean Road and inland.
- Improve in the efficiency of the existing foreshore car parks by delineating parking bays. Retain the informal appearance by retaining the unsealed surface and use

of the palette of materials in accordance with the Wye River and Separation Creek Masterplan.

- Allow/formalise parallel parking on roads close to the foreshore.
- Avoid new large scale car parks. Any new car parking will be provided in small scale informal car parks and incorporated landscaping.
- Initiate discussions with the owners and managers of the riverside Caravan Park to determine if additional visitor car parking can be provided inside the Park's boundaries.
- No new car parks or expansion of car parks will occur on land between the Great Ocean Road and the coast.
- Reinforce Paddy's Path as an all year round walk between Wye River and Separation Creek.
- Update the bicycle strategy.
- Undertake a signage audit along the Great Ocean Road and remove unnecessary signage.

Kennett River Strategies

- Create a path / boardwalk from the car park and picnic area near the Great Ocean Road upstream along the river reserve as far as practicable. Incorporate native revegetation and rehabilitation of the creek corridor.

Wye River Strategies

- Extend the pedestrian path upstream along the river reserve as far as practicable.

Separation Creek Strategies

- Commence discussions with owners of land containing the Separation Creek within the Township zone with the long term aim being to construct a pedestrian / bicycle path along the Separation Creek within the Township zoned land.

5 Implementation

There are a number of elements to the implementation of a Structure Plan. In this case, a number of implementation actions fall into the following categories:

Actions to be undertaken by individual property owners as they develop, extend or maintain their properties in accordance with the requirement of the Colac Otway Planning Scheme and any measures required by the relevant water authority.

Actions contained within the previous technical reports commissioned by the Council relating to waste water and stormwater management.

Actions to be undertaken by other authorities such as VicRoads and managers of the coastal and estuary areas.

Actions to be undertaken by the Council in terms of improvements to the amenity and safety of the public areas.

It is notable that the Council has introduced a number of measures to advance elements of the Structure Plans. The amendments to the Planning Scheme to introduce the Wildfire Management, Significant Landscape, Neighbourhood Character and other Overlays contribute considerably to the Structure Plans for these hamlets.

More technical work, such as the reports on waste water, water supply, stormwater, landslip and other environmental issues also contribute strongly to the Structure Plans.

6 Monitoring and Review

The achievement of the objectives and strategies of the Structure Plans will be monitored on an annual basis, with a review of the Structure Plans to take place every 5 years. The 5 yearly review will ensure that the objectives and strategies are up to date and reflect new and emerging planning policy and issues, to ensure that the Structure Plans remain a flexible and relevant planning instrument while, at the same time, providing certainty about the future development of the area to the community and Council.

7 Action Plan

STRATEGIES	IMPLEMENT THROUGH	PRIMARY RESPONSIBILITY	POTENTIAL PARTNERS	PRIORITY OF IMPORTANCE
LANDSCAPE SETTING				
Continue to protect and maintain the landscape setting of the three hamlets				
Maintain the existing Township zone boundary.	No action required			
Ensure that development in the Rural Conservation Zone complies with the policy context of the Colac Otway Planning Scheme and the objectives and requirements of that zone.	Planning Scheme	Council		High
Restrict development on the Low Density Residential Zone north of Separation Creek by introducing a Development Plan Overlay based on the approved three and four lot subdivision plans.	Planning Scheme	Council		High
SETTLEMENT CHARACTER				
Ensure that the redevelopment of housing lots respects and is in keeping with the character of the three hamlets.				
Ensure that any additional tourist accommodation respects the existing and preferred character of the hamlets and the context of the central location that is proposed.				
Apply the Planning Scheme Municipal Strategic Statement and Overlay provisions relating to Neighbourhood Character and Significant Landscapes when assessing applications for new dwellings or extension to existing dwellings.	Planning Scheme	Council		High
Restrict development on the Low Density Residential Zone north of Separation Creek by introducing a Development Plan Overlay based on the approved three and four lot subdivision plans.	Planning Scheme	Council		High
SIZE OF SETTLEMENT				
Contain growth of the hamlets within the existing boundaries.				
Contain development within the settlement boundary as defined on the Size of Settlements map.	Planning Scheme	Council		High
Ensure that any development outside the settlement boundary is non-urban in appearance and function and meets the criteria contained in the GORRLAS.	Planning Scheme	Council		High
Encourage any infill development, particularly tourist accommodation, to	Planning Scheme	Council		High

locate in the flatter, less vegetated areas near the centre of the hamlets (as depicted in map) in preference to steeper more vegetated land.

EFFLUENT DISPOSAL

Ensure that waste water from existing and proposed development is effectively managed so that no undue environmental effects occur.

Implement the Wye River and Separation Creek wastewater system as proposed by Hyder Consulting in the *Wye River, Separation Creek, Kennett River Concept Design Final Report (2007)*

Water Act Environment Protection Act Septic Tank Code of Practice	Barwon Water/Council	High
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Advocate for funding for improved effluent management at Kennett River

Advocate to DSE under the Country Towns Sewer and Water Supply Scheme	Council	High
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Provide adequate effluent management at Kennett River

Design and Construct an appropriate effluent management system	Council/Barwon Water	High
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Encourage parties that extract river water, such as the campgrounds to adopting water efficiency measures, maximising collection of rainwater on site, installing storage of 'winterfil' and introducing water reduction measures such as using treated waste water for toilet flushing,.

Advocacy Education	Council	High
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WATER SUPPLY

Ensure that individual landowners remain responsible for their own water supply

Undertake an education program to improve potable water security and reduce quality risks for property owners based on the DHS publication – Your Private Drinking Water Supply 2006.

Education	Council	Medium/High
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STORMWATER MANAGEMENT

Manage stormwater drainage in the three hamlets, recognising the constraints posed by the unique climatic, geological and environmental setting .

Minimise soil disturbance and vegetation removal

Planning Scheme Overlays	Council	Medium/High
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Extend the existing pipe and pit system\where possible and, otherwise, direct stormwater from private property to a roadside table drain or low flow pipes.

Capital Works budget	Council	Medium/High
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Properly grade roads to direct water to the roadside drains

Recurrent Maintenance	Council	Medium/High
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Contain road drainage within road reserves or, in the case of cross falls, direct road drainage through private property via easements

Administrative/Legislative changes including Subdivision Act	Council	Medium/High
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Remove development and obstructions and establish easements over

Advocacy,	Council	Medium/High
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natural drainage lines, including those on private property	Administrative/Legislative changes including Subdivision Act		
Provide sediment traps and dissipation systems at discharge points and, where possible, ensure that stormwater passes through wetlands before being released into rivers.	Capital Works budget	Council	Medium/High
Maintain the wetland in Kennett River and its role as a biofiltration system and investigate other opportunities to introduce similar systems to the other hamlets.	Recurrent Maintenance	Council	Low
Encourage water sensitive urban design in new developments.	Promotion/Education	Council	
WILDFIRE THREAT			
Reduce the threat of wildfire while where possible maintaining the character of the hamlets	vegetated		
Provide information to residents and landowners about CFA publications and educational programs to ensure the community is aware of wildfire risks and methods to reduce risk, including through appropriate management, selection and placement of vegetation and landscaping.	Education	CFA	Medium/High
Finalise the Municipal Fire Prevention Plan.	Emergency Management Act	Council	Medium/High
Consult with the CFA on low impact modification to the existing road networks.	Capital Works budget	Council	Medium/High
Ensure that the requirements of the Wildfire Management Overlay are adhered to.	Planning Scheme	Council	High
LANDSLIP HAZARD			
Reduce the likelihood of landslip			
Maintain the Erosion Management Overlay on steeply sloping and unstable land surrounding the settlements.	Zone Provisions	Council	High
Maintain the minimum lot size and site coverage provisions in the Scheme as a way to minimise the amount of development - and therefore loads induced on slopes.	Zone Provisions	Council	High
Maintain vegetation and encourage revegetation to improve land stability.	Enforcement / Capital Works budget	Council	Medium
Implement the stormwater management strategies to reduce runoff and associated landslip and erosion effects.	Capital Works budget	Council	Medium/High
FORESHORE			
Maintain the foreshore area and keep as natural as possible			

