

TWIN RIVERS LAND USE PLAN Final Report

May 2012

Prepared For:
East Gippsland Shire Council



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Document status

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Introduction

1.0 Introduction

Meinhardt Infrastructure and Environment Pty Ltd (Meinhardt), in partnership with Essential Economics, was appointed by East Gippsland Shire Council to prepare the Twin Rivers Land Use Plan.

The Land Use Plan provides a land use and development strategy that draws together community views and key information relating to the Twin Rivers region's future development. The project establishes a new planning framework for the region to guide its development over the next 20 years.

The Plan:

- Provides a land supply and demand analysis.
- Establishes guidelines for the timely and coordinated development of the Twin Rivers Region.
- Identifies economic and recreational development opportunities.
- Identifies public works and public realm improvements.
- Make recommendations regarding changes to local planning regulations and other measures that will help achieve long term goals.

The Land Use and Development Plan presented in this document is based on analysis and research undertaken by the Consultant team and information obtained from consultation (comprising a workshop with stakeholders and written feedback from the community). It also builds on previous strategic work undertaken by Council, including the community planning project (*OurPlace, OurPlan, OurFuture*) that is currently underway.

The Land Use and Development Plan consists of three key elements:

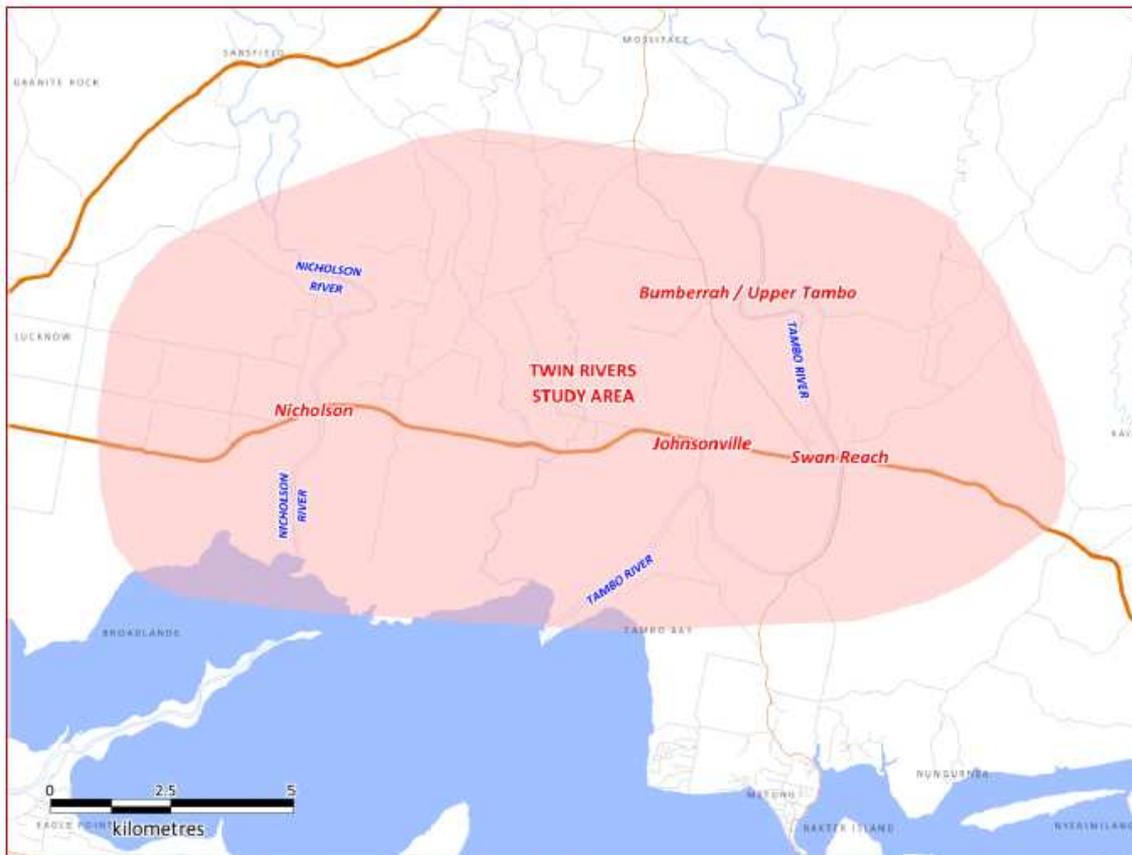
- **Land Supply and Demand Review** outlining evidence of land supply and demand of residential, rural residential, rural living, business and industrial land for the next 20 years, identifying the current stock of vacant zoned land, potential infill and new growth areas.
- **Strategic Framework and Zoning Review** to identify any recommended amendments to the Planning Scheme.
- **Community Structure Plan** that highlights the key attributes of the region and establishes the vision and objectives for development of the area to enhance the community and visitor experience.

1.1 Study Area

The Twin Rivers region is located to the east of Bairnsdale and is generally encompassed by two rivers, the Nicholson River and the Tambo River. Situated in East Gippsland Shire, Twin Rivers includes the three small towns of Nicholson, Johnsonville and Swan Reach, together with the hinterland which surrounds these townships. Smaller settlements of Bumberrah and Tambo sit within the study area

The study area for the Twin Rivers Land Use Plan is shown overleaf in Map 1. It generally includes the Township, Low Density Residential and Rural Living Zones and the farming hinterlands between and surrounding each settlement.

Map 1 – Study Area



Source: Produces by Essential Economic using MapInfo and StreetPro

Townships

Nicholson

Nicholson is a small town located at the junction of the Princes Highway and Nicholson River to the west of the Study area. The town is situated 295 km east of Melbourne between the towns of Bairnsdale and Lakes Entrance and has an estimated resident population of 1,504 people.

Nicholson has considerable recreational attributes with a strong relationship to the Nicholson River, and the East Gippsland Rail Trail which passes across the northern section of the town. Boating and fishing are popular attractions, with boating facilities located adjacent to the Princes Highway to the south.

The town's commercial centre services local community needs while proximity to Bairnsdale provides for the town's higher order community facilities, commercial and retail functions. Civic and Community uses including a Primary School are concentrated east of the Nicholson River, south of the Princess Highway.

Johnsonville

Johnsonville is a small town identifiable by its location at the intersection of the Princess Highway and Sarsfield Tambo Upper Road. The town is located between the towns of Swan Reach to the east, and Nicholson to the west and has a population of 586 people.

The town plays host to a number of tourist-based activities, utilising its position adjacent to the Tambo River and provides boat launching facilities, boat storage, and a caravan park.

A General Store and Service Station provide a central hub for local day to day needs, and the needs of tourists to the region. A Community Hall, tennis courts, and other small highway based businesses are also available. Lakes Entrance and Bairnsdale provide for higher order commercial needs.

Swan Reach

Swan Reach is a small town located to the east of the Study area at the juncture of the Princes Highway and Tambo River. The town is situated approximately 306 kilometres from Melbourne between the townships of Bairnsdale and Lakes Entrance. With a population of 847 people, Swan Reach provides conventional township residential and rural living opportunities.

The town is also served by a Hotel, Service Station, and General Store, and includes a primary school, kindergarten, and sports oval. The town's access to the Tambo River provides for recreational opportunities for boating and fishing and is further supported by tourist accommodation, small galleries, cooking school, and nursery as places of interest .

Regional context

Other nearby towns and settlements, which influence the study area include

- Bairnsdale, to the west.
- Lakes Entrance, to the east.

Given its close proximity to the west, Bairnsdale has a key influence over Nicholson. Johnsonville and Swan Reach are influenced by Lakes Entrance to the south east.

The Princess Highway plays a critical role in linking the region. The former East Gippsland Railway alignment is now occupied by the East Gippsland Rail Trail which provides a walking and cycling link between Bairnsdale, Nicholson, Bruthen, Nowa Nowa, and Orbost. River systems within each town connect via the Gippsland Lakes to the south and provide boating, fishing and other recreation opportunities to the region.

Land Supply and Demand Review

2.0 Land Supply and Demand Review

Essential Economics has undertaken a review of Land Supply and Demand, which comprises the following tasks:

- Demographic and economic assessment for the Twin Rivers Region, including population trends and forecasts, age structure, income, labour force, household size, employment trends, major industries.
- Forecasts of population and dwelling growth for the next 20 years in the Twin Rivers Region and the East Gippsland Shire.
- Assessment of supply of Residential and Low Density Residential zoned land in the Twin Rivers Region.
- Assessment of demand for Residential and Low Density Residential land zoned in the Twin Rivers Region and environs for the next 20 years, having regard to:
 - Population and dwelling forecasts.
 - Assessment of residential market trends, including prices and building trends.
 - Share of demand by residential zone.
- Survey/audit of industrial land, and retail and office floorspace, in the Twin Rivers Region and comment on vacancy rates, available sites, other issues of relevance etc.
- Industrial/commercial/retail floorspace and land forecasts in the Twin Rivers Region and environs over the next 20 years. These will be 'high-level' forecasts based on population forecasts, historical development data, industry consultation, etc.
- Identification of implications for the Land Use Plan, including future land requirements.

The following section provides a summary of the Land Supply and Demand Review. The full version can be found in **Appendix A**.

2.1 Demographic and Economic Context

Twin Rivers contains a population of approximately 2,200 residents (2010 estimate) living in the three towns and the adjoining rural areas. The demographic profile of the residents indicates the region is popular with retirees, while information provided by local real estate agents indicates that both retirees and young families are moving into the area. Currently, only limited employment opportunities exist in Twin Rivers, with nearby towns in Bairnsdale and Lakes Entrance providing the majority of employment opportunities for local residents.

The Land Use Plan will need to consider the type of residential properties sought by both retirees and young families who are looking to move into the area, while maintaining the attractive outlook and rural character which makes this area popular as a place to live.

In addition, an adequate level of local services needs to be provided for both existing and future residents of Twin Rivers. Potential may exist for additional employment opportunities in the area which leverage off the natural characteristics of the region, including both the Nicholson and Tambo Rivers, and the surrounding rural areas.

2.2 Residential Market Assessment

A consistent level of demand for residential property has existed for a number of years in Twin Rivers. Building approvals data indicates that approximately 20 dwellings per annum were developed in the region over the period 2003 to 2010.

Further analysis of building approvals and residential sales data, together with observations of recently- subdivided residential estates, indicates that a significant share of demand for residential lots is for conventional township-style lots. Demand for larger lots appears to supplement the demand for conventional lots, rather than being the major influence on the demand for residential development in the region.

A mix of retirees and young families are seeking to locate in Twin Rivers.

2.3 Forecast Residential Lot Demand

The forecast residential lot demand in Twin Rivers by land use zone is summarised below:

- Township Zoned Land (TZ): Forecast to account for approximately 50% of new dwellings in Twin Rivers over the next 20 years, or an additional 200 (recent trends) to 300 (high growth) new dwellings over the period. This reflects an annual demand for 10-15 new dwellings and compares to an average of 9 new dwelling building approvals over the 2003-2010 period.

- Low Density Residential Zoned Land (LDRZ): Forecast to account for approximately 15% of new dwellings in Twin Rivers over the next 20 years, or an additional 60 (recent trends) to 90 (high growth) new dwellings over the period. This reflects an annual demand for 3-4.5 new dwellings and compares to an average of 2 new dwelling building approvals over the 2003-2010 period.
- Rural Living Zone (Schedule 1 and 2): Forecast to account for approximately 20% of new dwellings in Twin Rivers over the next 20 years, or an additional 80 (recent trends) to 120 (high growth) new dwellings over the period. This reflects an annual demand for 4-6 new dwellings and compares to an average of 5 new dwelling building approvals per year over the 2003-2010 period.

2.4 Residential Lot Supply

A sufficient supply of TZ, LDRZ and RLZ land exists in Twin Rivers to meet forecast demand over the next 20-year planning period, under both the Recent Trends and High Growth demand scenarios. A summary of the supply and demand of residential lots by zone is provided below:

- TZ land: A 25 year supply of residential lots exists on TZ land under the High Growth scenario, which increases to almost 40 years under the Recent Trends scenario.
- Vacant lots and approved subdivisions account for an estimated 7-11 year supply, with the potential lots generated from the subdivision of large vacant lots accounting for an additional 18-27 years supply. It will be important to encourage the subdivision of these lots over time to ensure an adequate supply of lots is available to the market.
- LDRZ land: In excess of 30 years supply of LDRZ land exists in Twin Rivers, including more than 30 years supply of vacant lots and lots in approved subdivisions.
- RLZ land: A 23 year supply of residential lots exists on RLZ land under the High Growth scenario, and this increases to almost 35 years under the Recent Trends scenario. A supply of 8-11 years exists in existing vacant lots, while an additional 15-23 years supply could be generated by the subdivision of large vacant lots.

Note: *It is acknowledged that not all land is appropriate for development for housing. Various constraints exist, which reduce the overall quantum of land available. While these constraints are broadly understood and have been considered, the scope of the study does not extend to an understanding of constraints affecting each individual parcel of land within the Study Area.*

2.5 Commercial Land Considerations

The Land Use Plan should reflect the potential for limited retail and town centre development opportunities on land which is already zoned TZ, and which is vacant and has frontage to the Princes Highway. Furthermore, the Land Use Plan should encourage niche tourism-related development opportunities, particularly in Nicholson and Swan Reach, which benefit from attractive river access and views, and which enjoy exposure to traffic passing along the Princes Highway.

2.6 Summary of Key Findings

The main implications for the Land Use Plan which arise from the analysis presented below:

Implications for the Land Use Plan

Township Zoned Land

- 1) There is unlikely to be a requirement for additional TZ land to accommodate residential development in Twin Rivers over the next 20-year period, provided that large vacant lots are subdivided at an appropriate density in the future. It is noted however that the majority of vacant TZ land is located within Johnsonville and Swan Reach. The Land Use Plan should consider infill additional TZ land in Nicholson to provide smaller lots with access to town services and amenities.
- 2) The development of any additional convenience retail or town centre services in Twin Rivers and which is intended to primarily serve the local population is likely to be limited.
- 3) A limited number of vacant sites with access to the Princes Highway are located within each township and could accommodate limited commercial development. Having regard for these sites, no additional TZ land will be required to support the development of convenience retail or town centre services serving the local population, unless such land is unavailable to the market. In such a case, consideration should be given to zoning additional land for TZ commercial purposes, provided that demand is evident.
- 4) The Land Use Plan should recognise the potential for niche tourism-related development opportunities, particularly in Nicholson and Swan Reach.
- 5) It is unlikely that significant demand for industrial land will eventuate in Twin Rivers in the near future; therefore, no additional TZ land is required to accommodate industrial activities.

