



Municipal Domestic Wastewater Management Plan

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Domestic wastewater is classified as wastewater arising from a domestic dwelling or a dwelling primarily used for domestic purposes. It can comprise of black water (toilet water), grey water (bath, laundry, basin, etc.) or both. Domestic wastewater must be adequately managed to prevent the transport of nutrients, pathogens and other pollutants to surface waters and to prevent any impacts on groundwater.

As the local public health authority, under current legislation, Council is responsible for ensuring domestic wastewater is appropriately treated onsite (e.g. with septic tanks) if it is not transported through the reticulated sewerage system controlled by a sewerage authority. Since government legislative/policy changes in 1988, council must ensure that household wastewater does not leave the property boundary and pose health and environmental threats. This is achieved through a permitting system, monitoring and compliance management for onsite wastewater treatment systems. Some older all-waste treatment type septic tank systems and some grey water does discharge off site and may cause environmental issues requiring closer council management.

In February 2005 the Municipal Association of Victoria (MAV) and the Department of Sustainability and Environment (DSE) invited Council to participate in the Country Towns Water Supply and Sewerage Program (CTWSSP). Participation in the program has enabled Council to access government funding (matched \$ for \$ cash and in-kind component from Council) to draft a Municipal Domestic

Wastewater Management Plan (MDWMP) and commence implementation of the plan. The plan follows the Model Municipal Domestic Wastewater Management Plan 2006 in accordance with the funding agreement Council has with the MAV.

Latrobe City Council joined councils in the North East Victoria Regional Health Group towards the development and implementation of common approaches to domestic wastewater policies and practices.

One of the key objectives of any MDWMP is the coordinated planning and action by councils and stakeholders. The essence of taking this regional approach is to provide a mechanism for developing strategies that will support domestic wastewater service coordination and standardization between councils and stakeholders. By doing so, these strategies contribute to achieving the goals of councils in providing a safe, healthy and sustainable environment for their respective communities.

The purpose of Council's MDWMP is to allow the widely varying risks associated with domestic wastewater to be identified and corresponding management strategies developed, implemented and monitored.

Apart from the townships of Tyers and Traralgon South, all towns in Latrobe City have reticulated sewerage provided by Gippsland Water. All towns in the municipality have reticulated water connected.

Executive Summary

In this plan, three specific towns/areas have been identified for closer management:

- Tyers Township
- Traralgon South Township
- Other (combined) areas of the municipality serviced by property specific septic tank systems.

Tyers has been identified as the highest priority with respect to wastewater management.

The plan encompasses the investigation and monitoring works completed in association with Tyers Township (involving the community, Gippsland Water, West Gippsland Catchment Management Authority, Environment Protection Authority, Department of Sustainability and Environment and Department of Human Services as well as Council officers.) Tyers has been identified as urgently requiring a collective form of wastewater management which could be a full reticulated sewerage system through to a low cost alternative sewerage option. Specific management strategies and action plans have been included for Tyers Township in years 1 and 2.

Other management strategies and actions address wastewater management in other non-reticulation areas of Latrobe City. These strategies are spread across the first 3 years of this plan. Actions are as follows:

1a Tyers	Investigate innovative wastewater disposal strategies.
1b Tyers	Development of a community information and education strategy on septic tank management. Development of a community information and education strategy on water minimization/conservation.
1c Tyers	Obtain funding for continued septic tank and environmental monitoring.
2. Other	Develop a septic tank system monitoring program for council owned properties.
3. Other	Review domestic wastewater information management system.
4. Other	Develop and review operational policies and procedures.
5. Other	Develop a septic tank system monitoring program for Traralgon South and other localities.
6. Other	Review of Action Plan.
7. Other	Development of a compliance auditing regime. Extend septic tank monitoring program to other localities.
8. Other	Evaluation of MDWMP.

Executive Summary

Implementation of the management strategies and actions will require a commitment and application not only by the council but also by regional, state and federal agencies and authorities.

Innovative wastewater management solutions are required which will maximise benefits in a cost efficient and effective manner.



Latrobe City has participated in a regional approach to domestic wastewater management which has been facilitated by the Australian Institute of Environmental Health North East Regional Group. This approach consisted of two stages.