Minimise intrusion of new structures

Provide quality facilities to provide for and attract tourism

Ensure that the foreshores are readily accessible from all areas of the hamlets

Strategies: All Hamlets

Provide seating and landscaping at key nodes along high pedestrian traffic routes to provide small open space areas and rest stops for pedestrians. Set these seating and landscaping within the wide street reserve.	Capital Works	Council/FMC		Medium
Continue the common furniture theme (seating, barriers etc) across the hamlets using theme that takes its inspiration from the timbering past and the wooden poles along the foreshore as described in the 2001 Masterplan.	Capital Works	Council/FMC		Medium
Accommodate likely impacts of climate change, such as rises in sea levels of 0.4 to 0.8 metres and more frequent storm events in foreshore works, such as strengthening sea walls and jetties at the time of reconstruction or planning and designing new works to accommodate climate change.	Recurrent Operating budget/Capital Works	Council/FMC		Medium
Create or enhance safe pedestrian access from all parts of the hamlets to the foreshores.	Capital Works	Council/FMC	VicRoads	Medium
Encourage planting and landscaping at the Caravan Parks to incorporate indigenous plants, blurring the edges of public and private land.	Advocacy	Council		Medium
Retain camping sites in the Caravan Parks.	Application of Foreshore Management Plan	Council/FMC		High
Minimise new signage and structures.	Application of Foreshore Management Plan	Council/FMC		Medium
Audit and upgrade if necessary the public toilets/changing rooms.	Capital Works	Council		Medium
Continue the program of weed removal (hiring a qualified horticulturalist to oversee works) and planting of indigenous vegetation (this is applicable to the whole foreshore, refer to planting palette) ensuring mass plantings of a minimum number of species per area rather than numerous single species whilst maintaining views to the water.	Capital Works	Council		Medium

Strategies: Kennett River

Maintain the camping sites at the Caravan Park and prevent further development of cabins	Application of Foreshore Management Plan	Council/FMC		High
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Replace the SLSC with a multi-purpose building at a more central site.	SLSC	SLSC / State Govt / FMC	Medium
Preserve the "Pat Harrington" buildings as buildings contributing to the character of the area.			
Landscape the recreation reserve and picnic area	Capital Works	Council / FMC	Medium
Investigate installing a playground in the recreation and picnic area	Recurrent budget	Council	High
Construct a public toilet. The preferred location is to the north of the middle foreshore car park and could be developed as part of a relocation / redevelopment of the Surf Life Saving Club (see map).	Capital Works	Council / FMC	Medium
Strategies: Wye River			
Retain and maintain the Harrington Memorial Park.	Recurrent budget	Council	High
Encourage the use of the SLSC by groups apart from the SLSC	Advocacy / Promotion	Council / SLSC	Medium
Plant suitable native trees adjacent to the Cypress Trees (suggested species are Banksia marginate and Eucalyptus viminalis) to allow the conifers replacement in the next 20 years.	Capital Works	Council / FMC	Medium
Landscape and improve the grassed area on the south of the road bridge on the ocean side of Wye River.	Capital Works	Council / FMC	Medium
Ensure the playground auditing and maintenance is consistent with Council's approach	Recurrent budget	Council / FMC	High
Upgrade the toilet block on the foreshore.	Capital Works	Council / FMC	Medium
Replace/Upgrade the Barbeque and Shelter on the foreshore	Capital Works	Council / FMC	Medium
Landscape the foreshore caravan park in a manner that does not reduce the total number of sites available such as tree planting along roadways and between sites.	Application of Foreshore Management Plan	Council/FMC	Medium
Encourage use of the foreshore Caravan Parks as public open space outside peak tourist season.	Application of Foreshore Management Plan	Council/FMC	Medium
Build a lookout at Point Sturt to access the beach	Capital Works	Council / FMC	Low
Strategies: Telstra Exchange			
Discussions should be held to encourage Telstra to investigate options to relocate the exchange at Point Sturt or to take measures to reduce the visual impact.	Telstra	Council	Medium

ACTIVITIES

Support the growth of tourism as an employer for the region

Continue to provide commercial and retail services by Incremental change to existing facilities

Continue to provide affordable tourist accommodation by incremental change to the existing facilities

Continue to provide tourist accommodation principally in the form of holiday rental of single dwellings.

Provide more diverse, small scale accommodation in the central locations shown on the Structure Plan maps

Strategies: General

Restrict/discourage large scale commercial development within the hamlets.	Planning Scheme	Council		High
Encourage the retention of caravan parks and camping facilities in each of the settlements, to provide low cost accommodation options. Support the role of the caravan parks.	Advocacy	Crown Land Managers		Medium
Explore opportunities to improve the General Store and Cafes of Kennett River and Wye River, including incorporating outdoor dining areas, subject to the resolution of effluent disposal issues.	Advocacy	Private landowner		High
Coordinate redevelopment of the General Stores and Cafes of Kennett River and Wye River with improvement of the car parking area to be more landscaped and pedestrian friendly, and incorporate street furniture and shading for informal outdoor dining / picnic area. In Wye River this could include landscaping on the foreshore side of the Great Ocean Road south of the Wye River.	Capital Works	Council	VicRoads	High

Strategies: Kennett River

Investigate opportunities for more diverse small scale accommodation at 8-10 Hawdon Avenue, subject to the requirements of the Land Subject to Inundation Overlay and the resolution of effluent disposal issues.	Planning Scheme	Private landowner/ Council		Medium
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Strategies: Wye River

Retain the Wye River Caravan Park with the current range of accommodation options	Planning Scheme provisions	Private landowner/ Council		Medium
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Strategies: Separation Creek

Encourage more diverse accommodation in small scale projects on the flatter land close to the Creek.

ACCESS

Provide a road network that reflects the character of the hamlets and acknowledges that these roads are shared by vehicles and pedestrians

Improve pedestrian access between the hamlets and the foreshore.

Improve pedestrian access between the beach and the hamlets, particularly the general stores/café and hotel.

Improve the appearance of the Great Ocean Road and the hamlets by removing unnecessary signage

Strategies: General

Maintain roads in their current form (as is practicable and safe), excluding works to implement the Stormwater Management Strategy and the Wildfire Management Overlay).	Capital Works	Council	Medium
Create or enhance safe pedestrian access from all parts of the hamlets to the foreshores.	Capital Works	Council	Medium
Construct zebra crossings (signage not flashing lights) with a pedestrian refuge on the Great Ocean Road opposite the general store in Wye River and opposite the middle foreshore car park at Kennett River. The precise location of both crossings would be subject to detailed survey work and approval by VicRoads. A grade separated crossing, such as a boardwalk under the road bridge, will be investigated at Wye River as an alternative to a pedestrian crossing of the Great Ocean Road.	VicRoads funding/ Capital Works	VicRoads/ Council	High
Introduce a 40km/h zone through the hamlets during peak holiday times (subject to VicRoads approval).	VicRoads	VicRoads	Medium
Investigate options for dedicated pedestrian / bicycle pathways along the Great Ocean Road and inland.	VicRoads funding/ Capital Works	VicRoads/ Council	High
Improve in the efficiency of the existing foreshore car parks by delineating parking bays. Retain the informal appearance by retaining the unsealed surface and use of the palette of materials in accordance with the Wye River and Separation Creek Masterplan.	VicRoads funding/ Capital Works	VicRoads/ Council	Medium
Initiate discussions with the owners and managers of the riverside Caravan Park to determine if additional visitor car parking can be provided inside the Park's boundaries.	Advocacy	Council / DSE / Caravan Park operator.	

Allow/formalise parallel parking on roads close to the foreshore.	VicRoads funding/ Capital Works	VicRoads/ Council		High
Avoid new large scale car parks. Any new car parking should be provided in small scale informal car parks and incorporated landscaping. (No new car parks or expansion of car parks should be occur on land in the between the Great Ocean Road and the coast.)	VicRoads funding/ Capital Works	VicRoads/ Council		Medium
Reinforce Paddy's Path as an all year round walk between Wye River and Separation Creek.	Capital Works	Council		Medium
Update the bicycle strategy.	Council	Council		Medium
Undertake a signage audit along the Great Ocean Road and remove unnecessary signage.	VicRoads funding/ Capital Works	Council	VicRoads	Medium
Strategies: Kennett River				
Create a path / boardwalk from the car park and picnic area near the Great Ocean Road upstream along the river reserve as far as practicable. Incorporate native revegetation and rehabilitation of the creek corridor.	Capital Works	Council		Medium
Strategies: Wye River				
Extend the pedestrian path upstream along the river reserve as far as practicable. .	Capital Works	Council		Medium
Strategies: Separation Creek				
Commence discussions with owners of land containing the Separation Creek within the Township zone with the long term aim being to construct a pedestrian / bicycle path along the Separation Creek within the Township zoned land..	Advocacy	Council		Low

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Appendix 1 – Stormwater Treatment Proposals

COS - Three Towns Drainage Study
Drainage Infrastructure Appraisal

Wye River (north)