- 6) It may be prudent to identify a direction, or potential locations, of preferred growth in the TZ, should any of the following occur:
- The residential lot potential on large vacant or occupied lots cannot be realised in the future.
 - The potential for tourism-related activities is realised.
 - Evidence of demand for commercial development exists and no suitable land is available for development.

Low Density Residential Zoned Land

- 7) The existing level of vacant lots and approved subdivisions on LDRZ in Twin Rivers is sufficient to accommodate demand over the next 20-year period. It is unlikely that additional LDRZ land will be required over this timeframe.

Rural Living Zoned Land

- 8) A sufficient supply of lots exists on RLZ to meet forecast demand over the next 20-year period, provided that the subdivision of large vacant lots occurs.
- 9) Potential exists for a number of the larger lots to be used for farming purposes, and in that case the land might not be subdivided over the next 20-year planning period. Further research into the potential for large vacant and occupied lots to be subdivided in the future may be required.
- 10) The minimum subdivision size for RLZ1 land is 2ha, which is half the minimum subdivision size of RLZ2 land of 4ha. Rezoning parts of the RLZ2 land in Twin Rivers to RLZ1 could encourage the subdivision of this land and contribute to an additional supply of RLZ lots. This should only be entertained where land is located in close proximity to a Township area, and where land is not required for potential future township growth.

Implications for the Future Economic Role of Twin Rivers

The attractive rural outlooks and the Nicholson and Tambo Rivers provide opportunities for tourism in the region. This may include visitor accommodation, food and wine tourism or other nature-based tourism based activities. The success of tourism in the region will depend on the marketing of the region, or particular towns, as tourism destinations.

In view of low levels of resident population, it is unlikely any significant demand for retail, commercial or industrial development will eventuate in Twin Rivers and, therefore, the future economic role of these townships will be based on local convenience services and tourism.

Demand for higher order business and industrial uses is more likely to occur within Bairnsdale and Lakes Entrance which already contain dedicated zones, and the necessary infrastructure and population to support these uses.

There is therefore no current or future forecast need to identify a separate zone for business or industrial purposes within the Twin Rivers Region. These uses will continue utilising the existing suite of zones.

Please refer to **Appendix A** for a full copy of the Land Supply and Demand Review.

Policy and Zoning Review

3.0 Policy and Zoning Review

3.1 Planning Policy Framework

3.1.1 State Planning Policy Framework

The State Planning Policy Framework (SPPF) seeks to ensure that the objectives of Planning in Victoria (as set out in Section 4 of the Planning and Environment Act 1987)

The SPPF establishes land use and development policies and practices which integrate relevant environmental, social and economic factors in the interest of net community benefit and sustainable development. Clauses relating to Settlement, Environment, Housing, Economic Development, Transport, and Infrastructure carry relevance to the preparation of a Land Use Plan.

These policies are summarised in **Appendix B**.

Implications for the Land Use Plan:

- The SPPF establishes that existing and future communities need to be considered through provision of adequately zoned and serviced land for housing, employment, recreation and open space, commercial and community facilities and infrastructure.
- Specifically, the SPPF requires planning to accommodate projected population growth over at least a 15 year period and provide clear direction on locations where growth should occur.

The SPPF also establishes the following key directions of relevance to the Land Use Plan:

- The need to manage land use change and development in rural areas.
- To develop regions and settlements which have a strong identity, are prosperous and are environmental sustainable.
- To assist the protection and, where possible, restoration of catchments, waterways, water bodies, groundwater, and the marine environment.
- The retention of natural drainage corridors with vegetated buffer zones at least 30m wide along waterways to maintain the natural drainage function, stream habitat and wildlife corridors and landscape values, to minimise erosion of stream banks and verges and to reduce polluted surface runoff from adjacent land uses.

- To integrate land use and transport planning around existing and planned declared highways, railways, and principal bus routes.
- To plan for the provision of water supply, sewerage and drainage services that meet State and community needs and protect the environment.

3.2.1 Local Planning Policy Framework

Municipal Strategic Statement (MSS)

The MSS provides a future vision for future land use and development of the East Gippsland Shire. Within the MSS, four key characteristics are recognised as being the most valued by the people of East Gippsland: Natural environment, landscape, sense of community, systems of community facilities and services.

Key objectives and strategies relate to: meeting community needs, economic development and employment, conservation and natural resource management, land use and development. The specific policies and strategies for each of the towns within the Twin Rivers region are outlined in Clause 21.06 and can be found in **Appendix 1**.

The MSS is currently under review. The Twin Rivers Land Use Plan will inform the review of the MSS by updating the vision and role for the Twin Rivers Region.

Implications for the Land Use Plan:

The current and future roles for each town are identified in Council's MSS, which is currently under review. The Land Use Plan will assist in informing the MSS review by providing an opportunity to revisit the roles and function of each town.

Local Policies

There are no local policies that affect the study area. Consideration as to the need for local policies will be considered as part of the outcomes of this review.

Particular Provisions

A variety of specific issues are addressed under the Particular Provisions, some of which are of relevance to the Land Use Plan. These include:

- *Clause 52.05 Advertising Signs*, which seeks to regulate signage and associated structures.
- *Clause 52.11 Home Occupation*, which seeks to ensure that the amenity of the neighbourhood is not adversely affected by an occupation conducted in or from a dwelling.
- *Clause 52.17 Native Vegetation*, which seeks to establish measures to “avoid, minimise, and offset the loss of native vegetation.
- *Clause 52.29 Land Adjacent to a Road Zone...*, which seeks to ensure appropriate access and subdivision adjacent to arterial and main roads.

Implications for the Land Use Plan:

With context to the development of a Land Use Plan for the Twin Rivers region, the Particular Provisions require consideration with regard to matters including:

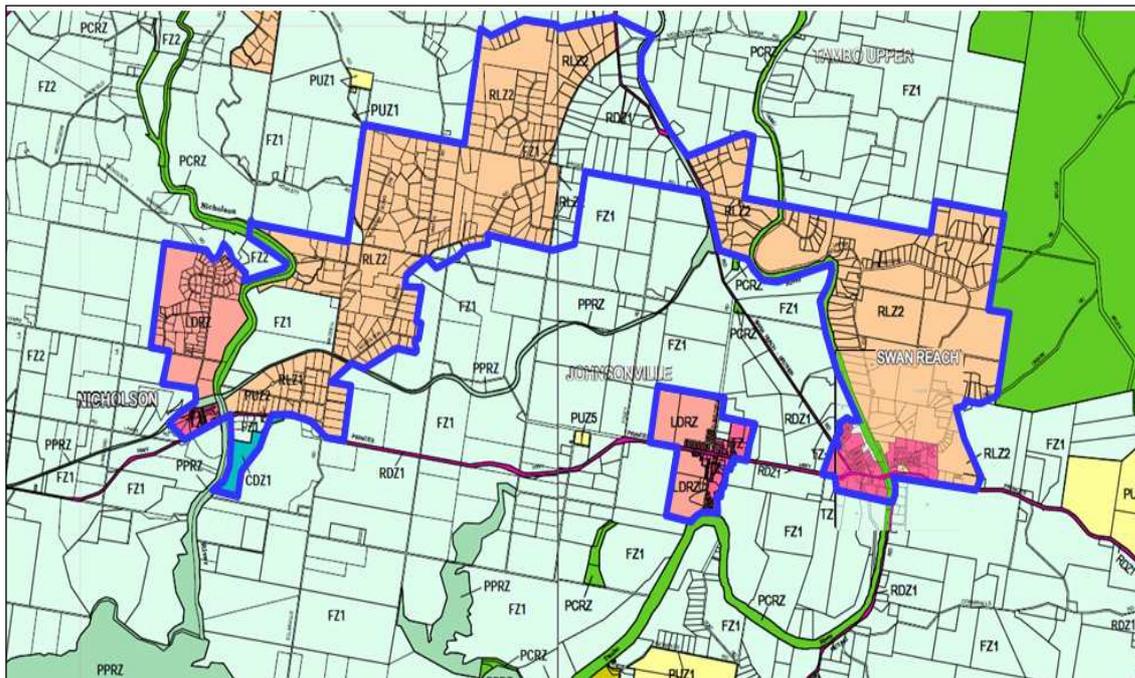
- Ensuring advertising signs are compatible with the amenity and visual appearance of an area, including the existing or desired future character.
- Ensuring that new land uses are compatible with their surrounds.
- Ensuring that the amenity of the neighbourhood is not adversely affected by an occupation conducted in or from a dwelling.
- The protection and conservation of native vegetation to reduce the impact of land and water degradation and provide habitat for plants and animals.
- Ensure appropriate siting and design of new subdivision and development.
- Ensuring appropriate access and subdivision adjacent to Main roads, including the Princes Highway.

3.2 Planning Controls

3.2.1 Zoning and Overlays

The zoning pattern of the Twin Rivers Region is shown in Map 2 below.

Map 2 – Zones affecting the Twin Rivers Study Area



Minimum lot sizes

Critical to the consideration of future growth and development within the Study area are the subdivision provisions which apply within each zone. The minimum subdivision size in each zone is as follows.

Zone	Minimum Lot Size
Township Zone	No minimum specified
Low Density Residential Zone	0.4 hectare
Rural Living Zone – Schedule 1	2 hectares
Rural Living Zone – Schedule 2	4 hectares
Farming Zone – Schedule 1	40 hectares
Farming Zone – Schedule 2	30 hectares
Comprehensive Development Zone	Site specific zone

A summary of Zones and Overlays as they apply to each of the three towns in the Twin Rivers region is provided overleaf. A more detailed summary of the zones and overlays affecting each of the three towns is included in **Appendix B**.

Nicholson

Nicholson's land use and zoning pattern is heavily influenced by the Nicholson River which runs in a north/south direction through the township (which forms part of the old Shire boundary), the former railway and Princes Highway which run in an east/west direction through the town.

Vast tracts of Rural Living Zone land stretch in a north easterly direction, providing lifestyle living opportunities with attractive rural outlooks.

Civic and Community uses are also concentrated east of the Nicholson River, south of the Princess Highway including a school. A site specific Comprehensive Development Zone is located further to the south, but is undeveloped for its intended purpose to provide large scale tourist accommodation or residential use.

West of the Nicholson River, lots are held on a more compact form, reflected by the Township Zoning. Land uses include both local convenience uses, and detached homes. Some developed and undeveloped Low Density Residential Land is located to the north.

Overlays identify environmentally significant and flood prone land, including land within the vicinity of the Nicholson River.

Map 7 – Zoning Map for Nicholson



Zones and Overlays affecting Nicholson

Zones	Overlays
<ul style="list-style-type: none"> • Township Zone (TZ) • Low Density Residential Zone (LDRZ) • Rural Living Zone (RLZ1 & RLZ2) • Farming Zone (FZ) • Comprehensive Development Zone (CDZ1) • Public Park and Recreation Zone (PPRZ) • Public Conservation and Resource Zone (PCRZ) • Public Use Zone (PUZ1 & PUZ2) • Road Zone – Category 1 (RDZ1) 	<ul style="list-style-type: none"> • Land Subject to Inundation Overlay (LSIO) • Design and Development Overlay – Schedule 7 Highway Corridors, Princes Highway & Great Alpine Road (DDO7) • Environmental Significance Overlay – Schedule 29 Sandfords (ESO29) • Environmental Significance Overlay – Schedule 30 Nicholson River (ESO30) • Environmental Significance Overlay – Schedule 31 Nicholson Corridor (ESO31) • Environmental Significance Overlay – Schedule 44 Tambo Upper Corridor (ESO44) • Significant Landscape Overlay – Schedule 2 Gippsland Lakes (SLO2) • Vegetation Protection Overlay – Schedule 1 Tambo-Bairnsdale Roadside Vegetation Protection Network (VPO1) • Erosion Management Overlay (EMO) • Salinity Management Overlay (SMO) • Wildfire Management Overlay (WMO)

Implications for the Land Use Plan:

- Nicholson contains several undeveloped or partially undeveloped subdivisions in the Low Density Residential Zone and Rural Living Zone of a variety of different sizes.
- Urban areas should be defined and consolidated within an urban growth boundary. Any future small lot development should occur where there is access to town services and infrastructure.
- Land zoned Comprehensive Development Zone (CDZ) has remained undeveloped for some time. It is understood that the land can be serviced subject to infrastructure upgrades.
- Anecdotally, it has been suggested that additional Township Zone land may be required in Nicholson in future. Analysis undertaken as part of this project does not indicate an immediate need for the rezoning of land. A direction for future township growth could be identified in the Land Use Plan, (if expansion of the Township Zone is required in future). Onus should remain on the applicant to demonstrate that a rezoning is strategically justified.

- Future development should have strong regard for the protection of environmentally significant areas including corridors of roadside vegetation, streamlines, and habitat corridors. These are most commonly found in Nicholson adjacent to the Princess Highway, Sandfords Lane, Nicholson–Sarsfield Road, Olivers Road, Lanes Road, Whelans Road, Nicholson River, Howlett Road, Ellansville Road, Stephensons Road, Watts Road.
- While a significant asset, the town is split by the Nicholson River. Opportunities to improve connectivity between the township zoned areas on either side of the river should be explored.
- Given the importance of the Princes Highway for access and tourism to the region, development adjacent to this corridor should be carefully considered.
- Opportunities exist to leverage off the Rail Trail (marked PPRZ on the Zoning Map) for recreation, transport, and tourism.

Johnsonville

Johnsonville’s land use and zoning pattern is characterised by its cross-axis with the Princes Highway and Sarsfield-Tambo Road. Small scale local convenience uses, detached dwellings, service station, and community hall form a cluster of town uses within the Township Zone. Vast tracts of undeveloped LDRZ land exist to the east. A significant boat storage business exists south of the Princess Highway in close proximity to the Tambo River further south.

Overlays identify environmentally significant and flood prone land, including land within the vicinity of the Tambo River.

Map 8 – Zoning Map for Johnsonville



Zones and Overlays affecting Johnsonville

Zones	Overlays
<ul style="list-style-type: none"> • Low Density Residential Zone (LDRZ) • Township Zone (TZ) • Farming Zone (FZ) • Public Use Zone (PUZ1 & PUZ5) • Road Zone • Public Conservation and Resource Zone (PCRZ) • Public Park and Recreation Zone (PPRZ) 	<ul style="list-style-type: none"> • Design and Development Overlay –Schedule 7 Highway Corridors, Princes Highway & Great Alpine Road (DDO7) • Environmental Audit Overlay (EAO) • Erosion Management Overlay (EMO) • Environmental Significance Overlay – Schedule 44 Tambo Upper Corridor (ESO44) • Environmental Significance Overlay – Schedule 58 Tambo River (ESO58)

<ul style="list-style-type: none"> • Resource Conservation Zone (RCZ) 	<ul style="list-style-type: none"> • Environmental Significance Overlay – Schedule 63 Rosherville Rd Corridor (ESO63) • Land Subject to Inundation Overlay (LSIO) • Significant Landscape Overlay – Schedule 2 Gippsland Lakes (SLO2) • Salinity Management Overlay (SMO) • Vegetation Protection Overlay – Schedule 1 Tambo-Bairnsdale Roadside Vegetation Protection Network (VPO1) • Wildfire Management Overlay (WMO)
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Implications for the Land Use Plan:

- While relatively contained around a cross intersection, Johnsonville contains undeveloped LDRZ land to its west. Johnsonville may benefit from an Urban Growth Boundary to provide clear direction and prevent inappropriate future urban use and development.
- Future development should have strong regard for the protection of environmentally significant areas including corridors of roadside vegetation, streamlines, and habitat corridors. These are most commonly found in Johnsonville in on the Princes Highway, Bumberrah Road, and the Tambo River.
- Given the importance of the Princes Highway for access and tourism to the region, development adjacent to this corridor should be carefully considered.
- Linkages to the Princes Highway, Tambo River, and Swan Reach remain critical. The feasibility to provide a link to the Rail trail to the north should be examined.

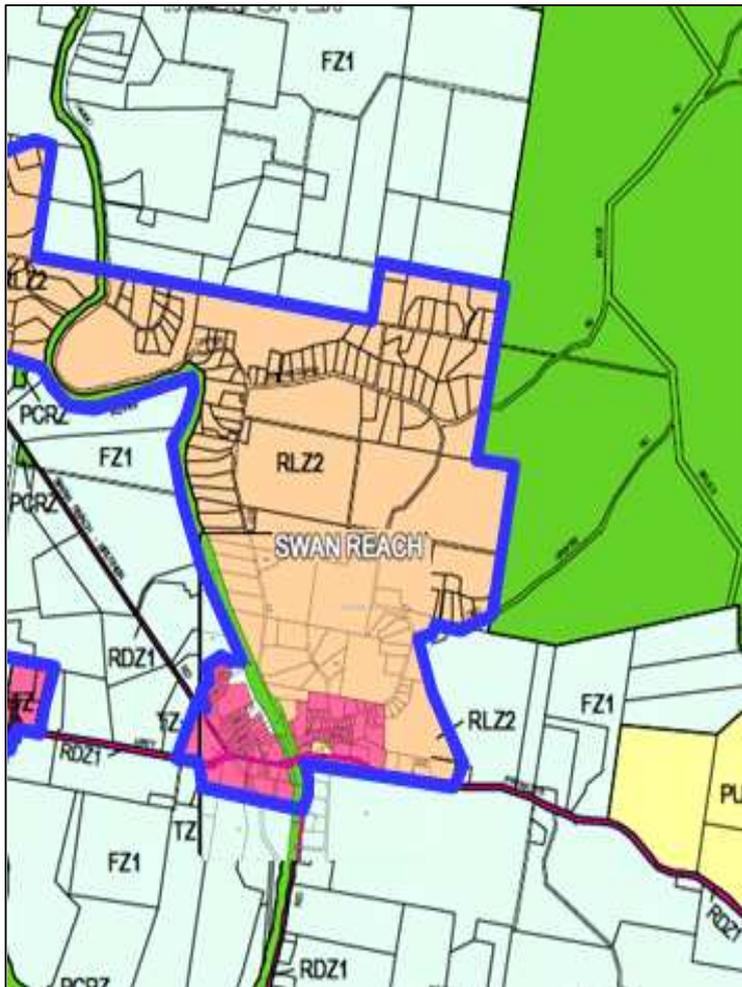
Swan Reach

Swan Reach's land use and zoning pattern is influenced by the Tambo River which runs in an approximate north/south direction, and the Princes Highway running east/west. Significant tracts of Rural Living Zone land span north – to north east towards Bumberrah. This includes both developed and undeveloped parcels of land. Steep topography provides an attractive rural landscape with stunning views, particularly to the south and towards the Tambo River. Many small lots have been created on ridgelines or along the Tambo River to take advantage of this outlook.

More conventional sized residential lots, small scale commercial premises, and school are located in the Township Zone which is centered around the juncture of the Princess Highway and Mossface-Swan Reach Road.

Overlays identify environmentally significant and flood prone land, including land within the vicinity of the Tambo River.

Map 9 – Zoning Map for Swan Reach



Zones and Overlays affecting Swan Reach

Zones	Overlays
<ul style="list-style-type: none"> • Township Zone (TZ) • Rural Living Zone (RLZ2) • Farming Zone (FZ) • Public Use Zone (PUZ1 & PUZ2) • Road Zone • Public Conservation and Resource Zone (PCRZ) • Public Park and Recreation Zone (PPRZ) 	<ul style="list-style-type: none"> • Design and Development Overlay –Schedule 7 Highway Corridors, Princes Highway & Great Alpine Road (DDO7) • Erosion Management Overlay (EMO) • Environmental Significance Overlay – Schedule 44 Tambo Upper Corridor (ESO44) • Environmental Significance Overlay – Schedule 58 Tambo River (ESO58) • Environmental Significance Overlay – Schedule 63 Rosherville Rd Corridor (ESO63) • Land Subject to Inundation Overlay (LSIO) • Significant Landscape Overlay – Schedule 3 Metung and Lakes Entrance Hills (SLO3) • Vegetation Protection Overlay – Schedule 1 Tambo-Bairnsdale Roadside Vegetation Protection Network (VPO1) • Wildfire Management Overlay (WMO)

Implications for the Land Use Plan:

- Land use and development is fragmented, with a large proportion of Rural Living Zoned land located significant distance from the town. Containment initiatives such as an urban growth boundary need to be explored.
- While a significant asset, the town is split by the Tambo River. Opportunities to improve connectivity between the township zoned areas on either side of the river should be explored.
- Topography, landscape, and environmental attributes all provide both opportunities and constraints to future use and development in the town.
- Future development should have strong regard for the protection of environmentally significant areas including corridors of roadside vegetation, streamlines, and habitat corridors. These are most commonly found in Swan Reach nearest the Tambo River, Princess Highway, Mossiface-Swan Reach Road, Cunningham Road, and Old Orbost road.
- Further use and development within the Wildfire Management Overlay northeast of the town should be carefully considered.
- Given its close proximity to the west, linkages to nearby Johnsonville should be explored.
- Given the importance of the Princes Highway for access and tourism to the region, development adjacent to this corridor should be carefully considered.

Strategic Framework

4.0 Strategic Framework

4.1 Literature Review

The following documents and strategies have been reviewed as part of the research phase of the project:

- East Gippsland Strategic Tourism Plan Report 2006 – 2011 Part A: Strategic Tourism Plan
- East Gippsland Community Wellbeing Plan 2009 - 2013
- East Gippsland Positive Ageing Strategy 2010 – 2013
- East Gippsland Disability Action Plan 2007 - 2009
- East Gippsland Economic Development Strategic Plan
- East Gippsland Municipal Early Years Plan 2009 - 2013
- East Gippsland Five Year Arts & Culture Strategic Plan
- East Gippsland Shire Council Plan 2009 - 13
- East Gippsland Unlocking the Future – Long Term Community Vision 2030

Implications for the Land Use Plan:

The above documents relate to objectives for East Gippsland Shire as a whole. Many of the sentiments expressed in the East Gippsland - Long Term Community Vision 2030 can be seen to resonate with particular parts of this Review, particularly the need to establish clear and shared expectations and roles for towns within the Twin Rivers Region.

It is evident that there has been little strategic work undertaken previously which is specific to the Study Area (which is a situation common amongst small regional towns within Victoria). The Land Use Plan should seek to identify future community needs and the types of use and development which may be required to support these needs.

4.2 Strategic/Broad Issues

In preparing this report, consideration has been given to a broad range of broad, “global” issues and potential impacts which may influence the future of the Twin Rivers Region over the next 20 years. These include influences such as; Climate change, Peak Oil and pressure on energy resources; Changes in population size, age structure and diversity; and Changes in agricultural practices. A short description of each and their context to the Land Use Plan is provided below:

Climate Change

Climate change refers to the unnatural warming of the planet through human generated greenhouse gas emissions. Managing land use and development in order to provide a ‘quality of life’ for the present community, without comprising the opportunities for future populations is, and will continue to be a huge challenge for towns and regions. The long-term effects of climate change (while not fully understood) will likely increase environmental volatility, causing wide reaching and severe implications. There are a number of possible impacts of climate change. The Land Use Plan will consider these at a broad level as the basis for developing sustainable policy and strategy.

Peak Oil

Peak oil refers to the point that oil production will reach its maximum capacity and thereafter diminish in the future. It does not mean that oil will run out immediately, but rather that it will slowly become less accessible, both physically and economically. Given the dependence on oil to maintain and operate various urban and rural systems, a future with less oil would have significant structural implications. Strategies contained within the Land Use Plan will be cognizant of possible impacts on transport, energy, agriculture, and settlement and housing patterns.

Changes in population size, age structure and diversity

Australia’s population is rapidly increasing. Immigration now accounts for a significant portion of Australia’s population growth. There is also a broad desire for more urbanised form as of living. Whilst Australia and Melbourne’s population is rapidly increasing, this does not currently translate to population growth within regional or rural areas. The Land Use Plan will consider forecast population increases at a local level, and other influences on population, age, and structure. This will in-turn influence the development of appropriate policy and strategy to address future housing, commercial, recreation, and community service needs.

Changes in Agricultural Practices

Agriculture is a major industry within East Gippsland Shire. With the advent of pressures such as climate change, and peak oil, this may force a number of changes in the agricultural sector, influencing the way in which land is used and developed. The Land Use Plan will consider these pressures, and seek to identify sustainable opportunities for employment for the future. This includes identifying particular “niche” agricultural roles that the Twin Rivers region can play in future.

Implications for the Land Use Plan:

- The impacts of these broad issues may not manifest or be seen over the short-term. They may therefore not be universally accepted by all as “likely”.
- It should be acknowledged that the Land Use Plan will not provide solutions to these complex issues.
- The Land Use Plan should seek to acknowledge the wide range of future challenges which may be ahead and consider them as at least “possible”. This will assist in shaping appropriate policy and strategy for the future which is robust and adaptable

4.3 *Natural Environment and Heritage*

Flora and Fauna

- Dense vegetation cover exists predominately to the north of the study area. Mature tree cover, including copses and linked vegetation corridors can be found in Swan Reach and Johnsonville, and along watercourses. A lesser extent of mature tree cover exists in Nicholson.
- Ecological Vegetation classes (EVC’s) have been identified by the *Department of Sustainability and Environment* including Water Body’s, Plains Grassy Forest, Flood Plain Reedbeds, Swamp Scrub, and Dry Valley Forest Swamp.
- A broad analysis of threatened Flora and Fauna species has been undertaken by the *Department of Sustainability and Environment*. Threatened Flora and Fauna species have been identified as present within the study area.

Please refer to EVC, and Flora and Fauna mapping provided within **Appendix D**.

Hydrology

- The Study area contains significant watercourses, drainage lines and wetlands.
- Land subject to inundation is mapped within the East Gippsland Planning Scheme and generally follows land adjacent to watercourses, and some low lying wetland areas south of Nicholson. Minor flooding was observed within the vicinity of watercourses during consultant team field visit. This included minor flooding of the Nicholson Jetty.
- The Nicholson River, and some land adjoining the river are declared as a Ramsar Wetland. Important wetlands also exist to the south and west of Nicholson.

Please refer to Hydrology mapping provided within **Appendix D**. Updated flood mapping has been prepared and is currently being considered as the basis of an update to the Planning Scheme. This information will be considered as part of the final Land Use Plan.

Cultural Heritage

- Places of Aboriginal cultural heritage include spiritual or ceremonial significance, places where traditional plant or mineral resources occur, or trade and travel routes are protected under the Aboriginal Heritage Act 2006. Areas of cultural heritage sensitivity within the study area are mapped. This generally includes land within 200 metres of a watercourse, drainage line, or wetland. Significant proportions of the towns of Nicholson and Swan Reach are identified, including private land.
- Future development of these areas (in particular) would be subject to the preparation of a Cultural Heritage Management Plan prior to future development.

Please refer Cultural Sensitivity Map provided in **Appendix D**.

Implications for the Land Use Plan:

The land use plan needs to consider the natural attributes and heritage attributes of the land. Known constraints have been identified, based on existing information and consultation with relevant authorities and stakeholders. This will assist in shaping strategy at a broad strategic level. Natural and heritage constraints are mostly present in the form of:

- Flooding and land subject to inundation on land adjacent to watercourses, as generally defined by the Land Subject to Inundation Overlay, and flood mapping.
- Fire Risk, particularly north of the study area is generally shown by the extent of the Wildfire Management Overlay (WMO).

- Dense vegetation, particularly north of the study area.
- Areas of cultural heritage

This is a broad analysis of the major constraints affecting land. It would be expected that future developers would be required to undertake more detailed technical studies on individual parcels of land to determine the actual extent of natural attributes and development constraints affecting the land.

4.4 Infrastructure

Infrastructure investigations have been carried out to identify current capacity and likely supply issues in each of the three Twin Rivers towns. An infrastructure analysis is provided in

Appendix F. Findings of the analysis may be summarised as follows:

- Reticulation sewers service the existing township areas. Septic systems are utilised on larger lots. Some sewer capacity exists within the township areas.
- Existing water mains appear to service most residential streets.
- No gas reticulation exists at present. There is a proposal to bring gas to Lakes Entrance, however this is not expected in the short term and the study area is thought to be too small to warrant an additional gas supply main.
- Telecommunications and electricity are generally available along major roadways within the Study area. There is no access to fibre optic cable.
- Infill development would reduce the need for significant upgrades to infrastructure.
- Water, Sewage, and Drainage upgrades in particular would be required to support outward expansion of the town. Utilisation of existing drainage lines may be possible for infill development and minor subdivisions with requirements for discharge restrictions and temporary on site storage. Larger developments, and development in proximity rivers would be expected to require new / upgraded drainage infrastructure with incorporation of Water Sensitive Urban Design (WSUD) features (i.e. wetlands or rain gardens)
- New septic tanks are to be no closer than 60m to any watercourse, including ephemeral waterways and dams. This distance may be reduced to 30m if effluent is pre treated on site.