Drainage catchment (road system)	Local drainage system (inc. GIS references)				Description	Field Observations	Photo Ref.	Recommended Improvements	Priority		
	Location/Road	O/L Drain(s)	Pit/Inlet	Culvert outlets					High(H)	Medium(M)	Low(L)
<i>NG_A, NG_B</i>											
Ilowra	Ilowra Ave	D23	P18	S62	Table drain to culvert under road discharging to top of The Boulevard	Cross drain at end of Ilowra to table drain along Riverside before discharging via private property towards Nga	18	Vegetate preferential path on slope and create easement			M
Boulevard/Riverside	The Boulevard/Riverside Drive(north side)	D22, D25, D28	P19	S66	Table drain to culvert under road discharging via gully to Wye River floodplain (shown as private property)	Well formed drained with ideal discharge arrangement (i.e. into vegetated gully)	20, 23, 24	Relieve drain with additional cross drains to discharge points on vegetated slopes			M
	Riverside Drive (west side)	D27	-	Unnamed	Table drain to culvert (adjacent to S66) under road discharging via gully to Wye River floodplain (shown as private property)	Well formed drained with ideal discharge arrangement (i.e. into vegetated gully)	21, 22	Relieve drain with additional cross drains to discharge points through private property (Check S69)			L
<i>NG_C</i>											
Coryule/Karingal	Coryule Avenue	D18	-	S52 (Ø250)	Table drain connecting to Karingal Road Drain	Drain across Coryule Av is fully blocked	28	Reinstate culvert with inlet protection			M
	Karingal Drive (north side)	D17, D18	P15	S55 (Ø525)	Table drain into culvert under road discharging to NG _C	Table drain entry to headwall of road culvert for NG _C	27	Reinforce at entry of table drain into headwall			M
Karingal/Boulevard	Karingal Drive (west side)	D18	P16	S58	Cross culvert discharging to NG _C	Culvert under road not observed		Confirm cross culvert operating effectively			L
	Karingal Drive / The Boulevard	D20, D21	P17	S60	Table drain into culvert under road discharging to private property	Cross culvert discharge flow path into private property (not found)	25, 26	Probe point of discharge then either create drainage easement along preferred alignment, and consider providing cross culvert across Karingal redirect drainage to system D28			H
	The Boulevard	D28 / unnamed	P20	S80 (Ø750)	Table drains from east and west into culvert under road, discharging to NG _C	Table drain connects to road culvert for NG _D		Increase table drain capacity to accept additional flow from Karingal Rd (refer to above)			H
<i>NG_D</i>											
Karingal	Karingal Drive (north side)	D16, D15	P14	S47	Table drain from east and west into "culvert" under road discharging into NG _D	Silted culvert connection from table drain to road culvert for NG _D	30, 31	Reinstate culvert with inlet protection; provision of road edge berm to protect properties below			L
	Karingal Drive	unnamed	P13	S45 (Ø300)	Table drain (short section) to culvert under road discharging to NG _D (?)	Cross culvert not observed		Confirm cross culvert (reinstate as required and supplement with additional cross culverts)			L
Boulevard/Wallace/Koonya	The Boulevard (north side)	unnamed	P21	S90 (Ø300)	Table drain to culvert under road, discharging to NG _D	Table drain connects to road culvert for NG _D	34				
	The Boulevard	unnamed	-	S87	Culvert under road, discharging to corner of The Bluff	Cross drain discharged into table drain on south side of road from The Bluff, with flow path via private property connects to drain for S147		Provide clear flow path through private property and create easement as required			M
	Wallace Street	NG _D	P22	S91 (Ø1050)	Road culvert for NG _D	Large diameter pipe in good condition	34				

Wye River (north)

Drainage catchment (road system)	Local drainage system (inc. GIS references)				Description	Field Observations	Photo Ref.	Recommended Improvements	Priority High(H) Medium(M) Low(L)
	Location/Road	O/L Drain(s)	Pit/Inlet	Culvert outlets					
	Wallace Street	D31	-		Table drain towards d/s end of S91 outlet pipe	Short section of table drain discharging into NGd		-	
	Koonya Avenue	unnamed	-	S9 (Ø300)	Table drain (short section) discharge connection to NG ₀ (via steep drop)	Short section of table drain discharging into NGd		-	
Boulevard(e/ower)	The Boulevard (west side)	D45	-	S147	Table drain connection to continuation of NGd from outlet of S146	Well maintained table drain with appropriate size driveway culverts		-	
	The Boulevard (crossing)	NG ₀	-	S146	Road culvert crossing for NG ₀	Large capacity pipe		-	
	The Boulevard (west side)	unnamed	P39, P38	S142	Table drain (west side below cross culvert headwall)	Discharge combines with NGd flow and from P39 continues along open drain before entering Wye River floodplain via vegetated gully	51	-	
McClellan/The Boulevard	The Boulevard (east side)	unnamed	P37, P38A	unnamed	Table drain (short section) connects to d/s drainage infrastructure	Table drain from below P38 enters u/g drainage infrastructure	52	Maintain clear entry to pit	L
	McClellan (both sides)	unnamed, D43	P37, P38A	unnamed	Kerb and channel supplementing u/g drainage system (Ø300 mm pipe)	U/G drain discharges under road to foreshore	53, 54	-	
	McClellan (both sides)	U/G various	various	7306	U/G concrete pipe drains along road alignment, discharging under road towards foreshore	U/G drain discharges under road to foreshore		-	
NG_E, NG_F					<i>Existing development has encroached into natural drainage lines (fess defined) discharging towards coastal foreshore area</i>				
Karingal	Karingal Drive (north side)	unnamed	P12	S38 (Ø525)	Table drain to culvert under road discharging via private property to NG _E	Discharge into vegetated slopes to flow path defined between existing dwellings	32	Form berm along outer edge of road; create easement through private property	H
	Karingal Drive (north side)	unnamed	P11	S37	Table drain from both directions (short sections) to culvert under road discharging to private property	Discharge into vegetated slopes to flow path defined between existing dwellings	42	Form berm along outer edge of road; create easement through private property	H
Koonya	Koonya Avenue	D3	P1	S3	Table drain, to pipe connection the culvert under road (S4)	Well maintained table drain with lip on outer edge of road	38	-	
	Koonya Avenue	-	-	S4 (Ø475)	Culvert under road - Discharges to NG _E in private property	Various u/g pits receiving from table drains and house connections- point of discharge of culvert in private property not found	36, 37	Prove point of discharge, provide protected flow path and create easement along preferred flow path; provide additional edge berms for additional protection for lower properties	H
	Koonya Avenue (west side)	D3	P2	S5	Table drain to culvert under road discharging to private property	point of discharge of culvert in private property not found		Consolidate drainage via table drains to a preferred discharge flow path towards NGd	M
	Koonya Avenue	unnamed	P4	S8	Table drain to culvert under road (under discharge)	Cross culvert connection to Wallace St drain (D6)	35	Confirm connection to discharge flow path towards NGd	M

Wye River (north)

Drainage catchment (road system)	Local drainage system (inc. GIS references)				Description	Field Observations	Photo Ref.	Recommended Improvements	Priority High(H) Medium(M) Low(L)
	Location/Road	O/L Drain(s)	Pit/Inlet	Culvert outlets					
	Wallace Street / Koonya Avenue	D6	P5	S10	Table drain to culvert discharging towards the NGd	Discharge to vegetated slope towards NGd		Provide or reinstate connections of above system to this point of discharge	M
Wallace	Wallace Street	D7, D8	P6	unnamed	Table drain (both directions), to culvert under Wallace Street discharging to private property	Discharge into vegetated slopes to defined flow path		Create easement for preferred drainage path; investigate opportunity to connect to u/g drainage at McClellan	M
	Wallace Street	-	P7	S14 (Ø675)	Culvert under road to private property	Discharge into vegetated slopes in private property	49	Create easement for preferred flow path	M
	Wallace Street	D9	-	S16	Table drain, towards culvert under road discharging to private property	Discharge into vegetated slopes in private property		Consolidate drainage to preferred path above or create additional easements	M
Wallace (lower)	Wallace St	unnamed	-	S23	Table drain to end of road and discharging via private property to NG	Well formed table drain discharging to vegetated slope towards foreshore			
Durimbil	Durimbil Avenue	unnamed	-	S24	Table drain (short section), culvert under road discharging to private property	Discharge to private property		Consolidate drainage to preferred path (towards NGe)	H
	Durimbil Avenue (north side)	-	-	S26	Table drain (both directions), to culvert under road discharging to private property	Dwelling constructed over drainage line - point of discharge from culvert not found	43, 44, 45	Prove point of discharge, provide protected flow path and create easement along preferred flow path	H
	Durimbil Avenue (east side)	unnamed	P9	S29	Table drain (both directions), to culvert under road discharging to private property	Discharge to vegetated slopes in private property towards NGf	46	Provide protected flow path and create easement along preferred flow path	H
Drainage to the East					Various local catchments/minor drainage lines on east side of town discharging towards coastal foreshore area				
Karingal	Karingal Avenue	unnamed	-	-	Table drain discharging towards Separation Creek	Discharge flow path to slope has formed eroded path to access track		Provide protected drainage flow path to stable vegetated area	L
Dunoon	Dunoon Road	unnamed	-	-	Table drain, unclear point of discharge	Poorly defined table drain along road	40, 41	Form table drain and discharge to preferred path of NGf, utilising existing easement	M
	Dunoon Road	not shown	-	-	series of 3 s/w pits at end of court	u/g system at end of court with unclear point of discharge		Confirm point of discharge and provide easement for flow path	M
Iluka	Iluka Avenue	D12	-	-	Table drain to end of street (cul-de-sac)	not observed			
	Iluka Avenue (north side)	unnamed	P10	S35	Table drain, to culvert under road discharging to foreshore via road reserve	Long length of table drain to cross culvert at low point	47, 48	Create easement for discharge flow path via private property, and consider relieving drain with additional cross drains (via additional easements)	M

COS - Three Towns Drainage Study
Drainage Infrastructure Appraisal

Wye River (south)

Drainage catchment (road system)	Local drainage system (inc. GIS references)				Description	Field Observations	Photo Ref.	Recommended Improvements	Priority High(H) Medium(M) Low(L)
	Location/Road	O/L Drain(s)	Pit/Inlet	Culvert					
Wye R valley (west)					Small local gullies (not well defined) draining towards Wye River floodplain on west side of McCrae Rd Currently no drainage infrastructure discharging flows to west side of ridge line				
Morley Drain (main drainage system)					Overland drainage system on east side of ridge along main roads connecting to underground drainage infrastructure at lower end of system before discharging towards the Wye River foreshore connection				
Restricted access road	Restricted access road	unnamed	-	S162	Table Drain along restricted access road near top of catchment - unclear point of discharge	not observed			
Slashers -McCrae	Slashers Road (to McCrae Rd)	not shown	-	-	Table Drains along local access road (not shown on GIS) to McCrae Rd	Steeply graded gravel road - significant rilling and erosion	14-17	Require cross drain culverts to inside bends; at "hairpin" bends in road facing towards Wye River valley, discharge via vegetated slope or slope drain	H
	McCrae Road (east side)	unnamed	P49	S152	Table Drain including several driveway crossovers flowing into u/g drainage infrastructure in Morley Avenue(lower).	Several driveway culverts blocked; Table drain not connected at d/s end	13	Slope drain or pipe drain to connect to Morley Rd u/g system	M
	McCrae Road (west side)	D51	P47	S150	Table Drain, to culvert under road	Assumed to connect to Morley Road u/g drain	12		
Morley	Morley Avenue (west side)	unnamed D47	-	S153	Table Drain commencing from Slashers Road continues along Morley Road to the lower end of town, connecting to underground pipes (assumed to connect to S152)	Many driveway culverts blocked; forcing overland flow across road to Private Property below road		Cross drain connections to vegetated slope or slope drain; upgrade driveway culverts including inlet protection; provision of berm on edge of road	H
Morley(lower)	From Morley Av	U/G	various	7308	U/G pipe drain (300mm) through easement b/w properties to foreshore	Inlet pit blocked - flows will currently bypass	10-11	Clear inlet pit and reshape entrance	M
	Morley Avenue	D49	P41-P43	unnamed	Kerb and channel supplementing underground system	Discharges to foreshore near end of Wye River - no issues			
Drainage to the South					Small local gullies (not well defined) discharging south towards the coastal foreshore				
	Slashers Road (to Morley Road)	not shown	-	S159	Table Drains along west side of Slashers Road (not shown on GIS) discharging across Morley Road via culvert	Culvert across Morley Road fully silted; o/l flow path currently discharging to "reinforced" slope	2-5	Reinstate cross culvert with inlet protection and discharge to cement reinforced "slope drain" to fire access trail (suggest reconstruction of slope drain)	M
	Morley Av (south side)	D55	-	S161	E Drain (short length) - unclear point of discharge	Not found	6-9	Form table drain on south side of Morley Ave (connect to S159 or create additional discharge to vegetated slope(easement as required)	M
	Sturt Court	-	-	-	No drainage shown (falling towards coastal foreshore)	Although no formal drain is evident an overland path discharges at the end of the road to cleared slope	1	Form small table drain along Sturt Ave and discharge to vegetated slope or slope drain	M

COS - Three Towns Drainage Study
Drainage Infrastructure Appraisal

Separation Creek

Drainage catchment (draining to...)	Local drainage system (inc. GIS references)				Description	Field Observations	Photo Ref.	Recommended Improvements	Priority	
	Location/Road	O/L Drain(s)	Pit/Inlet	Culvert					High(H)	Medium(M) Low(L)
NG_{west}										
Harrington	Harrington / (north side)	D39	P26	S119	Table Drain to culvert appears to continue to toward unnamed culvert	Culvert (S119) discharges via private property towards NG _{west}	67	Provide cross drain relief by discharging into NG _{central}	M	
	Harrington / (north side)	unnamed		unnamed	Table Drain to unnamed culvert discharging to NG _{west} /Separation Ck	Culvert discharges to NG _{west} /Separation Ck	68	Maintain clear entry	M	
NG_{central}										
<i>Major natural gully through township discharging towards the coastal foreshore</i>										
Bass/Harrington	Bass Avenue (north)	D36	-	S105 (Ø225)	Table Drain to culvert under road, discharging to NG _{central}	Cross culvert partially blocked		Reinstate and maintain clear entry to culvert	L	
	Mitchell Av	NG central	-	S112	Road culvert for natural gully	Road culvert for NG _{central} flow path		-		
	Harrington / Mitchell	-	-	S113	Pipe under road junction (?)	Culvert connection to road culvert		-		
Harrington/Olive	Harrington (west side)	D40	-	S123 (Ø375)	Table drain, to culvert under road at main road junction	Drainage from Harrington/Olive combine with and continue along Sarsfield table drain	66, 73	Maintain clear entry/exit to series of cross culverts	M	
	Olive Street	unnamed	-	S130	Table drain along north side of road discharging to natural gully at amin road junction	Drainage from Harrington/Olive combine with and continue along Sarsfield table drain		Maintain clear entry/exit to series of cross culverts	M	
Sarsfield (lower)	Sarsfield Street (north side-east flow)	unnamed	P24	S96	Table Drain, to culvert under road combining with u/s flows - connects to Drain d/s	Drainage from Sarsfield (S96) combines with Harrington/Olive and continues along Sarsfield table drain	71	Maintain clear entry/exit to series of cross culverts	M	
	Sarsfield Street (north side)	D34, D35	-	-	Table drains to low point in road	Cross connection to D32 confirmed				
	Sarsfield Street (south side)	D33	-	-	Table drain towards D32	Drain connects to D32		Redirect some drainage to discharge directly to Separation Ck	L	
	Sarsfield Street (south side)	D32	-	-	Table drain - carrying total catchment flows continues and appears to discharge towards foreshore via private property	Discharge to foreshore via cut drain through private property		Create easement for overland drainage path	M	

Separation Creek

Drainage catchment (draining to...)	Local drainage system (inc. GIS references)				Description	Field Observations	Photo Ref.	Recommended Improvements	Priority High(H) Medium(M) Low(L)
	Location/Road	O/L Drain(s)	Pit/Inlet	Culvert					
NG _{Central}					Small local gully (not well defined) through eastern part of township discharging towards the coastal foreshore				
Mitchell	Mitchell Grove (north side)	D37, D38	P25	S111	Table drain to culvert under road discharging to private property	Discharge to vegetated slope	Create easement for drainage path (confirm flow is towards NG _{Central})	M	
Olive/Sarsfield St	Sarsfield Street (north side-west flow)	unnamed	-	S92	Table drain to end of road, discharging towards foreshore	Discharges under Great Ocean Road to foreshore			
	Olive/Sarsfield St	not shown		S92	Table drain along inside bend	Table drain connects to cross culvert S92 discharging to foreshore			
	Olive St -Sarsfield Street	U/G Drains	Various	7320	u/g pipe drains (300mm) for subdivision	Discharge to foreshore	Connection between table drains and u/g system to be investigated (to reduce load on NG _{East})	M	
	Olive St	D41	P30	S132	Table drain along road to (likely) connection to u/g system	connection to u/g system not clear - drainage discharge to Ngeast	Connection between table drains and u/g system to be investigated (to reduce load on NGeast)	M	
NG _{East}					Small local gully (not well defined) on east edge of township discharging towards the coastal foreshore				
	Mitchell Grove	unnamed		unnamed	Table drain to end of street	Not well defined flow path to vegetated slope	Form discharge flow path to vegetated slope	M	
	Olive St	unnamed	-	S137	Table drain to end of street	Discharging to vegetated slope	Connection between table drains and u/g system to be investigated (to reduce load on NGeast)	M	