-
- Development generally requires sewer connection where an existing sewer network is 'available'. This is to be confirmed on a site specific basis with the Shire and potential input from East Gippsland Water. New or infill township development is likely to require sewer connection.

Consultation

5.0 Stakeholder Consultation

The Land Use Plan for Twin Rivers provides an opportunity to work with key community stakeholders to understand and determine priorities for the three towns and region as a whole. Through the sharing of ideas, and an understanding of the constraints and opportunities, the Land Use Plan will seek to align stakeholder priorities with Council's (as best possible) and provide an agreed way forward.

In preparing this report, a number of important consultation initiatives have been undertaken, including:

- Distribution of *Project Newsletter 1* to introduce the project and request for views on key issues confronting the region.
- The establishment of a stakeholder database, which has been used to communicate with those who have an interest in the project.
- A Strengths, Weaknesses, Opportunities and Threats (SWOT) workshop with key stakeholders.
- Consultant site visits.
- Meetings and discussions with Council officers.
- Meetings and discussions with key stakeholders.
- Distribution of *Project Newsletter 2* confirming outcomes from SWOT process.
- Distribution of *Project Newsletter 3* to obtain further information on selected key issues confronting the region.

A summary of feedback received from the initial consultation is included in **Appendix E**.

Community Plan (*OurPlace, OurPlan, OurFuture*)

Community consultation is also occurring as part of the Community Planning project, which will result in the preparation of a Community Plan for the Twin Rivers region. Many of the issues raised at the Community Forum held on 16 November 2010 ratify the information obtained by the consultant team and outlined in **Appendix E**.

Implications for the Land Use Plan:

- The region has a strong relationship to river systems, a main tourist highway, nearby towns, and many surrounding natural assets in providing opportunities for recreation and tourism.
- There is a need to review and re-affirm the roles of each town and the region as a whole.
- Providing opportunities for future growth but directing this future growth in strategic locations, away from environmentally significant or constrained areas.
- The strongest single theme for the community was pedestrian and motorist safety regarding the Princes Highway.
- Areas for improvement included:
 - Examining critical infrastructure which is required to meet current and future needs.
 - Planning for children, including play areas and a skatepark.
 - Support for tourists, toilets (including disabled toilet access).
 - Marketing of the area, better promotion of townships.
 - Improved public signage

Response to key planning issues

6.0 Response to key planning issues

A number of key planning issues have emerged as a result of consultant analysis and initial stakeholder consultation. Each requires resolution through the Land Use Plan. Once identified, these issues were further tested through Project Newsletter 3, which sought community and stakeholder feedback. A response to these issues is provided below.

6.1 Context

The Twin Rivers Region has an attractive rural setting which is important to its character, identity and sense of place. This setting is highly valued by local residents and visitors alike. The protection of this natural setting is, and will continue to be integral to the preservation of residential amenity, tourism, and prosperity of the region.

Analysis undertaken to date would suggest strategic planning for a limited growth scenario, building upon the key strengths of the region. It is therefore not proposed that significant changes to zone boundaries are required to facilitate growth and investment over the next 20 year period.

Residential growth and change should be facilitated through the preparation of clear policy and direction in a number of key areas. These are identified in response to the key issues below.

Due to the size and proximity of the townships contained within the Study Area, the Land Use Plan should acknowledge that Bairnsdale and Lakes Entrance will continue to provide for higher order employment opportunities. The Land Use Plan should however seek to encourage and support employment and business opportunities within the Twin Rivers region in some key areas, including:

- Niche tourism, which may include:
 - “Agritourism” utilising the region’s access to food and produce.
 - Leisure and Recreation – fishing, boating, rowing, walking, cycling.
- Some short stay accommodation targeted at tourists.
- Convenience retail to service the local community.

The response to key planning issues in the Twin Rivers Region is made with the above context in mind.

6.2 Amenity protection

No formal industrial / business zoned areas exist within the Twin Rivers Region. Logistic / Transport or Warehouse / Storage type uses are scattered amongst the region, with a concentration of service and commercial uses within each town centre.

Consultation with a wide variety of stakeholders has revealed a strong share of home based businesses operating in the region. These uses are not confined to the Township Zone, and are also dispersed across the study area.

The protection of residential amenity has been identified as an issue requiring some form of resolution through the Land Use Plan. Off-site amenity impacts associated with business or industrial uses can include: visual impacts associated with buildings, equipment, and signage, and noise impacts associated with vehicle movement, and storage.

It has been identified that there is no current or future forecast need to define a separate zone for business or industrial purposes within the Twin Rivers Region. Therefore, consideration should be given to provide ongoing support for current and future businesses in the Twin Rivers Region, and protection of the natural setting. This could be achieved through strategies which seek to:

- Protect views from the Princes Highway – a major tourist route.
- Protect significant landscapes and corridors of vegetation which are highly valued and contribute to the sense of place, character, and identity of the Twin Rivers Region.
- Ensure appropriate access and movement to significant trip generators.
- Provide appropriate signage for business or home based business uses.
- The establishment of guidelines, information and a register for Home Based Businesses operating in the region, which draw upon the Statutory Provisions of Clause 52.11 – Home Occupation.
- Enforcement of the provisions of Clause 52.11 – Home Occupation.

6.3 Land use conflict

Land use conflict between urban and non-urban uses has been identified as a planning issue requiring resolution through the Land Use Plan.

Planning conventions and systems do not allow for a retrospective approach to resolving land use conflict. Instead, clear focus should be to identify measures and strategies which reduce the likelihood of future conflicts occurring. This can be achieved by:

- Applying an Urban Growth Boundary clearly identifying urban and non-urban land.
- Ensuring that new development in the LDRZ, RLZ, and TZ within the vicinity of the Farm Zone has regard to the ongoing protection of agricultural land and agricultural activities.
- Identifying sensitive interfaces between urban and non-urban uses within each town which may require buffers, landscape treatments or particular design controls for new development.
- Clearly identifying and protecting high quality agricultural land in the Farm Zone from inappropriate subdivision, use, and development.
- More informal measures, including community education about living in the Rural Living Zone.

6.4 Growth Management

Growth management has been identified as a key issue requiring resolution through the Land Use Plan. Direction is required to set clear (shared) expectations about how and where the region will look in future. This should include:

- Reviewing the role and function of each town, making amendments to Clause 21 of the Planning Scheme where required.
- Using existing zone boundaries around the Township and Low Density Residential Zone to formulate a definitive boundary between urban and non-urban land. The Urban Growth Boundary should provide a clear indication to prospective purchasers, developers and investors as to where future urban growth is to occur.
- Providing a direction for future Township growth in Nicholson, if this is required in future. Analysis does not indicate an immediate need for the rezoning of land. Onus should remain on the applicant to demonstrate that a rezoning is strategically justified.
- Acknowledging the role of the Rural Living Zone in providing opportunities for small lot residential living in a rural environment. The minimum subdivision size for RLZ1 land is 2ha, which is half the minimum subdivision size of RLZ2 land of 4ha. Rezoning parts of the RLZ2 land in Twin Rivers to RLZ1 could encourage the subdivision of this land and contribute to an additional supply of RLZ lots. This

should only be entertained where land is located in close proximity to a Township area, and where land is not required for potential future township growth.

- Acknowledging the role of the Farm Zone in providing opportunities for agricultural land use.

The Community Structure Plan has been developed to include strategies and further direction in regards to each of these key issues.

Community Structure Plan

7.0 Twin Rivers Community Structure Plan

The Twin Rivers region is located to the east of Bairnsdale and is generally encompassed by two rivers, the Nicholson River and the Tambo River. Situated in East Gippsland Shire, Twin Rivers includes the three small towns of Nicholson, Johnsonville and Swan Reach, together with the hinterland which surrounds these townships. Smaller settlements of Bumberrah and Tambo Upper sit within the study area.

A Community Structure Plan has been prepared in conjunction with the Twin Rivers Community to establish:

- *Guidelines for the timely and coordinated development of the Twin Rivers Region.*
- *Economic and recreational development opportunities.*
- *Public works and public realm improvements.*
- *Recommendations regarding changes to local planning regulations and other measures that will help achieve long term goals.*

These are set out below and overleaf.

7.1 Vision for the Twin Rivers Region

“The Twin Rivers Region will develop in a manner that provides a healthy, enjoyable, and prosperous place for residents and visitors alike. The Twin Rivers Region will be characterised by its outstanding position adjacent to the Nicholson and Tambo Rivers, diversity of housing choice, and outstanding access to a range of recreational and tourism opportunities, local community hubs and places of interest at Nicholson, Johnsonville, and Swan Reach.”

7.2 Key attributes of the region

The key attributes of the region have been defined through research, consultation, and engagement with a wide variety of stakeholders. These include:

- The Rural / Semi Rural character and landscapes.
- The strong relationship of the region to river systems which provide access for recreational boating, rowing, and fishing opportunities.
- Proximity to diverse recreation opportunities in alpine and marine environments outside the region.
- Access to the towns of Bairnsdale and Lakes Entrance for higher order goods, services, employment, and transport connections.
- Productive agricultural land which is used for livestock and crops, generating local produce for the region.
- Genuine sense of local community pride, systems of community facilities and services.
- Exposure to passing traffic along the Princes Highway as opportunities for tourism.

7.3 Key opportunities for the future

7.3.1 Tourism and Economic Development

The attractive rural outlooks and the Nicholson and Tambo Rivers provide opportunities for niche tourism-related development which builds upon the attributes of the region. This may include visitor accommodation, food and wine tourism or other nature-based tourism based activities. The success of tourism in the region will depend on the marketing of the region, or particular towns, as tourism destinations.

In this regard, there are opportunities to celebrate the Twin Rivers location, unique character, and sense of place through:

- Improved entry treatments, including strengthened streetscapes on major tourist routes; and
- The promotion and marketing of the Twin Rivers region as:

- A key destination for recreational boating, fishing, and rowing with access to a wide variety of recreational pursuits in nearby Alpine and marine environments.
- A stop off point along the Princes Highway to other destinations.
- A “move to” region for families and retirees.
- The identification of a space with highway frontage which could be suitable for use a communal market space for a local community market or the like. This could be utilised to capture the region’s excellent access to local produce. Council may seek to facilitate such an opportunity on Council owned land within Johnsonville. The space should be suitable to accommodate:
 - Safe vehicle access
 - Access to electricity
 - Some on site storage
 - Well drained
 - Rubbish facility collection
 - Temporary stalls and stall vehicles
 - Off road car parking area for visitors
 - Temporary toilet facilities
 - Opportunities to display signage (temporary or otherwise) which is visible from the Princes Highway advertising market dates and times.

7.3.2 Settlement and Environment

There are opportunities to maintain the attractive outlook and rural character which makes the region popular as a place to live through the encouragement of well contained, smaller residential properties for retirees and young families who may look to reside in the region in future. This can be achieved through:

- The identification and promotion of key infill development opportunities.
- The introduction of a settlement boundary around each of the township areas.
- The identification of a future direction of township growth for Nicholson which has a comparatively low share of available Township zoned land.
- Ongoing protection for areas of environmental, landscape, heritage, or scenic importance through the use of planning controls.
- Encourage the subdivision of RLZ land which is well located to Township areas and not required for future growth.

7.3.3 Improving Connectivity

There are opportunities to improve connectivity, legibility, and safety of the region for residents and visitors. In this regard, improvements could include:

- Pedestrian and motorist safety on the Princes Highway.
 - Improved pedestrian connection between the Nicholson township area and its school which are separate by a river crossing.
 - Improved connections and signage to the Rail trail for recreational bike riding
- A signage strategy which provides for:
 - Coordinated directional signage to key destinations and points of interest within the region (including Rail Trail, Boat Ramps, and Tourist Accommodation)
 - Guidelines to accommodate and co-ordinate private signage.

7.3.4 Improving and adapting social facilities to meet future needs

There are opportunities throughout the Study area to improve social infrastructure to meet changing community needs and expectations. This could include:

- Spaces for informal social interaction, and casual, low cost meeting places (internal / and external).
- Collocation of some community services and facilities within the towns of Swan Reach and Johnsonville which are geographically within close proximity of one and other. The pooling of resources dedicated to capital infrastructure may assist in better servicing both communities in future. Examples could include emergency services and schools.
- Play areas for children.
- The provision of support facilities for tourists (including disabled toilet access).

7.4 Structure Plan Themes

- Settlement and Housing
- Infrastructure
- Natural Environment, Open Space, and Recreation
- Economic Development and Employment
- Access and Movement
- Community services and facilities.

Objectives and strategies in relation to each theme are identified overleaf.

7.5 Objectives, and Strategies

7.5.1 Settlement and Housing

Objectives

- To ensure adequate land supply to meet current and future housing needs.
- To maintain housing affordability.
- To encourage the consolidation of existing township areas through the development and subdivision of existing lots.
- To protect areas of environmental, cultural, agricultural significance from urban encroachment.
- To encourage future development to promote a high standard of Ecologically Sustainable Development (ESD).

Strategies

- Encourage the development of undeveloped sites.
- Ensure that all future township development occurs within a defined Urban Boundary.
- Ensure that new development does not disrupt or restrict existing rural or agricultural activities.
- Encourage a variety of different dwelling sizes in new subdivisions to provide for a variety of different dwelling sizes.
- Encourage new subdivisions to adopt best practice in relation to walkable neighbourhoods, provision for bus routes, water sensitive urban design, and other energy efficient sustainability initiatives.
- Identify land at 100 Sarsfield-Nicholson Road for future township growth within Nicholson.
- Ensure that future settlement has strong regard for the many natural, cultural, and heritage attributes which are identified within the Twin Rivers Region.

- Consider minor adjustments to the Rural Living Zone (from RLZ2 to RLZ1) on land which displays the following characteristics:*

 - Is not identified required for future township growth.
 - Is located within proximity to town services and amenities (i.e walkable distance).
 - Is not inhibited by environmental, heritage, or landscape constraints.