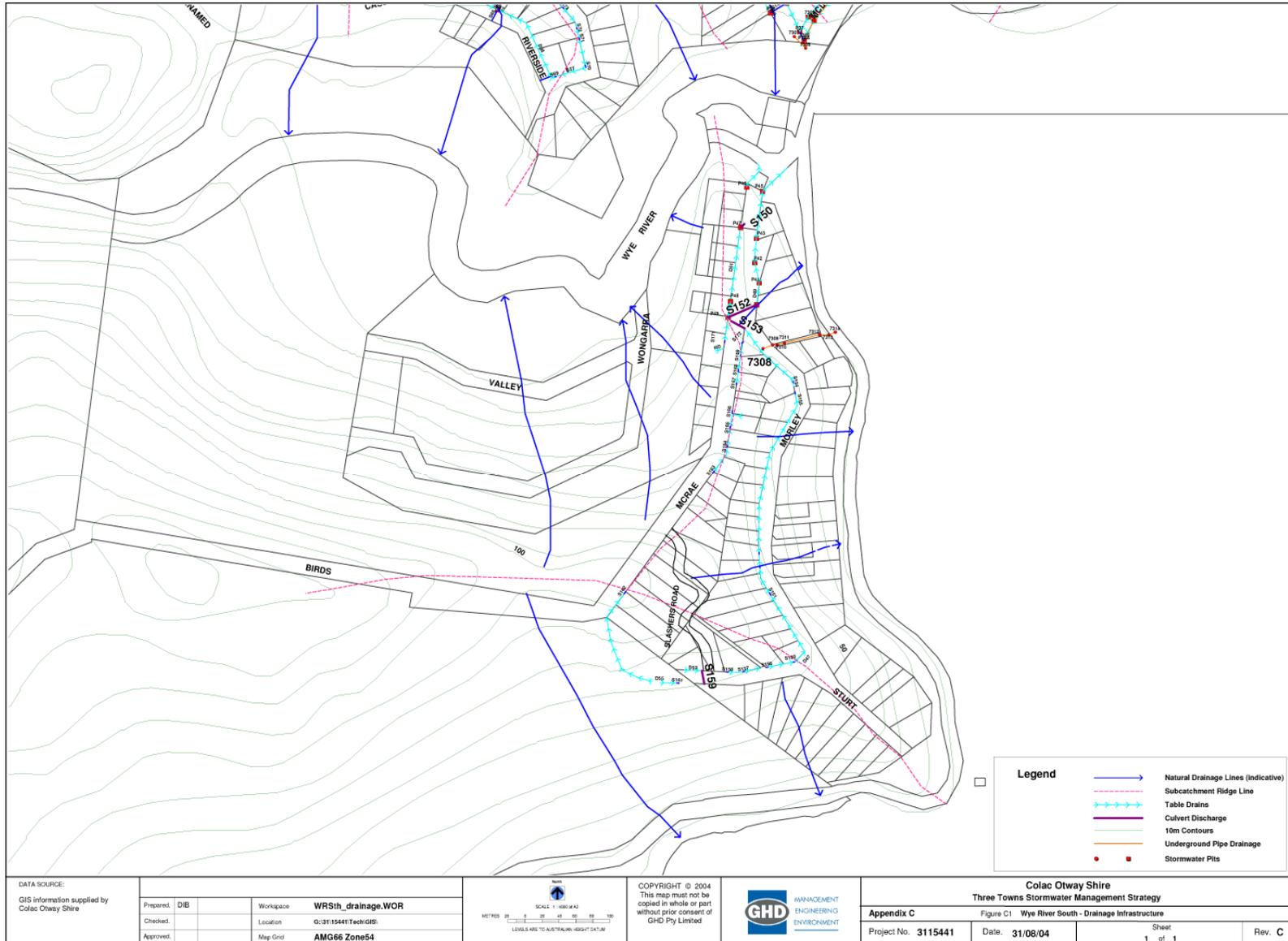
COS - Three Towns Drainage Study
Drainage Infrastructure Appraisal

Kennett River (North)

Drainage catchment (draining to...)	Local drainage system (inc. GIS references)				Description	Field Observations	Photo Ref.	Recommended Improvements	Priority	
	Location/Road	O/L Drain(s)	Pit/Inlet	Culvert					High(H)	Medium(M) Low(L)
NGs										
<i>Natural gullies draining towards Kennett River floodplain on west side of Ridge Road</i>										
Ridge	Ridge Rd	D10	-	S27	Table drain along top of catchment discharging towards Kennett R	Cross culvert discharging to vegetated slope		Maintain clear inlet to cross culverts, and supplement with additional culverts		L
	Ridge Rd	unnamed	P1	S33	Table drain along top of catchment discharging towards Kennett R	Cross culvert discharging to vegetated slope		Maintain clear inlet to cross culverts, and supplement with additional culverts		L
	Ridge Rd	D12	P2	S41	Table drain along top of catchment discharging towards Kennett R	Cross culvert discharging to vegetated slope	63	Maintain clear inlet to cross culverts, and supplement with additional culverts		L
NG_{central}										
<i>Main natural gully through township discharging adjacent to Cassidy Road towards the coastal foreshore</i>										
Cassidy	Ferry Gr	D11	-	S84, S28	Table drain from The Ridge to end of Ferry Crt	Table drain below cross culvert (S27) to end of Ferry Crt discharging to NG _{central}	62	Provide protected drainage path to NG _{central} (create easement for NG _{central})		M
	Cassidy Dr	Unnamed	-	-	Table drain along top of catchment	Low point in Cassidy Road where ponding is expected		Provide cross drain discharge to vegetated slope towards NG _N or creta drainage path and connect to NG _{central}		H
	Cassidy Dr	Unnamed	-	S56	Table drain along inner kerb of road to culvert under road discharging to NG _{central}	Table drain steepen around bend, significant erosion occurring		Relieve drain by providing cross drain discharging towards NG _{NW}		H
	Cassidy Dr	D15	-	S46	Table drain (south flowing) to culvert under road discharging to NG _{central}	No cross culverts evident across road to NG _{central}		Relieve drain with cross culverts directly discharging to NG _{central}		M
	Cassidy Dr	D13	-	S46	Table drain (north flowing) to culvert under road discharging to NG _{central}	Well maintain drain connects to S46	64			
NG_{south}										
<i>Small local gully (not well defined) on south side of township discharging towards the coastal foreshore</i>										
	Cara Crt	Unnamed	-	S45	Table drain from top of Court to low point in road	Discharge into private property		Create easement for discharge flow path		M
	Cassidy Dr	Unnamed	-	-	Table drain to low point in road - unclear point of discharge	not observed				

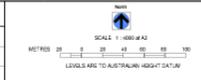
Kennett River (South)