* Note: *There is no intention to consider this land as “urban”. The land should be retained in a Rural Living Zone and located outside an Urban Boundary.*

7.5.2 Infrastructure

Objectives

- To ensure that the provision of infrastructure services meets current and future needs.
- To ensure that all new development within the Township Zone is connected to town infrastructure.
- To ensure that requirements for new infrastructure maintain housing affordability.

Strategies

- Ensure the sequential provision of sewage, water, and drainage infrastructure with new development within the Township and Comprehensive Development Zone.
- Ensure that new septic tanks are to be no closer than 60m to any watercourse, including ephemeral waterways and dams. This distance may be reduced to 30m if effluent is pre treated on site to the satisfaction of Council.
- Provide clear focus on the upkeep and delivery of infrastructure to land contained within the Township Zone.

7.5.3 Natural Environment, Open Space, and Recreation

Objectives

- To maintain and enhance natural environmental assets including public land, waterways, wildlife corridors, native vegetation, and major strands of tress.
- To ensure that development does not compromise environmental values.
- To protect communities from environmental risks such as wildfire or flooding.
- To provide opportunities for open space and recreation which meet community needs.

Strategies

- Ensure that development standards reduce environmental impacts associated with stormwater run-off and habitat loss and destruction.
- Ensure appropriate development in flood prone and fire prone areas.
- Ensure the retention of native animal habitat areas.
- Protect and enhance roadside vegetation corridors, particularly at town entries.
- Improve access to the Rail trail through the examination of new connections and improved signage.
- Investigate opportunities to provide low cost recreation opportunities, particularly young people.

7.5.4 Economic Development & Employment

Objectives

- To provide a sustainable business environment for existing business and niche tourism services.
- To protect existing agricultural land, recognising its importance in providing access to food, agricultural employment, and the viability of farms.
- To maximise customer and tourist visitation through appropriate zoning that facilitates the establishment of new businesses.
- To ensure that Home based businesses are appropriately located, designed, and managed so as to avoid off-site amenity impacts.
- To improve the safety and attractiveness of the public realm.
- To enhance the image and identity of the Twin Rivers Region.
- To provide access to a diversity of employment opportunities.
- Maintain views from the Princes Highway – a key tourist route for the Twin Rivers Region.

Strategies

- Encourage the ongoing clustering of commercial areas within each town for local convenience and tourism related uses, including visitor accommodation, food and wine tourism, or other nature-based tourism based activities.
- Encourage new and emerging business opportunities, including home based businesses which provide additional employment opportunities.
- Ensure that new businesses are sited and designed so as to maintain appropriate buffers to sensitive uses, agricultural uses, and views from the Princes Highway.
- Discourage new large industries to be located within the Twin Rivers Region.
- Encourage the use of off-street car parking for highway based businesses, where available.

- Ensure that new development adjacent to the Princes Highway is appropriately cited and designed having regard to the Highway's role as a major tourist route and movement corridor.
- Discourage new vehicle access points to the Princes Highway. Vehicle access should be provided via a service road where possible.
- Investigate an opportunity to establish a communal market space within the Twin Rivers Region (possibly Johnsonville). The market could be utilised to capture the region's excellent access to local produce. Council may seek to facilitate such an opportunity on Council owned land.
- To celebrate the Twin Rivers location, unique character, and sense of place through:
 - The promotion and marketing of the Twin Rivers region as:
 - An enjoyable place to live for families and retirees.
 - A key destination for recreational boating, rowing, and fishing
 - Access to a wide variety of recreational pursuits in nearby Alpine and marine environments.
 - A place of interest and stop off point along the Princes Highway to other tourist destinations.
 - Improved entry treatments, including strengthened streetscapes on major tourist routes.
 - Develop a signage strategy for the region that will provide a suite of co-ordinated signs for information, direction, and promotion.

7.5.5 Access and Movement

Objectives

- To provide an efficient movement network for vehicles, pedestrians and cyclists,
- To ensure adequate vehicular, pedestrian, and cycling connectivity between Nicholson, Johnsonville, and Swan Reach.
- To ensure adequate connections to the surrounding towns of Bairnsdale and Lakes Entrance.
- To appropriately manage access and parking requirements.
- To encourage alternative modes of travel.

Strategies

- Ensure that future roads and accessways are compliant with the requirements of the Disability Discrimination Act and the Gippsland Infrastructure Design Manual.
- Review parking arrangements in township areas adjacent to the Princes Highway.

- Develop a footpath improvement map and renewal program to strategically address the renewal of paths and any new paths which may be required within the Township areas.
- Encourage alternative forms of travel through:
 - Improved bus services connecting nearby regional centres of Bairnsdale and Lakes Entrance.
 - Bicycle parking facilities at bus stops within each town.
 - An Improved pedestrian / cycling linkage between Johnsonville and Swan Reach
 - Community bus service
 - Car pooling
- Introduce a consistent signage theme across the three towns to improve legibility and maximise tourist visitation for those unfamiliar with the study area.

7.5.6 Community Services and Facilities

Objectives

- To adapt social infrastructure to meet changing community needs and expectations.
- To ensure that community facilities are located where they will most effectively serve the community and are easily accessible, (and where possible) co-located with other community facilities and business opportunities.

Strategies

- Provide greater opportunities for informal social interaction, and casual, low cost meeting spaces. This should include internal and external spaces.
- Encourage the co-ordination of bus services and timetables to enable access to higher education and health services in Bairnsdale.
- Investigate opportunities to co-locate emergency services. Focus should be on land with access to town services and sealed access.

7.6 Township Roles

State Planning Policy seeks to encourage regions and settlements which; “*have a strong identity, are prosperous and are environmental sustainable.*” Within this context, current and future roles for each of the three towns within the Twin Rivers Region are identified as follows:

Nicholson

Nicholson is located at the junction of the Princes Highway and Nicholson River. Nicholson has considerable recreational attributes with a strong relationship to the Nicholson River, and the East Gippsland Rail Trail which passes across the northern section of the town.

The town’s commercial centre services local community needs while proximity to Bairnsdale provides for the town’s higher order community facilities, commercial and retail functions. Civic and Community uses including a Primary School are concentrated east of the Nicholson River, south of the Princess Highway.

The town plays a role in announcing a sense of “arrival” within the Twin Rivers Region, and departure from more urbanised areas of Bairnsdale. Opportunities for growth exist within Nicholson, but need to be carefully managed. Future growth options for Nicholson were investigated. These are discussed in **Appendix F**.

Nicholson’s role should be further supported through the following strategies and initiatives:

- The consolidation of existing, undeveloped and underutilised Township Zone land, and the development of undeveloped LDRZ and RLZ land.
- The identification of a future direction of township growth. This will most likely be achieved to the north of the existing Nicholson Township Zone at 100 Sarsfield-Nicholson Road. The subject land is located immediately west of the Nicholson River and is currently zoned Low Density Residential (LDRZ). The subject land is separated from the existing Township Zone by the former railway corridor, however access to this corridor itself would provide recreation and amenity opportunities. The subject land has a significant strategic advantage by not being separated from the existing township area by either the Princes Highway or Nicholson River. It therefore carries advantages in relation to safety and access. It is understood the land remains in single ownership and services have already been connected. The land provides the most logical long-term extension to the existing township, should this be required in future. **Note:** Analysis does not indicate an immediate need for the rezoning of land. Onus should remain on the applicant to demonstrate that a rezoning is strategically justified

- Application of an urban boundary to ensure that any future development occur where there is access to town services and infrastructure.
- Identification of a commercial / Tourism opportunity site with frontage to the Princess Highway (see Key infill opportunities map below).
- Retention of the “Comprehensive Development Zone” to the south east of the existing township to provide for tourist accommodation. It is acknowledged that development of land for this purpose would be required to be supported by servicing infrastructure connections and upgrades, resolution of access issues, as well as appropriate interface and landscape treatments to surrounding Farm Zone land, and the Nicholson River. The schedule to the CDZ would need to be altered via a planning scheme amendment to accommodate proposals which differ from the Nerada Tourist Resort.
- Improved pedestrian connectivity between the township zoned areas on either side of the river.
- The protection of valued landscapes, riverbanks and highway frontage from inappropriate development.
- Improved linkages between the Rail Trail and town.

Nicholson - Key infill opportunities within the existing Township Zone

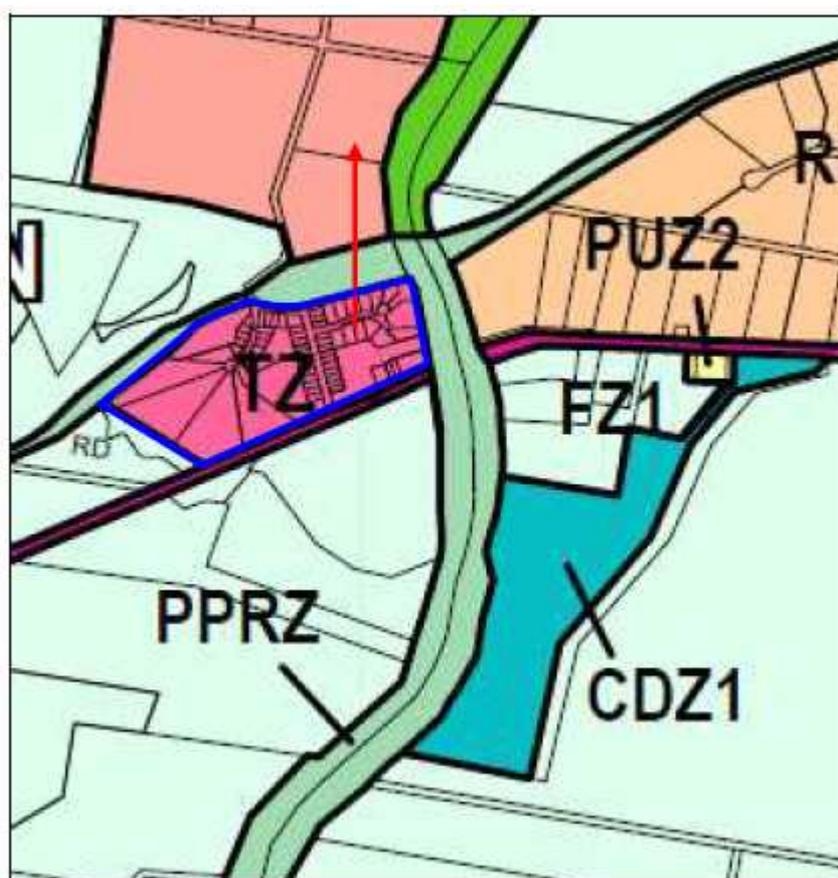
It is possible that some infill development will occur on vacant land, as shown on the map below:



Nicholson – Proposed Urban Boundary

The proposed Urban Boundary for Nicholson will reflect the extent of the existing Township Zone (TZ). A long term Township Zone growth area has been identified. The urban boundary would be adjusted if the land were included within the Township Zone in future. Land within the Comprehensive Development Zone (CDZ) is also proposed to be located outside of the Urban Boundary, and may be used to facilitate the development of tourist based accommodation in future.

Refer to the map below:



-  **Proposed Urban Boundary.**
-  **Long term Township Zone growth area: 100 Sarsfield-Nicholson Road (subject to future approval).**

Johnsonville

Johnsonville is located at the intersection of the Princess Highway and Sarsfield Tambo Upper Road. The attractive town setting and position adjacent to the highway and nearby Tambo River promote a number of tourist-based activities and businesses, including accommodation, boat launching, and boat storage. Small highway based convenience businesses service the day to day needs of the local community and tourists. Lakes Entrance and Bairnsdale provide for higher order commercial needs.

Johnsonville contains significant portions of undeveloped TZ, and LDRZ land. No additional land is likely required for future growth over a 15-20 year horizon. The future role of the town should be focused on support for existing services and functions, efficient use of facilities (ie: the sharing of some facilities and services with Swan Reach), and the containment of growth within an urban boundary (see Map below).

Johnsonville's role should be further supported through the following strategies and initiatives:

- The protection of environmentally significant areas including corridors of roadside vegetation, streamlines, and habitat corridors. These are most commonly found in Johnsonville in on the Princes Highway, Bumberrah Road, and the Tambo River.
- Investigation of the feasibility to provide a link to the Rail Trail to the north.
- Maintaining the physical separation between Johnsonville and Swan Reach.
- Protection of the highway corridor, and river corridor from inappropriate development.

Proposed Johnsonville Urban boundary

The proposed Urban Boundary for Johnsonville will reflect the extent of the existing Township Zone and Low Density Residential Zone. Land within the Road Zone is also included, as per the map below.



 **Proposed Urban boundary**

Swan Reach

Swan Reach is located at the juncture of the Princes Highway and Tambo River. Swan Reach provides a mix of conventional township residential and rural living opportunities, and is characterised by its gentle undulating topography and landscape.

The town's access to the Tambo River provides for recreational opportunities for boating and fishing and is further supported by tourist accommodation and other tourism related businesses and local convenience stores, primary school, kindergarten, and sports oval.

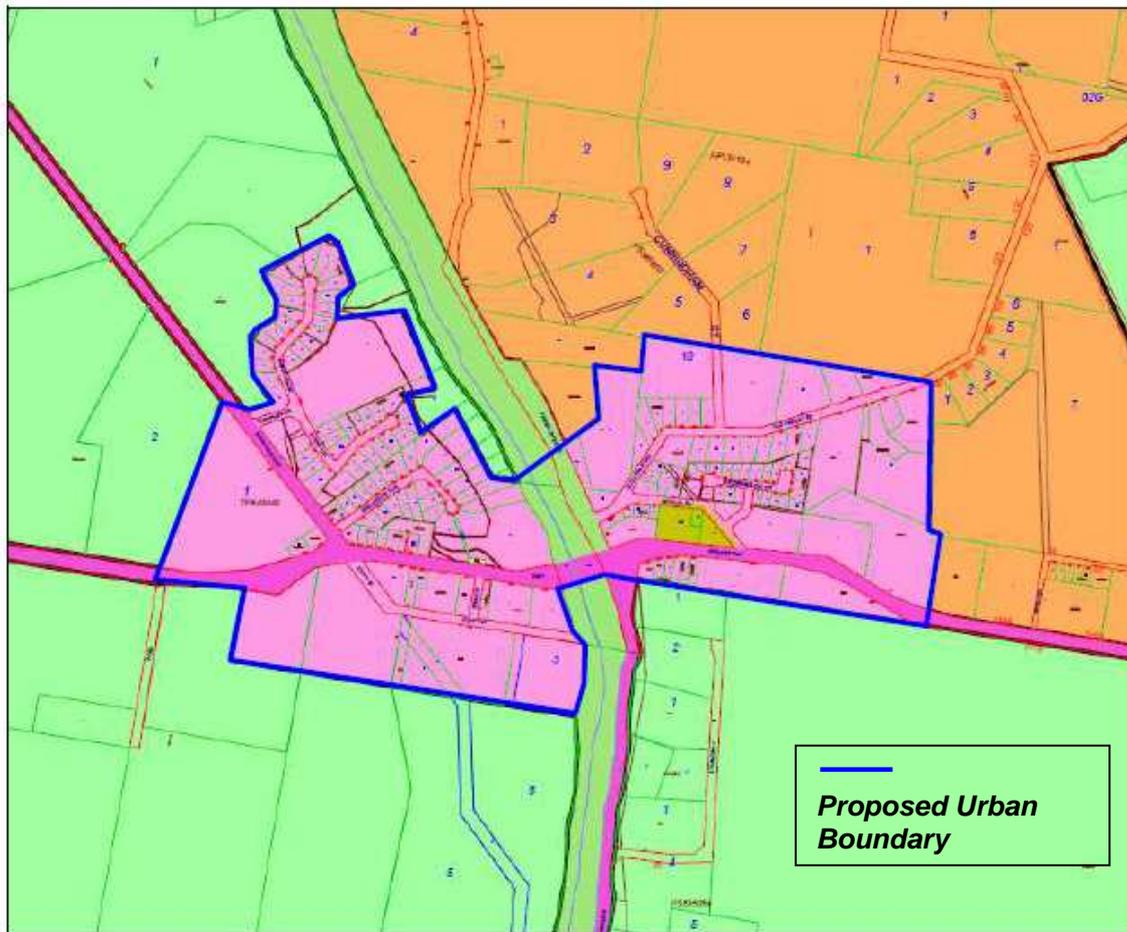
Swan Reach contains significant portions of undeveloped TZ, and LDRZ land. Land use and development is fragmented, with a large proportion of Rural Living Zoned land located significant distance from the town. No additional land is likely required for future growth over a 15-20 year horizon. The future role of the town should be focused on support for existing services and functions, efficient use of facilities (ie: the sharing of some facilities and services with Johnsonville), and the containment of growth within an urban boundary (see Map overleaf).

Swan Reach's role should be further supported through the following strategies and initiatives:

- Improved pedestrian connectivity between the township zoned areas on either side of the river.
- Future development should have strong regard for the protection of environmentally significant areas including corridors of roadside vegetation, streamlines, and habitat corridors. These are most commonly found in Swan Reach nearest the Tambo River, Princess Highway, Mossiface-Swan Reach Road, Cunningham Road, and Old Orbost road.
- Further use and development within the Wildfire Management Overlay northeast of the town must be considered within the context of all relevant statutory guidelines and CFA requirements.
- Maintaining the physical separation between Johnsonville and Swan Reach
- Protection of the highway corridor, and river corridor from inappropriate development.

Proposed Swan Reach Urban Boundary

The proposed Urban Boundary for Swan Reach will reflect the extent of the existing Township Zone Area. Land within the Road Zone, Public Conservation Resource Zone (Tambo River) and Public Use Zone 2 (School). Please refer to map below:



7.7 Implementation

To facilitate the implementation of the findings of this report, we would suggest that consideration be given to the following changes to the East Gippsland Planning Scheme:

- Updates to the Municipal Strategic Statement (MSS) to reflect the role and function of the Twin Rivers Region, the three towns within the region, and the urban boundary of each town.
- The inclusion of the Twin Rivers Community Structure Plan as a Reference Document to the MSS.
- Minor adjustments to the schedule of the Rural Living Zone which are located in close proximity to township boundaries (it is acknowledged that this would require further work to identify appropriate locations).

Further work

This should be supported by a variety of other non-statutory measures. These include:

- Development of a coordinated Signage Strategy for the Twin Rivers Region.
- A coordinated marketing and promotions program.
- A coordinated Capital Works program (including exploring opportunities for grant funding) to facilitate upgrades or installation of seating, signage, footpaths at key nodal points within each town.
- The establishment of guidelines, information and a register for Home Based Businesses operating in the region, which draw upon the Statutory Provisions of Clause 52.11 – Home Occupation.
- Landscape and signage improvements at town entrances.
- The development of advocacy positions, particularly in relation to:
 - Public Transport upgrades.
 - Safety upgrades to main road intersections.
 - Pedestrian crossings on bridges within each town.
 - Improvements to roadside car parking.

APPENDICES

APPENDIX A – ECONOMIC ANALYSIS

**APPENDIX B – SUMMARY OF RELEVANT
PLANNING POLICY**

SUMMARY OF RELEVANT POLICY

STATE PLANNING POLICY FRAMEWORK

Clause 11 - Settlement

The broad directions of Clause 11 identify that *“Planning is to anticipate and respond to the needs of existing and future communities through provision of zoned and serviced land for housing, employment, recreation and open space, commercial and community facilities and infrastructure.”*

Relevant objectives include:

- Clause 11.02-1 Supply of urban land: *“To ensure a sufficient supply of land is available for residential, commercial, retail, industrial, recreational, institutional and other community uses.”*
- Clause 11.02-2 Planning for growth areas: *“To locate urban growth close to transport corridors and services and provide efficient and effective infrastructure to create benefits for sustainability while protecting primary production, major sources of raw materials and valued environmental areas.”*
- Clause 11.05-1 Regional settlement networks: *Bairnsdale is identified as a second tier “Regional City”.*
- Clause 11.05-3 Rural productivity: *“To manage land use change and development in rural areas to promote agriculture and rural production.”*
- Clause 11.05-4 Regional planning strategies and principles: *“To develop regions and settlements which have a strong identity, are prosperous and are environmental sustainable.”*

Clause 12 – Environment and Landscape Values

Clause 12 highlights that *“Planning should help to protect the health of ecological systems and the biodiversity they support (including ecosystems, habitats, species and genetic diversity) and conserve areas with identified environmental and landscape values.”*

Relevant objectives include:

- Clause 12.01-1 Protection of habitat: *“To assist the protection and conservation of biodiversity, including native vegetation retention and provision of habitats for native plants and animals and control of pest plants and animals.”*
- Clause 12.01-2 Native vegetation management: *“To achieve a net gain in the extent and quality of native vegetation.”*
- Clause 12.04-1 Environmentally sensitive areas: *“To protect and conserve environmentally sensitive areas.”*
- Clause 12.04-2 Landscapes: *“To protect landscapes and significant open spaces that contribute to character, identity and sustainable environments.”*

Clause 14 – Natural Resource Management

The directions of Clause 14 identify that *“Planning is to assist in the conservation and wise use of natural resources including energy, water, land, stone and minerals to support both environmental quality and sustainable development.”*

Relevant objectives include:

- Clause 14.01-1 Protection of agricultural land: *“To protect productive farmland which is of strategic significance in the local or regional context.”*
- Clause 14.02-1 Catchment planning and management: *“To assist the protection and, where possible, restoration of catchments, waterways, water bodies, groundwater, and the marine environment.”*

One of the strategies included within this clause advocates the retention of *“natural drainage corridors with vegetated buffer zones at least 30m wide along each side of a waterway to maintain the natural drainage function, stream habitat and wildlife corridors and landscape values, to minimise erosion of stream banks and verges and to reduce polluted surface runoff from adjacent land uses.”*

- Clause 14.02-2 Water quality: *“To protect water quality.”*

Incompatible land use activities are discouraged *“in areas subject to flooding, severe soil degradation, groundwater salinity or geotechnical hazards where the land cannot be sustainably managed to ensure minimum impact on downstream water quality or flow volumes.”*

Clause 15 – Built Environment and Heritage

Clause 15 states that *“Planning should ensure all new land use and development appropriately responds to its landscape, valued built form and cultural context, and protect places and sites with significant heritage, architectural, aesthetic, scientific and cultural value.”*

- Clause 15.01-1 Urban design: *“To create urban environments that are safe, functional and provide good quality environments with a sense of place and cultural identity.”*
- Clause 15.01-3 Neighbourhood and subdivision design: *“To ensure the design of subdivisions achieves attractive, liveable, walkable, cyclable, diverse and sustainable neighbourhoods.”*

Clause 16 – Housing

Clause 16 advocates that *“New housing should have access to services and be planned for long term sustainability, including walkability to activity centres, public transport, schools and open space.”*

- Clause 16.01-2 Location of residential development: *“To locate new housing in or close to activity centres and employment corridors and at other strategic redevelopment sites that offer good access to services and transport.”*
- Clause 16.02-1 Rural residential development: *“To identify land suitable for rural living and rural residential development.”*

The following strategies contained within this clause support the protection of high quality agricultural land and consolidation of existing settlements.

“Manage development in rural areas to protect agriculture and avoid inappropriate rural residential development.”

“Reduce the proportion of new housing development provided in rural areas and encourage the consolidation in existing settlements where investment in physical and community infrastructure and services has already been made.”

“Demonstrate need and identify locations for rural residential development through a housing and settlement strategy.”

“Ensure land is not zoned for rural living or rural residential development if it will encroach on high quality productive agricultural land or adversely impact on waterways or other natural resources.”

Clause 17 – Economic Development

Clause 17 states that *“Planning is to contribute to the economic well-being of communities and the State as a whole by supporting and fostering economic growth and development by providing land, facilitating decisions, and resolving land use conflicts, so that each district may build on its strengths and achieve its economic potential.”*

- Clause 17.03-1 Facilitating tourism: *“To encourage tourism development to maximise the employment and long-term economic, social and cultural benefits of developing the State as a competitive domestic and international tourist destination.”*

Clause 18 – Transport

Clause 18 states that *“Planning should ensure an integrated and sustainable transport system that provides access to social and economic opportunities, facilitates economic prosperity, contributes to environmental sustainability, coordinates reliable movements of people and goods, and is safe.”*

18.01 Declared highways, railways and tramways: *“To integrate land use and transport planning around existing and planned declared highways, railways, principal bus routes and tram lines.”*

Implementation actions include: “New uses or development of land near an existing or proposed transport route should be planned or regulated to avoid detriment to, and where possible enhance, the service, safety and amenity desirable for that transport route in the short and long terms.”

- Clause 18.02-1 Sustainable personal transport: *“To promote the use of sustainable personal transport.”* The following strategies are outlined:

“Encourage the use of walking and cycling by creating environments that are safe and attractive.

Develop high quality pedestrian environments that are accessible to footpath-bound vehicles such as wheelchairs, prams and scooters.

Ensure development provides opportunities to create more sustainable transport options such as walking, cycling and public transport.

Ensure cycling routes and infrastructure are constructed early in new developments.”

Clause 19 – Infrastructure

Clause 19 states that *“Planning for development of social and physical infrastructure should enable it to be provided in a way that is efficient, equitable, accessible and timely. Planning is to recognise social needs by providing land for a range of accessible community resources, such as*

education, cultural, health and community support (mental health, aged care, disability, youth and family services) facilities.”

- Clause 19.03-2 Water supply, sewerage and drainage: *“To plan for the provision of water supply, sewerage and drainage services that efficiently and effectively meet State and community needs and protect the environment.”*
- Clause 19.03-3 Stormwater: *“To reduce the impact of stormwater on bays and catchments.”*
- Clause 19.03-4 Telecommunications: *“To facilitate the orderly development, extension and maintenance of telecommunication infrastructure.”*

LOCAL PLANNING POLICY FRAMEWORK

The MSS provides a future vision for the development of the East Gippsland Shire. It provides long-term strategic directions for land-use and development within the Shire (zoning, overlays and particular provisions), providing greater certainty for all stakeholders.

Clause 21.04-2 describes the vision for the Shire as follows:

East Gippsland in 2010 will be recognised throughout Australia and beyond as a region combining outstanding environmental quality with a vibrant and expanding economy, whilst providing a rewarding lifestyle, employment & educational opportunities and community supports for both its residents and visitors.

In developing the vision the following four characteristics of the area were recognised as being the most valued by the people of East Gippsland:

- *The natural environment, both for its intrinsic worth and for the opportunities it offers for recreation and leisure activities*
- *The beautiful and diverse landscape, the mixture of natural and rural elements, and the attractiveness, amenity and scale of many of the towns and settlements*
- *The sense of community, the caring atmosphere, the safety and security which exist in the Shire and its urban areas*
- *The systems of community facilities and services - health, education, emergency services, aged care, child care, libraries, sporting and recreation facilities, arts and cultural resources, local retail and commercial facilities - which support the*

communities and are supported by them through a wide range of voluntary involvements.

Clause 21.05 outlines the Objectives, Strategies and Implementation for key services and activities within the Shire as follows:

- Meeting community needs and community development, (e.g. education and training; recreation, leisure and cultural development; and housing).
- Economic development and employment (e.g. infrastructure for development; rural industries; and tourism and 'lifestyle' living).
- Conservation and natural resource management (e.g. fire prevention and hazard management; and habitat protection and biodiversity conservation).
- Land use and development (e.g. urban centres; use of non-urban land for residential, recreational & tourist purposes; land capability and development constraints; significant landscapes; and highways and major roads).

The specific strategies for individual towns are outlined in Clause 21.06 (Strategies for Sub-Regions, Towns and Localities). For planning purposes, the townships within the Twin Rivers region are included within the 'Lakes and Coastal' sub-region.

The following information, which is taken from Clause 21.06-2, outlines the key aspects and current/future roles of the three towns and the policies/strategies to be pursued by Council. This information will be reviewed and revised (as required) as part of this study.

Nicholson River

Nicholson River is a small riverside village on the Princes Highway, surrounded by 'rural residential' style development.

The characteristic landscape setting of Nicholson and its proximity to a premier fishing river creates an attractive area in which people can live. Considerable rural residential development has been occurring in this area (extending to Johnsonville & Swan Reach) compared to the rest of the region. New dwelling approvals averaged around 12 per year in throughout the 1990s.

East Gippsland Water has recently installed a reticulated sewerage scheme to service Nicholson, Johnsonville and Swan Reach.

A major tourist development - the Nerada resort - is proposed for the east side of the Nicholson River, south of the Princes Highway.