Drainage catchment (road system)	Local drainage system (inc. GIS references)				Description	Field Observations	Photo Ref.	Recommended Improvements	Priority High(H) Medium(M) Low(L)
	Location/Road	O/L Drain(s)	Pit/Inlet	Culvert					
To Kennett River									
(behind) Cantara	Gerard Av/Cantara Cres (behind)			7439	U/G pipe drainage system behind properties discharging to Kennett R (local catchment only)	Discharge to Kennett R		discharge to buffer zone before entry to Kennett R	L
Gerard(south)/Caritara	Gibson Av	D4	various	various	Kerb & channel (concrete) drain to supplement to U/G system (7436)	kerb & channel to u/g system		-	
	Gerard Av	D4	various	various	Kerb & channel (concrete) drain to supplement to U/G system (7436) at lower end of system	kerb & channel to u/g system		-	
	Gerard Av/Cantara Cres			7436	U/G pipe drainage system along road discharging to Kennett R (receives flow from D4)	Discharge to Kennett R		discharge to buffer zone before entry to Kennett R	H
Gerard(north)	Gerard Av		various	various	Kerb & channel (concrete) drain to supplement to U/G system (7436) at lower end of system	kerb & channel to u/g system		-	
	Gerard Av/Hazel crt (b/w)			7435	U/G pipe drainage system discharging to Kennett R (local catchment only)	Discharge to Kennett R		discharge to buffer zone before entry to Kennett R	M
Hazel	Hazel Crt	unnamed	various	various	Kerb & channel (concrete) drain to supplement to U/G system (1711)	kerb & channel to u/g system		-	
	Hazel crt			1711	U/G pipe drainage system discharging to Kennett R (receives flow from unnamed)	Discharge to Kennett R		discharge to buffer zone before entry to Kennett R	M
local	Hazel crt/Joseph Crt (b/w)			7444	U/G pipe drainage system discharging to Kennett R (local catchment only)	Discharge to Kennett R		discharge to buffer zone before entry to Kennett R	L
Hawdon/Joseph	Gibson Av/Hawdon Av	D6, D5	-	S20	Table drain along roads to culvert discharging to U/G system	Cross culvert (s16) has silted up. System appear to connect to u/g system adjacent to Joseph Court	55, 57	Reinstate culvert and provide inlet protection	M
	Joseph Crt & Open Channel drain			unnamed	Parallel u/g pipe systems and open channel flow path in natural gully combine to discharge into Kennett R. (local catchment only)	Connectivity between pipe systems and open channel not clear	56, 60, 61	Connect drainage from this system to wetland or discharge to buffer zone before entry to Kennett R	H
	Joseph crt	unnamed	various	unnamed	Kerb & channel drain for road connecting to U/G system (unnamed)	New drainage infrastructure currently being constructed as part of subdivision			
Hawdon(lower)	Addis Av	D3	various	S8	Table drain along road to culvert discharging under road to system D1	Cross culvert connection to table drain (D1)			
	Hawdon St	D1, D2	962	S1, S2	Table drain (D1) and concrete drain (D2) discharging into u/g drainage system (1612) that enters wetland	Table drain in lower area connects to u/g system via culvert			
	Grey R Rd	D8	962	S2	Table drain along road discharging into U/G drainage system (1612)	Table drain connects to u/g system via culvert		Relieve drain by providing cross culvert discharges downslope across road	L
	Hawdon Av			1612	U/G pipe drainage system discharging to Kennett R via wetland (receives flow from D1, D2, D3, D6)	connectivity to wetland	58, 59		



DATA SOURCE:
GIS information supplied by Colac Otway Shire

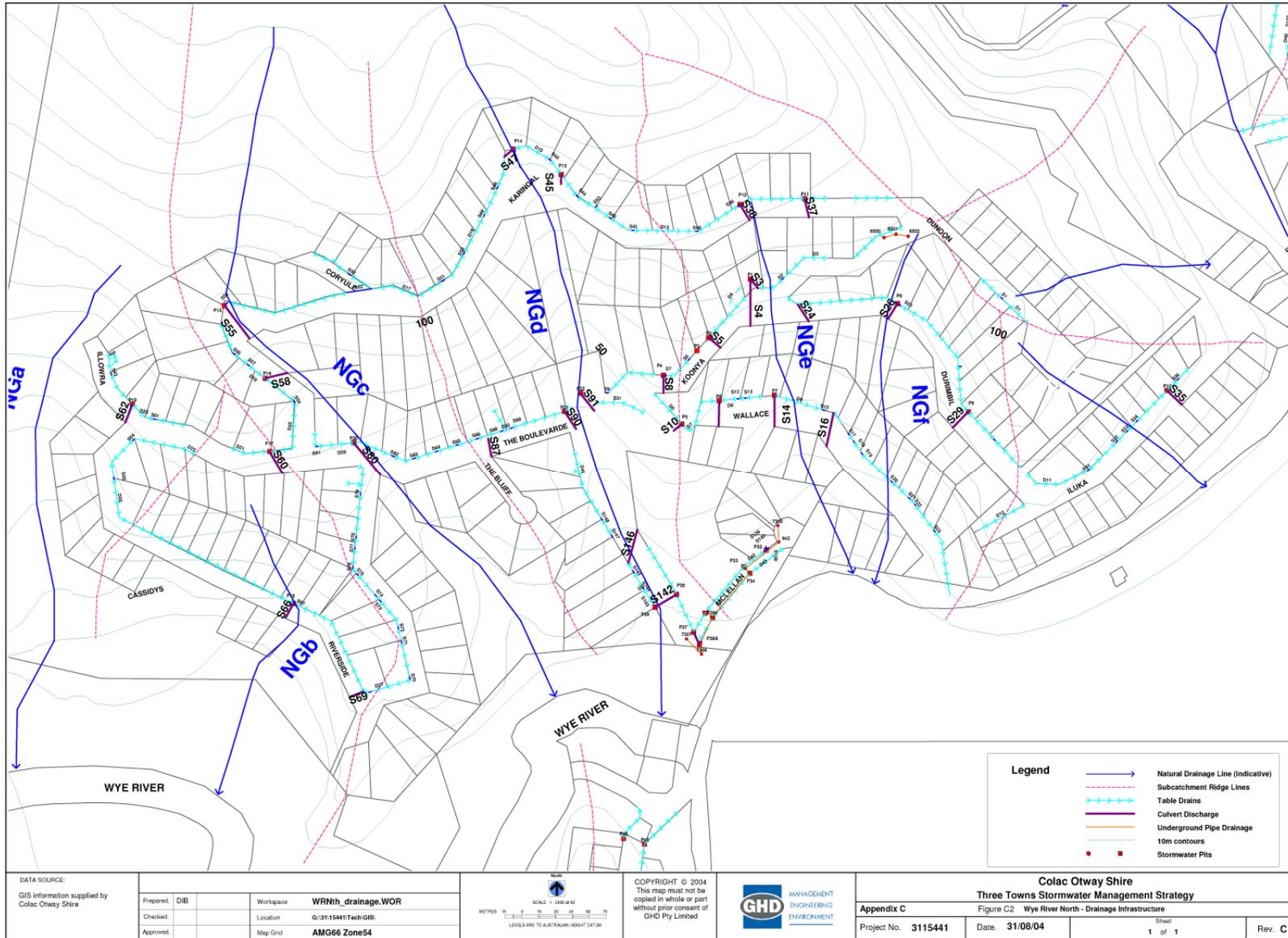
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Approved:		Map Grid:	AMG66 Zone54

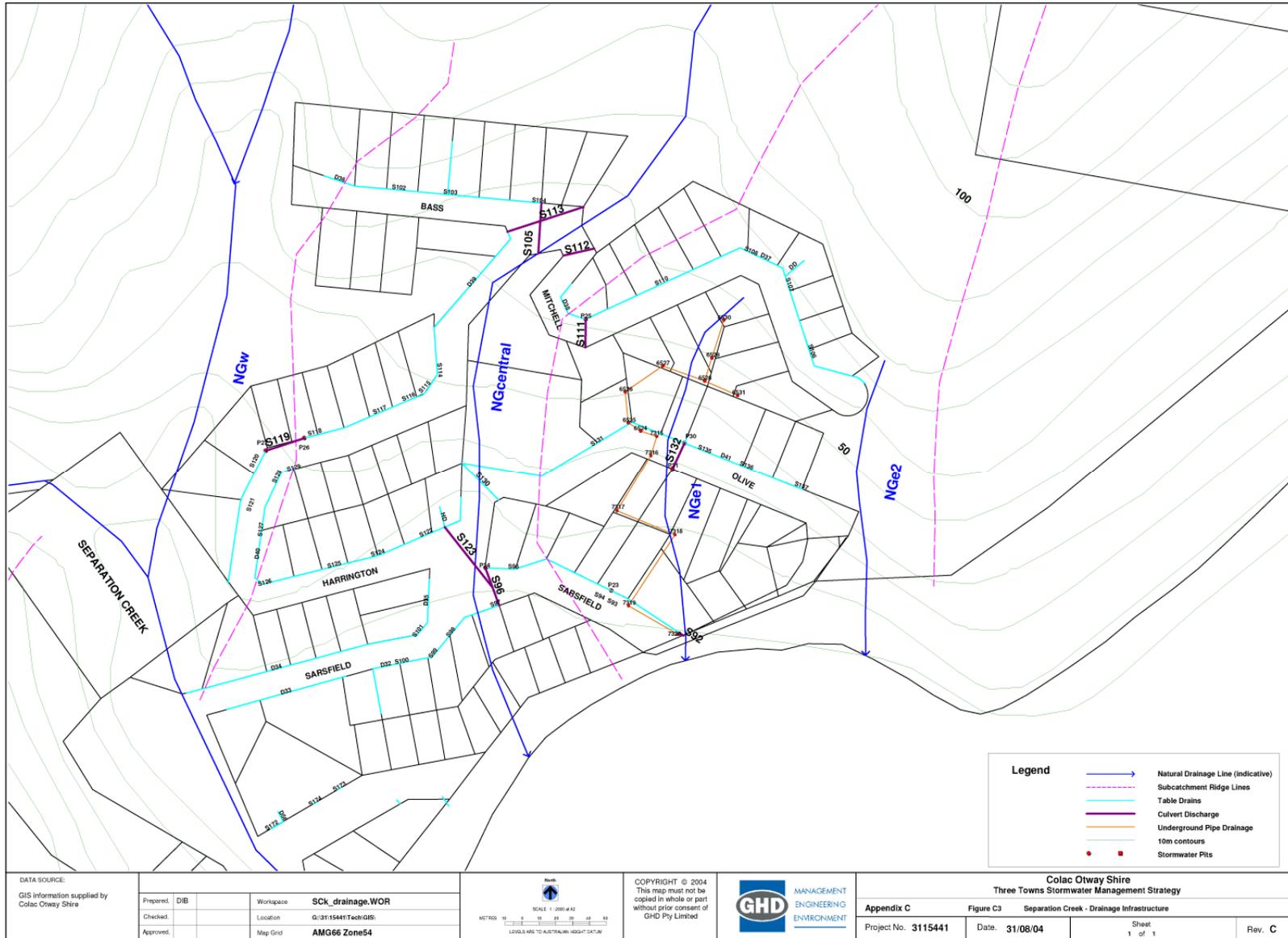


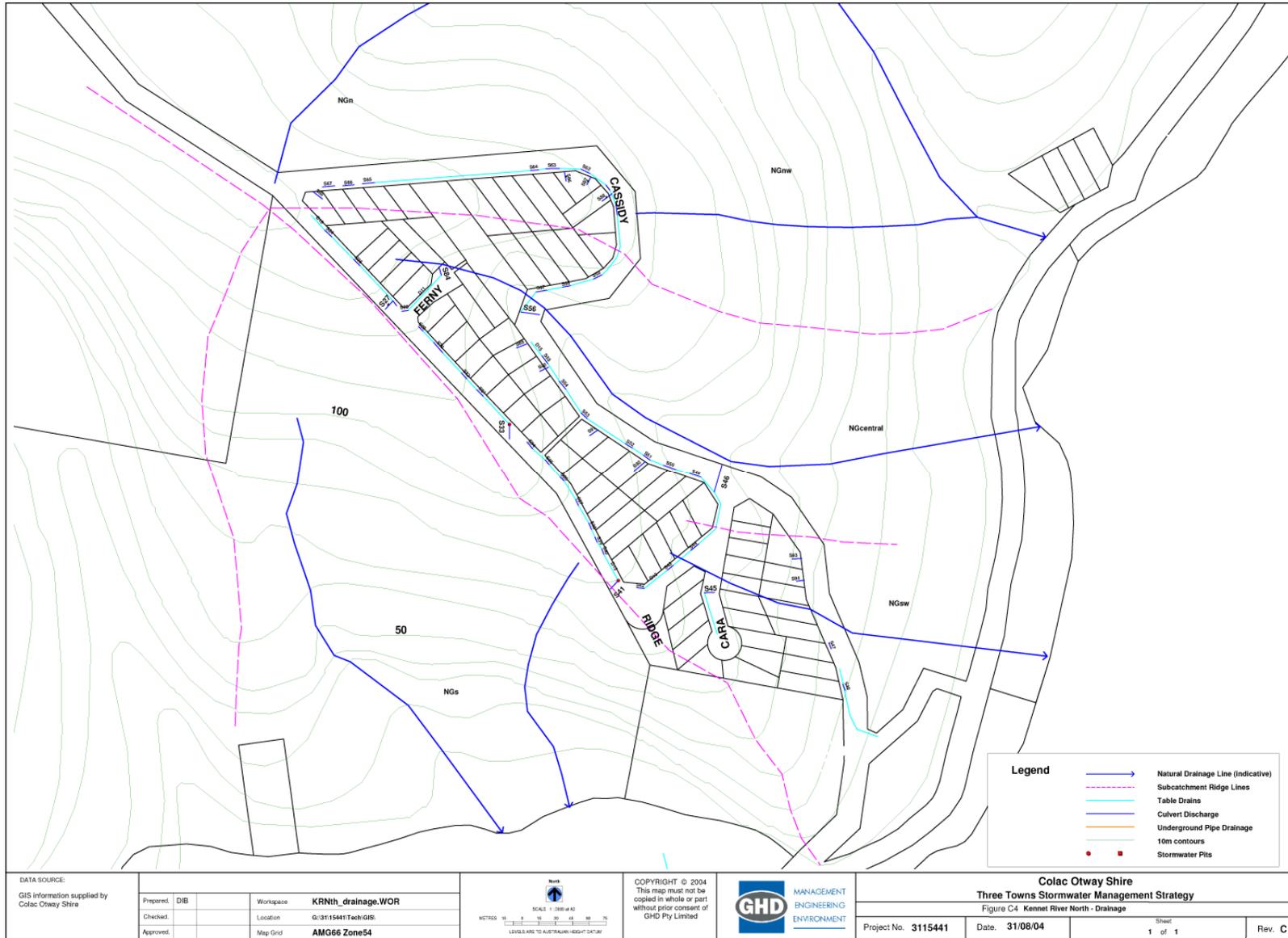
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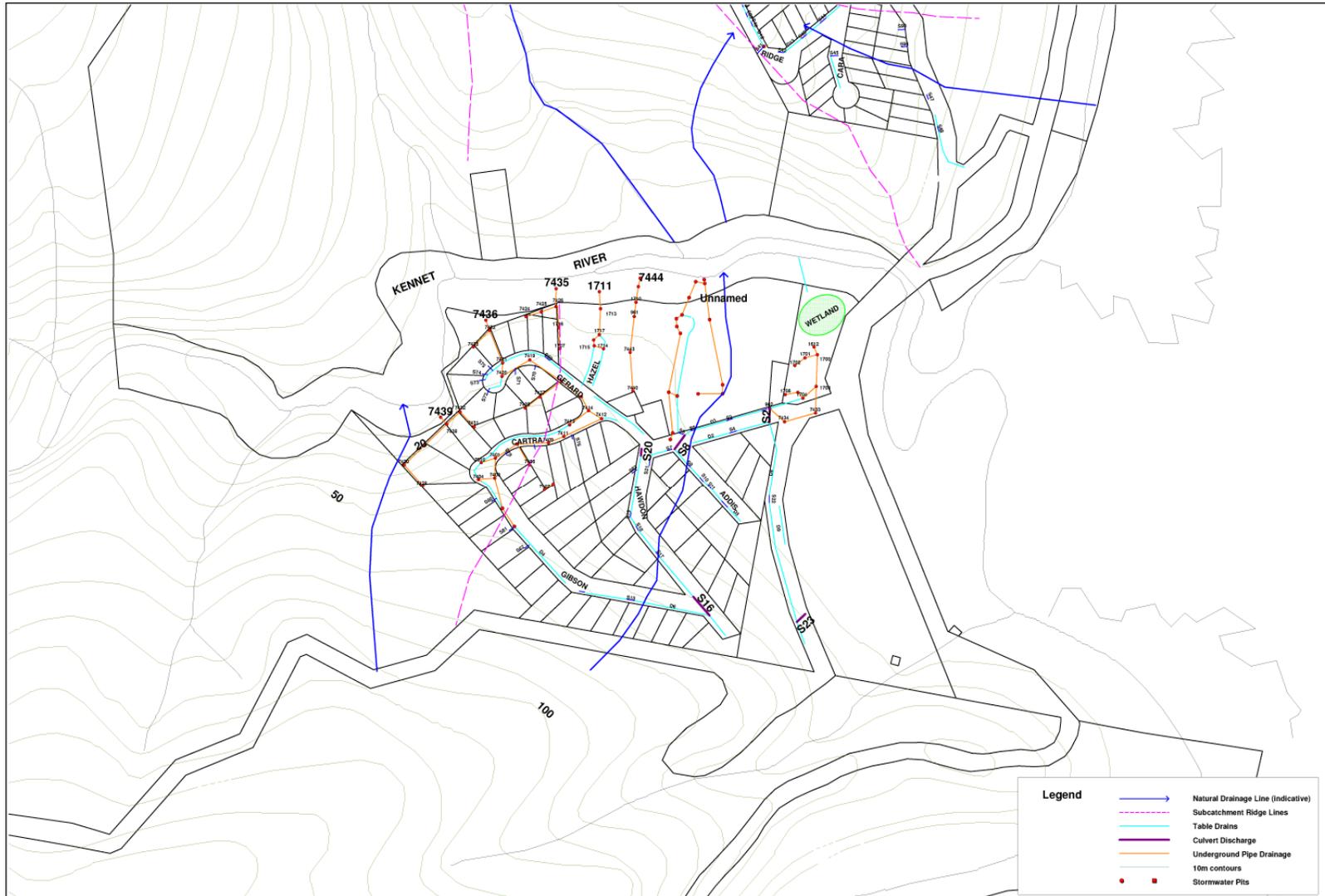