Council will support the existing roles and functions that each of the three towns fulfils and encourage development of new and enhanced roles as follows:

Town/Locality	Support Existing Role(s)	Encourage New/Enhanced Roles
Nicholson	<ul style="list-style-type: none"> Local retail & highway service centre. Residential community. Primary education centre. Sporting and recreation facilities, including river access. 	<ul style="list-style-type: none"> Increased potential for residential and tourist development when sewerage available.

To achieve this, Council will apply the following policies and strategies:

- Land capable of being serviced by the new sewerage scheme has been zoned to allow closer settlement than areas that still rely on on-site waste disposal. However, it is envisaged that the area around Nicholson will retain a relatively low-density character rather than being widely developed at standard urban densities.
- The land proposed for the Nerada resort is zoned Comprehensive Development Zone in and the plan is incorporated in this Scheme.
- The traffic carrying capacity of the Princes Highway will be maintained by ensuring that new traffic-generating developments do not have direct access onto the highway.
- The river corridor will be protected from development that might impact adversely on its environmental values.
- Developers will be encouraged to adopt high design standards for new developments, particularly those adjacent to the river.

Johnsonville and Swan Reach

Johnsonville and Swan Reach are villages on the Princes Highway, adjacent to the Tambo River. Growth rates in the 1990s ranged between five and 10 new dwellings per year.

The attractive setting of these villages and their proximity to a major fishing river creates an increasing demand for permanent residential development, particularly low density development on the fringes of the settlements.

East Gippsland Water has recently installed a reticulated sewerage scheme to service Nicholson, Johnsonville and Swan Reach.

Council will support the existing roles and functions that Johnsonville and Swan Reach fulfil and encourage development of new and enhanced roles as follows:

Town/Locality	Support Existing Role(s)	Encourage New/Enhanced Roles
Johnsonville	<ul style="list-style-type: none"> Local retail & highway service centre. 	<ul style="list-style-type: none"> Increased potential for residential and tourist

	<ul style="list-style-type: none"> • Residential & rural-residential community. • Sporting and recreation facilities, including river access. 	development when sewerage available.
Swan Reach	<ul style="list-style-type: none"> • Local retail & highway service centre. • Residential community. • Primary education centre. • Sporting and recreation facilities, including river access. 	<ul style="list-style-type: none"> • Increased potential for residential and tourist development when sewerage available.

To achieve this, Council will apply the following policies and strategies:

- Some growth potential is recognised in and around these towns, particularly in view of the installation of reticulated sewerage and (potentially) natural gas, and this is reflected in the zonings applied in this Planning Scheme.
- Development should preserve the separation between the settlements and the amenity of the highway corridor.
- The river corridor will be protected from development which might impact adversely on its environmental and landscape values
- The proposed Tamhaven resort at Swan Reach has been zoned Township, since the 'resort' elements of the original proposal can all be accommodated in the new zone. A permit with a limited lifespan will be issued for this development.
- The Gippsland Lakes Strategy's prohibition on residential development of Johnsonville north of the Princes Highway is considered to be no longer appropriate, provided development does not have a direct frontage to the Highway.
- The old Crown township of Johnsonville, now sewerage is available, is capable of being restructured to meet current residential development standards, subject to resolution of drainage issues.

APPENDIX C – SUMMARY OF RELEVANT PLANNING CONTROLS

SUMMARY OF RELEVANT ZONING CONTROLS

Zoning	Purpose	Areas Affected
Township Zone (TZ)	<p><i>To provide for residential development and a range of commercial, industrial and other uses in small towns.</i></p> <p><i>To encourage residential development that respects the neighbourhood character.</i></p>	<p>Nicholson – located between Princes Highway and the Rail Trail Reserve (west of the Nicholson River)</p> <p>Johnsonville – generally located on the east side of Bumberrah Road, with a small portion located on the west side of Bumberrah Road (south of Princes Highway).</p> <p>Swan Reach – generally located along the Princes Highway and Swan Reach-Bruthen Road (on both sides of the Tambo River).</p>
Low Density Residential Zone (LDRZ)	<p><i>To provide for low-density residential development on lots which, in the absence of reticulated sewerage, can treat and retain all wastewater.</i></p>	<p>Nicholson – applies to residential development to the north of the Township Zone and Rail Trail Reserve.</p> <p>Johnsonville – applies to residential development on the west side of Bumberrah Road (both sides of Princes Highway).</p>
Rural Living Zone (RLZ)	<p><i>To provide for residential use in a rural environment.</i></p> <p><i>To provide for agricultural land uses which do not adversely affect the amenity of surrounding land uses.</i></p> <p><i>To protect and enhance the natural resources, biodiversity and landscape and heritage values of the area.</i></p> <p><i>To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.</i></p>	<p>Nicholson – rural living development on the east side of Nicholson River (north of Princes Highway). This zone extends in a north-east direction along Nicholson-Tambo Upper Road.</p> <p>Swan Reach – located north of the Township Zone (east of the Tambo River).</p>
Farming Zone (FZ)	<p><i>To provide for the use of land for agriculture.</i></p> <p><i>To encourage the retention of productive agricultural land.</i></p> <p><i>To ensure that non-agricultural uses, particularly dwellings, do not adversely affect the use of land for agriculture.</i></p> <p><i>To encourage use and development of land based on comprehensive and sustainable land management practices</i></p>	<p>Applies to Twin Rivers' rural and agricultural land.</p>

Zoning	Purpose	Areas Affected
	<p><i>and infrastructure provision.</i></p> <p><i>To protect and enhance natural resources and the biodiversity of the area.</i></p>	
<p>Comprehensive Development Zone (CDZ)</p>	<p>Schedule 1 of the CDZ notes that the purpose of the Zone is:</p> <p><i>To provide for a tourist resort and marina adjacent to the Nicholson River, at Nicholson.</i></p> <p><i>To provide for a range of uses and the development of land generally in accordance with the Nerana Resort and Marina Concept Plan, dated 5 June 1997.</i></p> <p><i>To ensure that the tourist resort and marina is sympathetic with the landscape and the environment of the locality.</i></p>	<p>Nicholson – land located south of the school, along the east side of Nicholson River.</p>
<p>Public Park and Recreation Zone (PPRZ)</p>	<p><i>To recognise areas for public recreation and open space.</i></p> <p><i>To protect and conserve areas of significance where appropriate.</i></p> <p><i>To provide for commercial uses where appropriate.</i></p>	<p>Public recreation and open space areas, including the Rail Trail Reserve and Nicholson River (south of the Rail Trail).</p>
<p>Public Conservation and Resource Zone (PCRZ)</p>	<p><i>To protect and conserve the natural environment and natural processes for their historic, scientific, landscape, habitat or cultural values.</i></p> <p><i>To provide facilities which assist in public education and interpretation of the natural environment with minimal degradation of the natural environment or natural processes.</i></p> <p><i>To provide for appropriate resource based uses.</i></p>	<p>Natural environmental areas, including the Nicholson River (north of the Rail Trail) and Tambo River.</p>
<p>Resource Conservation Zone (RCZ)</p>	<p><i>To conserve the values specified in the schedule to this zone.</i></p> <p><i>To protect and enhance the natural environment and natural processes for their historic, archaeological and scientific interest, landscape, faunal habitat and cultural values.</i></p> <p><i>To protect and enhance natural resources and the</i></p>	<p>Johnsonville – land on southern outskirts of town (in proximity to Gippsland Lakes area).</p>

Zoning	Purpose	Areas Affected
	<p><i>biodiversity of the area.</i></p> <p><i>To encourage development and use of land which is consistent with sustainable land management and land capability practices, and which takes into account the conservation values and environmental sensitivity of the locality.</i></p> <p><i>To provide for agricultural use consistent with the conservation of environmental and landscape values of the area.</i></p> <p><i>To conserve and enhance the cultural significance and character of open rural and scenic non urban landscapes.</i></p>	
Public Use Zone (PUZ)	<p><i>To recognise public land use for public utility and community services and facilities.</i></p> <p><i>To provide for associated uses that are consistent with the intent of the public land reservation or purpose.</i></p>	<p>Nicholson – service and utility and education facilities.</p> <p>Johnsonville – service and utility and cemetery.</p> <p>Swan Reach – service and utility and education facilities.</p>
Road Zone – Category 1 (RDZ1)	<p><i>To identify significant existing roads.</i></p> <p><i>To identify land which has been acquired for a significant proposed road.</i></p>	<p>Nicholson – Princes Highway.</p> <p>Johnsonville – Princes Highway.</p> <p>Swan Reach – Princes Highway, Swan Reach-Bruthen Road and Metung Road.</p>

SUMMARY OF RELEVANT OVERLAY CONTROLS

Overlay	Purpose/Objectives	Areas Affected
Land Subject to Inundation Overlay (LSIO)	<p><i>To identify land in a flood storage or flood fringe area affected by the 1 in 100 year flood or any other area determined by the floodplain management authority.</i></p> <p><i>To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.</i></p> <p><i>To reflect any declaration under Division 4 of Part 10 of the Water Act, 1989 where a declaration has been made.</i></p> <p><i>To protect water quality in accordance with the provisions of relevant State Environment Protection Policies, particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria).</i></p> <p><i>To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health.</i></p>	<p>Nicholson – flood prone land abutting and in proximity to the Nicholson River and Gippsland Lakes.</p> <p>Johnsonville and Swan Reach – flood prone land abutting and in proximity to the Tambo River.</p>
Design and Development Overlay – Schedule 7 Highway Corridors, Princes Highway & Great Alpine Road (DDO7)	<p><i>To ensure that development in the Highway corridors in non-urban areas is managed to minimise adverse effects on the safe and efficient flow of traffic along the highways.</i></p> <p><i>To encourage high standards of design and the use of appropriate materials in building and works to be constructed within the highway corridors.</i></p> <p><i>To prevent linear or ribbon development along the Highway corridors.</i></p> <p><i>To protect significant native vegetation in the Highway road reserves.</i></p>	<p>Along the Princes Highway.</p>
Environmental Significance	<p><i>To ensure that development occurs so as not to adversely</i></p>	<p>Nicholson – the following ESO Schedules apply:</p>

Overlay	Purpose/Objectives	Areas Affected
Overlay (ESO)	<p><i>impact upon the environmental values of the site or any other value that may be identified within the overlay area.</i></p> <p><i>To conserve and enhance the environmental sustainability and ecological integrity of these values.</i></p>	<ul style="list-style-type: none"> • Schedule 29 Sandfords (ESO29). • Schedule 30 Nicholson River (ESO30). • Schedule 31 Nicholson Corridor (ESO31). • Schedule 44 Tambo Upper Corridor (ESO44). <p>Johnsonville and Swan Reach – the following ESO Schedules apply:</p> <ul style="list-style-type: none"> • Schedule 44 Tambo Upper Corridor (ESO44). • Schedule 58 Tambo River (ESO58). • Schedule 63 Rosherville Rd Corridor (ESO63).
Environmental Audit Overlay (EAO)	<p><i>To ensure that potentially contaminated land is suitable for a use which could be significantly adversely affected by any contamination.</i></p>	<p>Johnsonville – applies to a couple of parcels of land on the south side of Princes Highway, located within the eastern edge of the Township Zone.</p>
Significant Landscape Overlay – Schedule 2 Gippsland Lakes (SLO2)	<p><i>To ensure that development in and around existing settlements does not impact on the characteristics of the landscape, particularly the natural and unbuilt character at the edge of the Gippsland Lakes.</i></p> <p><i>To manage the impact of new development on the sense of space and openness in the rural landscape.</i></p>	<p>Applies to coastal land adjoining the Gippsland Lakes.</p>
Significant Landscape Overlay – Schedule 3 Metung and Lakes Entrance Hills (SLO3)	<p><i>To identify significant landscapes.</i></p> <p><i>To conserve and enhance the character of significant landscapes.</i></p>	<p>Swan Reach – applies to land adjoining and in proximity to Gippsland Lakes.</p>
Vegetation Protection Overlay – Schedule 1 Tambo-Bairnsdale Roadside Vegetation Protection Network (VPO1)	<p>This overlay seeks to protect high conservation value roadside vegetation within Government road reserves from:</p> <p><i>The potential adverse impacts of establishing access through roadside vegetation located between the carriageway and adjacent private land.</i></p>	<p>Nicholson – applies along sections of roads, including Ellasville Road, Princes Highway (east of Ellasville Road), Waddell Road, Nicholson-Tambo Upper Road, Watts Road, Howlett Road, Nicholson-Sarsfield Road, Lanes Road, Olivers Road and Sandford Lane.</p>

Overlay	Purpose/Objectives	Areas Affected
	<p><i>The potential adverse impacts of road maintenance and construction activities.</i></p>	<p>Johnsonville – applies to sections of roads, including Princes Highway, Foley Road, Bumberrah Road,</p> <p>Swan Reach – applies to sections of roads, including Swan Reach-Bruthen Road, Princes Highway, Metung Road, Old Orbost Road, Tambo Upper Road and Cunningham Road.</p>
<p>Erosion Management Overlay (EMO)</p>	<p><i>To protect areas prone to erosion, landslip or other land degradation processes, by minimising land disturbance and inappropriate development.</i></p>	<p>Affects significant areas of land within the towns and Twin Rivers region generally.</p>
<p>Salinity Management Overlay (SMO)</p>	<p><i>To identify areas subject to saline ground water discharge or high ground water recharge.</i></p> <p><i>To facilitate the stabilisation of areas affected by salinity.</i></p> <p><i>To encourage revegetation of areas which contribute to salinity.</i></p> <p><i>To encourage development to be undertaken in a manner which brings about a reduction in salinity recharge.</i></p> <p><i>To ensure development is compatible with site capability and the retention of vegetation, and complies with the objectives of any salinity management plan for the area.</i></p> <p><i>To prevent damage to buildings and infrastructure from saline discharge and high watertable.</i></p>	<p>Nicholson – land on the southern edge of town.</p> <p>Johnsonville – affects residential land in proximity to the Princes Highway/Bumberrah Road intersection.</p>
<p>Wildfire Management Overlay (WMO)</p>	<p><i>To identify areas where the intensity of wildfire is significant and likely to pose a threat to life and property.</i></p> <p><i>To ensure that development which is likely to increase the number of people in the overlay area:</i></p> <ul style="list-style-type: none"> - <i>Satisfies the specified fire protection objectives.</i> - <i>Does not significantly increase the threat to life and surrounding property from wildfire.</i> <p><i>To detail the minimum fire protection outcomes that will assist</i></p>	<p>Nicholson – selected areas zoned for farming and rural living to the north (between Nicholson and Sarsfield) and north-east of the town.</p> <p>Johnsonville – farming areas to the north west of the town.</p> <p>Swan Reach – selected areas zoned for farming and rural living to the north and north-east of the town (including Colquhoun Regional Park).</p>

Overlay	Purpose/Objectives	Areas Affected
	<i>to protect life and property from the threat of wildfire.</i>	

APPENDIX D – SUMMARY OF INITIAL FEEDBACK

SUMMARY OF INITIAL FEEDBACK RECEIVED

In what areas do you think Twin Rivers is doing well (i.e. strengths)?