Colac Otway Shire		Three Towns Stormwater Management Strategy	
Appendix C		Figure C1 Wye River South - Drainage Infrastructure	
Project No.	3115441	Date:	31/08/04
		Sheet	1 of 1
		Rev.	C









DATA SOURCE: GIS information supplied by Colac Otway Shire		Prepared: DIB	Workspace: KRSh_drainage.WOR	Copyright © 2004 This map must not be copied in whole or part without prior consent of GHD Pty Limited	Colac Otway Shire Three Towns Stormwater Management Strategy				
Checked:	Location: G:\311544\Tech\GIS	Appendix C Figure C5 Kennet River South - Drainage Infrastructure			Project No. 3115441	Date: 31/08/04	Sheet 1 of 1	Rev. C	
Approved:	Map Grid: AMG66 Zone54	METRES 0 20 40 60 80 100 LEVELS ARE TO AUSTRALIAN-HEIGHT DATUM							

Appendix 2- Wye River and Separation Creek Foreshore Masterplan update 2001

PUBLIC NOTICE AND INVITATION TO COMMENT
WYE RIVER AND SEPARATION CREEK
FORESHORE MASTERPLAN UPDATE
JUNE 2001

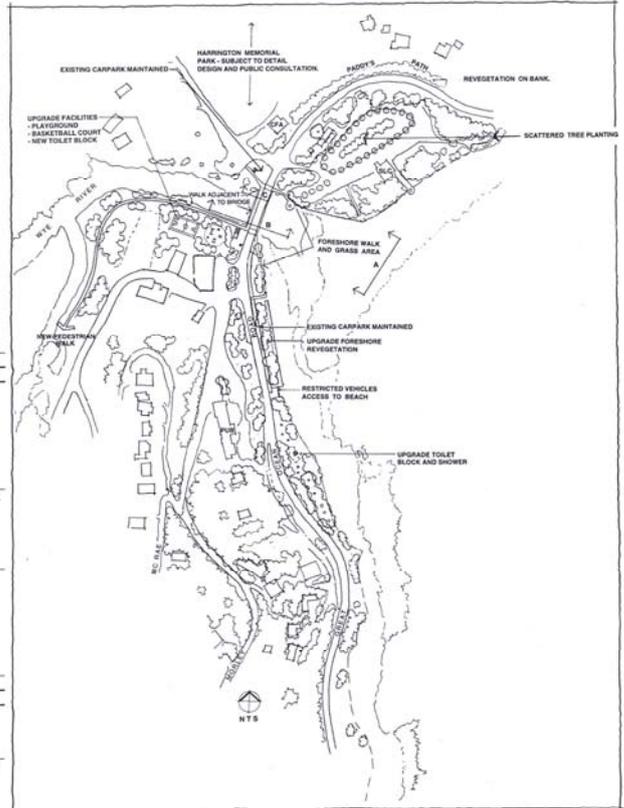
In 1998 the Wye River Foreshore Committee of Management engaged Tract Consultants to undertake a Masterplan for the Wye River region. The adopted Masterplan produced a series of agreed recommendations that would lead to the improvement of the coastal setting.

To date the Committee of Management has addressed/completed a high proportion of the recommendations that came out of the 1998 Masterplan with some works ongoing.

The following board indicates the works completed to date and those proposed for 2001 – 2002.

If you have any comments, or wish to make a submission, please address these to:

Wye River Foreshore Committee
 Attention: Peter Jacobs
 c/o Wye River Post Office
 by 30th June 2001



1998 Recommendations	Progress to Date	Works for 2001 – 2002
1.0 Immediate Recommendations		
1.1 Explore an alternative effluent stormwater disposal system from the Hotel and Foreshore Caravan Park to avoid direct disposal into Wye River.	A reed bed has been trialed and failed. Department of Natural Resources and Environment, Colac Otway Shire and Wye River Foreshore Committee agreed to gravity feed bank with overflow. This was deemed impractical after exhaustive advice found it to be too steep with clay soils preventing absorption.	Installation of pump on foreshore to slotted pipe for dispersal of outflow onto grassed foreshore areas.
1.2 Institute a program of weed removal and planting of indigenous native vegetation for the whole of the foreshore while maintaining views to the water. Hire a qualified horticulturalist to oversee the works.	The program of weed removal has been a major priority. Weed removal has taken place along much of the foreshore including the bank under the Hotel and along Paddy's Path.	Contractors are to be employed to cut black plastic weed mat and plant 100 plants/grasses etc. to exposed areas. Existing plants now need to establish their root systems into the slope and be able to 'breathe'. Ongoing working bees to follow up.
1.3 Reinforce Paddy's Path as well as a year-round walk between Wye River and Separation Creek and allow resources to ensure it remains in a condition suitable to fulfil this purpose. Create a path/boardwalk linking the Caravan Park to the General Store and along the river reserve.	Progress Association has undertaken major works at the beginning of the walk. Most of the Cape Ivy has been removed.	

2001 New Recommendations		
Immediate Recommendations Cont.		
1.4 Continue to weed and clean out bank beneath Country Fire Authority Station, around water tanks and under Surf Club bunkhouse and plant where necessary.	Clean up around Country Fire Authority has begun.	Private contractors have been employed for clean up this winter.
1.5 Upgrade plumbing system within foreshore Caravan Park. Trench all pipes and realign taps to fit newly surveyed camping sites.	Preliminary plans for plumbing grid of Caravan Park have been prepared.	Employ contractor after season has finished to implement plumbing plans.
1.6 Re-survey Camping Reserve. Sites 17 and 18 to be relocated and to become passive recreation.	Plantings and site improvements have been completed.	Area to be landscaped.
1.7 New carpark adjacent to Country Fire Authority Station with tables and chairs.	Carpark redeveloped and landscaped. Bollards installed, 300-400 native plants, and carpark sealed with PyramSeal.	On-going maintenance.
1.8 Foreshore area opposite shop to refill and grass to beach.	Grassed area has established itself. Area requires ongoing maintenance.	Reseed area when done. Gentle slope to beach to maximise public use.
1.9 To finalise and complete stages 1 & 2 of the playground upgrade, which encompasses the start of the river walk, new toilet facilities and a display of historical features of Wye River.	New grassed sloped area established beside cenotaph.	Redevelopment of playground by Jeavons & Jeavons following public consultation earlier this year. Plans when prepared will be displayed for public comment.

1998 Recommendations	Progress to Date	Works for 2001 – 2002
2.0 Medium Term Recommendations		
2.1 Upgrade the toilet block on the foreshore.	The southern toilet block has been refurbished. Works have included the application of anti-graffiti paint inside, bagged external walls, a power connection and garden beds established around the area.	Extended gable roof is planned for the toilet block to create an undercover area.
2.2 Landscape the foreshore and Caravan Park.	Has commenced and is continuing.	Ongoing planting will take place.
2.3 Adopt a common furniture theme (seats, barriers etc) for the whole of the foreshore using the nautical hardwood and concrete themes displayed in the seawall and Wye River bridge.	A common furniture theme has been adopted that takes its inspiration from the timbering past and the wooden poles along the foreshore. This theme is evident in the new BBQ facility and associated tables and seats.	Continue this theme for any new structures built and extend to Separation Creek as recommended in the 1998 Masterplan. Particular issues to be addressed include: - Gravel stairs from Stanway Drive to the Beach, - Replacement of ring lock fencing to bollards and galvanised pipe, in a similar style to Wye River, and - Installation of an information board.

1998 Recommendations	Progress to Date	Works for 2001 – 2002
3.0 Long Term Recommendations		
3.1 (Refer 1.9) Apply for grant to replace old toilet and shower block in foreshore Caravan Park to incorporate toilets/showers/laundry etc. in the one area.	Re-surveying sites to accommodate new amenities block and determine best location for facilities (new entrance to Caravan Park).	New underground plumbing system to be installed. Re-alignment of the taps and electrical poles to suit new configuration of survey. This includes moving the perimeter fence towards the beach 2m and pruning existing vegetation.
3.2 Apply for finance for an all-season boardwalk up Wye River, and to protect wetland area adjacent to playground.	Establishment of start of Riverwalk from shop and newly developed playground and BBQ facilities.	Path to river and boardwalk to Stage 2 of project.
3.3 Provide a multipurpose play space (tennis, basketball court) in the upgraded playground/river reserve area.	An appropriate location for a multipurpose play area was identified in the 1998 Masterplan. This location is adjacent to the proposed upgraded playground and will be suitable for accommodating the youth.	Develop plans for the agreed location.