- Good Fishing (Best Bream Fishing in Victoria – Tournament Fishing).
- Relaxed Rural Lifestyle – low density / scale and rural feel, friendly people, quiet streets, and low crime,
- Close proximity to Bairnsdale and Lakes Entrance.
- Tourist destination & excellent outdoor recreation opportunities, including:
 - Proximity to High Country, Lakes and Rivers.
 - Fishing, Boating, Rowing.
 - Bush Walking, Snow and Water Skiing.
 - Forest and Wilderness.
- 3 Towns: Major Access Road connects all three.
- Rail Trail.
- Culinaire Cooking School.
- Appealing landscape and aesthetics (i.e: rolling hills, open space and clean air).
- Quality of Education – 2 Primary Schools and Preschool.
- Football Team.
- Genuine sense of community pride.
- Good local primary production and sales – Wine, Beef, Fruit.
- Wildlife.
- Temperate climate.

In what areas do you think Twin Rivers can improve (i.e. weaknesses)?

- Lack of Utility Services – Gas, Sewer, Public Transport.
- Highway is dangerous to cross and divides the towns.
- No Boat Ramp or Community Hall at Swan Reach.
- Little opportunity for business growth – Lack of appropriate land.
- Some poor past planning decisions are now becoming visible (subdivision patterns, lack of connectivity).
- Lack of police / ambulance presence.
- Fire Risk – Northern Area.
- Lack of Walking / Riding Links. No Walking / Riding Connection between the 3 Towns.
- No consistent signage theme for 3 Towns.
- Poor quality public spaces.
- Land use conflicts – Home Based Businesses / Rural Industry.

What are the issues to be considered moving into the future (i.e. opportunities)?

- Need to define an identity for the region and role for each town.
- Rezoning of land for smaller lot subdivision.
- More industrial / commercial land.
- Consolidate (particularly Johnsonville and Swan Reach) to get some critical mass to support services.
- Grocery Store / Shopping Centre.
- Opportunities to promote local food production e.g. Farmers' Market.
- Further tourism growth – Improved Accommodation and Facilities.
- Improved rowing facilities, particularly aimed at schools.
- Boating facilities, eg. boat ramp at Swan Reach, upgrade existing facilities and public amenities.

- Better defining urban and agricultural areas (town boundaries).
- Natural Gas.
- Develop and consolidate Education Facilities.
- Improved connectivity to Rail Trail.
- Community facilities – Men’s Shed, Day Care, Multi Purpose Facility, health care services.
- More flexibility for home based businesses, hobby farms.
- Wireless / Broadband technology.
- Improved public transport.
- Beautifying the town centres.
- Enhanced recreational facilities, eg. Playgrounds, walking trails, boardwalks along the rivers.

What are the problems to be addressed (i.e. threats)?

- Additional Residential Growth – Encroaching on farming.
- Doing nothing.
- Bureaucracy.
- Peak oil prices.
- Defining agricultural areas (be more specific in defining uses).
- Inappropriate farming land.
- Information technology.
- Number of authorities that have responsibility for managing rivers.
- Too much regulation.
- Inappropriate subdivision; fragmentation of farming land.
- Highway Traffic, particularly during peak times.
- Climate change impacts, including increased frequency of natural disasters
- Loss of vegetation and natural habitat as a result of redevelopment.

Nicholson

- Relationship to river and low lying land requires careful consideration.
- Township zone land is built out – There is a need for additional supply of urban density lots. There have been many recent low density subdivision approvals.
- Need a convenience store. .
- Nicholson River Resort – Direction required.
- Need improved sustainable design guidelines.
- Town is car dependant and too separated. Better linkages over river required.
- Great opportunities to utilise natural topography and landscape for views.

Johnsonville

- Need to keep town consolidated:
 - There are opportunities to intensify development around the intersection.
 - Larger lots on outside of town.
- Opportunities to better leverage tourism potential required, including boat storage and launching facilities.
- Rowing Platform – Potential upgrade
- Accommodation uses required.
- Footpath connections and safe crossing points required.
- Need to better identify “No Go” zones for development.
- Improved infrastructure required.
- Connections with Swan Reach required.

Swan Reach

- There is a lack of connectivity between subdivisions (one way streets, cul de sacs).
- Traffic blackspot – School on other side.
- Walking paths required.
- Protection of viable agricultural land required.
- Native vegetation / fire issues require careful consideration.
- Identification and protection of low lying wet areas.
- Great opportunities to utilise natural topography and landscape for views.

APPENDIX E – SERVICING INFRASTRUCTURE INVESTIGATIONS

9 September 2011

**RE: Twin Rivers
Preliminary Infrastructure Investigations**

Meinhardt Infrastructure and Environment Pty Ltd (Meinhardt) has undertaken a preliminary review of Infrastructure capacity to support the development of strategy development to support the Twin Rivers Land Use Plan. Key findings in relation to each of the three towns within the Twin Rivers Region are set out below.

It should be noted that investigation remain of a preliminary nature and should be used to inform the development of strategy. No development plans or concepts have been considered. Further detailed investigations would be required to be carried out to support the development of individual parcels of land.

Nicholson

Sewer (East Gippsland Water)

Existing reticulation sewers service the existing township to the north west of the Princes Hwy and Nicholson River, including Nicholson Ct and Bradley Ct. A rising main appears to pump effluent towards the west from this precinct. All other developed areas do not appear to be serviced by reticulated sewers. East Gippsland Water advise that these areas use septic systems.

Future development of land may potentially connect into the existing sewer system depending on downstream capacity available and the quantity of additional lots. The minimum size of public sewers is 150mm diameter, which can handle approximately 250 lots total (as advised by East Gippsland Water). If additional subdivisions combine the downstream total to be greater than 250 lots then storage capacity will be needed in the form of a pump station to manage the downstream load.

Due to the small extent of the existing sewer network, if future subdivisions are not adjacent to the town centre then there will be considerable sewer infrastructure required to make connection with costs increasing as development gets further away from town. On the plus side, the topography in the area is expected to allow for gravity sewers to be constructed in most instances, as opposed to low pressure sewers with pumping.

There is relatively no existing sewer infrastructure on the south side of the Princes Hwy and hence any new developments here would have to install new infrastructure.

Water (East Gippsland Water)

Existing water mains appear to service most residential streets north of Princes Hwy with several water mains extending north-west and west from the township along Nicholson Tambo Upper Rd and Waddells Rd.

The 200mm water main running up Sarsfield Rd, across the river to Liddells Rd provides the best opportunity for connection by future development without necessitating upgrade of the existing infrastructure. No water mains are currently provided south of the Princes Hwy, hence any development south of Princes Hwy would require new infrastructure be installed.

Gas (APA)

No gas reticulation exists in the township. There is a proposal to bring gas to Lakes Entrance, however this is not expected in the short term and Nicholson is also thought to be too small to warrant an additional gas supply main.

SP Ausnet (Electricity)

An extensive network of overhead lines exists in and around the township, including several areas to the south of the Princes Hwy. It is expected that electricity supply to infill development or additional sub-divisions would be possible, with upgrades to existing infrastructure possibly required to support this.

Telecommunications (Telstra)

An extensive network of overhead lines exists in and around the township, including areas to the south of the Princes Hwy. It is expected that communications to infill development or additional sub-divisions would be possible, with upgrades to existing infrastructure possibly required to support this. There does not appear to be any optic fiber in the vicinity of the Nicholson township.

Drainage (Shire of East Gippsland)

Drainage records are currently being updated at the East Gippsland Shire Council and there is currently inadequate information to make reasonable recommendations. However, it is expected that utilisation of existing drainage lines may be possible for infill development and minor subdivisions with requirements for discharge restrictions and temporary on site storage. Larger developments are expected to require new / upgraded drainage infrastructure with incorporation of Water Sensitive Urban Design (WSUD) features (i.e. wetlands or rain gardens). New subdivisions in close proximity to the river may benefit from connections directly into the river (following WSUD pre-treatment) and thus require less need for new or upgraded drainage infrastructure.

Swan Reach

Sewer (East Gippsland Water)

Existing reticulation sewers service the township to the north west and north east of the Princes Hwy and Tambo River, including Georges Ct, Byrne Ct, Tamhaven Dve, and the streets between Old Orbost Rd and the Princes Hwy. A pump station on the west side of the river pumps effluent westwards via a rising main that routes across the river towards Johnsonville. All other developed areas do not appear to be serviced by reticulated sewers and East Gippsland Water advise that these areas use septic systems.

Future sub-divisions may potentially connect into the existing sewer system depending on downstream capacity available and the quantity of additional lots. The minimum size of public sewers is 150mm diameter, which can handle approximately 250 lots total (as advised by East Gippsland Water) If subdivisions combine the downstream total to greater than 250 lots then storage capacity will be needed in the form of a pump station to manage the downstream load.

It is expected that due to the topography in Swan Reach being relatively undulating there is a strong possibility for gravity sewers to be installed, as opposed to pump stations and low pressure sewer systems, which are more costly. There is relatively no existing sewer infrastructure on the south side of the Princes Hwy and hence any new developments would have to either install new infrastructure.

Water (East Gippsland Water)

Existing water mains appear to service most residential streets north of Princes Hwy within the township. An existing 300mm water main routes along the Princes Hwy and East Gippsland Water have advised that in general these is no issue with new subdivisions connecting to this main. Existing 100mm and 150mm water mains route north and south respectively from the township parallel to the Tambo River and may support minor to modest new development, depending on the available capacity of the mains.

Withstanding the above mentioned 150mm main there are no existing water mains to the south of the Princes Hwy and any new development to the south would have to make provision for the installation of new water infrastructure.

Gas (APA)

No gas reticulation exists in the township. There is a proposal to bring gas to Lakes Entrance, however this is not expected in the short term and Swan Reach is also thought to be too small to warrant an additional gas supply main.

SP Ausnet (Electricity)

A network of overhead lines exists in and around the township. It is expected that electricity supply to infill development or additional sub-divisions would be achievable, with upgrades to existing infrastructure possibly required to support this.

Telecommunications (Telstra)

A network of cables exists in and around the township, mainly along the larger roadways. It is expected that communications to infill development or additional sub-divisions would be possible, with upgrades to existing infrastructure possibly required to support this. There does not appear to be any optic fiber infrastructure in the vicinity of the Swan Reach township.

Drainage (Shire of East Gippsland)

Drainage records are currently being updated at the East Gippsland Shire Council and there is currently inadequate information to make reasonable recommendations. However, it is expected that utilization of existing drainage lines may be possible for infill development and minor subdivisions with requirements for discharge restrictions and temporary on site storage. Larger developments are expected to require new / upgraded drainage infrastructure with incorporation of Water Sensitive Urban Design (WSUD) features. i.e. wetlands or rain gardens. New sub divisions in close proximity to the river may benefit from connections directly into the river (following WSUD pre-treatment) and thus require less need for new or upgraded drainage infrastructure.

Johnsonville

Sewer (East Gippsland Water)

Existing reticulation sewers service the main township to the north and south of the Princes Hwy. East Gippsland Water advise that the sewer network is a low pressure network due to the flat topography of the area whereby individual dwellings pump up into the public sewer via privately owned pumps. Any future development would be expected to require the same principle be adopted with potential upgrade of the system depending on downstream capacity. All other developed areas do not appear to be serviced by reticulated sewers and East Gippsland Water advise that these areas use septic systems. A pump station on the south side of the Princes Hwy pump effluent southwards via a rising main.

Water (East Gippsland Water)

Existing water mains appear to service all of the main township. An existing 300mm water main routes along the Princes Hwy and East Gippsland Water have advised that in general there is no issue with new subdivisions connecting to this main. Existing 100mm and 225mm water mains route south of the township and may support modest new development, depending on the available capacity of the mains. New development to the north of the township will require installation of new water infrastructure to connect into existing water mains.

Gas (APA)

No gas reticulation exists in the township. There is a proposal to bring gas to Lakes Entrance, however this is not expected in the short term and Swan Reach is also thought to be too small to warrant an additional gas supply main.

SP Ausnet (Electricity)

A network of overhead lines exists along the main roads of the township. It is expected that electricity supply to infill development or additional sub-divisions would be achievable, with upgrades to existing infrastructure potentially required to support this.

Telecommunications (Telstra)

A network of cables exists along the main roads of the township. It is expected that communications supply to infill development or additional sub-divisions would be achievable, with upgrades to existing infrastructure potentially required to support this.

There does not appear to be any optic fiber infrastructure in the vicinity of the Johnsonville township.

Drainage (Shire of East Gippsland)

Drainage records are currently being updated at the East Gippsland Shire Council and there is currently inadequate information to make reasonable recommendations. However, it is expected that utilization of existing drainage lines may be possible for infill development and minor subdivisions with requirements for discharge restrictions and temporary on site storage. Larger developments are expected to require new / upgraded drainage infrastructure with incorporation of Water Sensitive Urban Design (WSUD) features. i.e. wetlands or rain gardens. New sub divisions in close proximity to the river may benefit from connections directly into the river (following WSUD pre-treatment) and thus require less need for new or upgraded drainage infrastructure.

General Sewer / Septic Tank Note (All Three Towns)

East Gippsland Shire Council have advised that in general the following parameters are to be followed regarding new development:

- New septic tanks are to be no closer than 60m to any water course, including ephemeral waterways and dams. This distance may be reduced to 30m if effluent is pre treated on site. Pre treatment to be agreed with the Shire.
- Development generally requires sewer connection where an existing sewer network is 'available'. This is to be confirmed on a site specific basis with the Shire and potential input from East Gippsland Water. Dense developments are very likely to require sewer connection.

Yours sincerely

Meinhardt Infrastructure and Environment