The first stage was concerned with the development and implementation of common approaches to domestic wastewater practices across the Region. This has resulted in the development of a regional policy context paper and the development of a set of common operating policies and procedures addressing domestic wastewater, specifically permitting, compliance monitoring, and information management activities. These initiatives form part of the Management Action Plan of Council.

The second stage was the development of the local component for participating councils which, together with the material developed from the first stage, form Council's Domestic Wastewater Management Plan. It describes the circumstances surrounding the management of domestic waste water priorities within Latrobe City and contains a management action plan which addresses the identified domestic wastewater risks and priorities of unsewered towns in the municipality. It outlines Council's policy context, a preliminary profile of septic tank systems and related issues, an analysis of domestic waste water threats based on this information, and management strategies for these threats.

There is an ongoing need to collect data and other information that will provide the

evidence base needed for further decision making. For this (and other) reasons the precautionary principle provides a guideline for the development of domestic waste water management strategies. The precautionary principle is based on the understanding that:

1. If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
2. Decision making should be guided by
 - a) a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and
 - b) an assessment of the risk-weighted consequences of various options.

(Environment Protection Act 1970)

1. Background

The State Government, in its Our Water Our Future Action Plan, introduced the Country Towns Water and Sewerage Supply Program. As part of this program \$2.3 million was set aside for eligible Councils to undertake water supply and sewerage infrastructure planning and to develop domestic wastewater management plans.

Latrobe City has received funding to develop a domestic wastewater management plan during the 2005/06 financial year. The development of this plan is required under the State Environment Protection Policy (Waters of Victoria) and the Environment Protection Authority Septic Tanks Code of Practice (March 2003). The plan is to assess the environmental and health risks posed by existing and proposed septic tank systems within the municipality and identify the options for minimising each of these risks. To assist Councils to develop a DWMP the MAV released a Model Domestic Wastewater Management Plan to be used as the basis for the development of the DWMP.

A description of the legislative and policy context for domestic wastewater management is contained later in this document in the “Profile of Wastewater Management.”

There are an estimated 3,850 septic tank systems in Latrobe City and it is important that these systems are effectively managed by their owners. The discharge of domestic wastewater either does or has the potential to negatively impact on the natural environment and amenity, on human health as domestic wastewater contains disease producing

micro-organisms and chemicals, and on the economic environment if not managed and monitored adequately. The reasons for these impacts are that:

- Septic tank systems contribute high rates of nitrogen and phosphorous to water catchments due to surface run-off; and
- Septic tank systems directly contaminate the environment with bacteria. Up to ten times the amount of E coli (a disease producing bacteria found in animal/human waste) has been detected in catchments near residential areas compared to those catchments without residential areas. The highest levels of faecal coliforms were found in catchments serving septic tanks compared to other disposal systems.

It is the type, concentration and location of the discharge that determines the degree of impact on human health and the health of the environment. Sewage can also pollute soils that are used for agriculture. Other evidence has revealed that many private systems are not managed or maintained properly, suggesting that consistent enforcement and monitoring of installation, maintenance and adherence to regulations is required to reduce contamination.

Most waterborne disease risks arise when wastewater contaminates drinking water and waters used for recreational purposes, or if there is direct human contact with effluent. Bacteria and viruses (and other micro-organisms) in the wastewater may cause a range of

1. Background

diseases including Gastroenteritis, Shigellosis, Giardiasis, Cryptosporidiosis and Hepatitis' (James C Smith & Associates 2002 cited in Infocus Management Group 2004).



2. Purpose and Aims of the DMWMP

The DWMP is a document that articulates Council's risk management planning process for domestic wastewater. The goals of a DWMP are to:

- Protect public health and the physical environment in settled areas; and
- Promote environmental sustainability by reducing the impacts of domestic wastewater on the local receiving environments.

The key objectives are to:

- Develop Council's policy for the management of domestic waste water;
- Identify wastewater management priorities and develop short and long term strategies for the management of these priorities;
- Provide a systematic approach for assessing the costs, impacts and barriers to managing domestic wastewater; and
- Provide a mechanism for coordinated wastewater planning and services by council and other stakeholders.

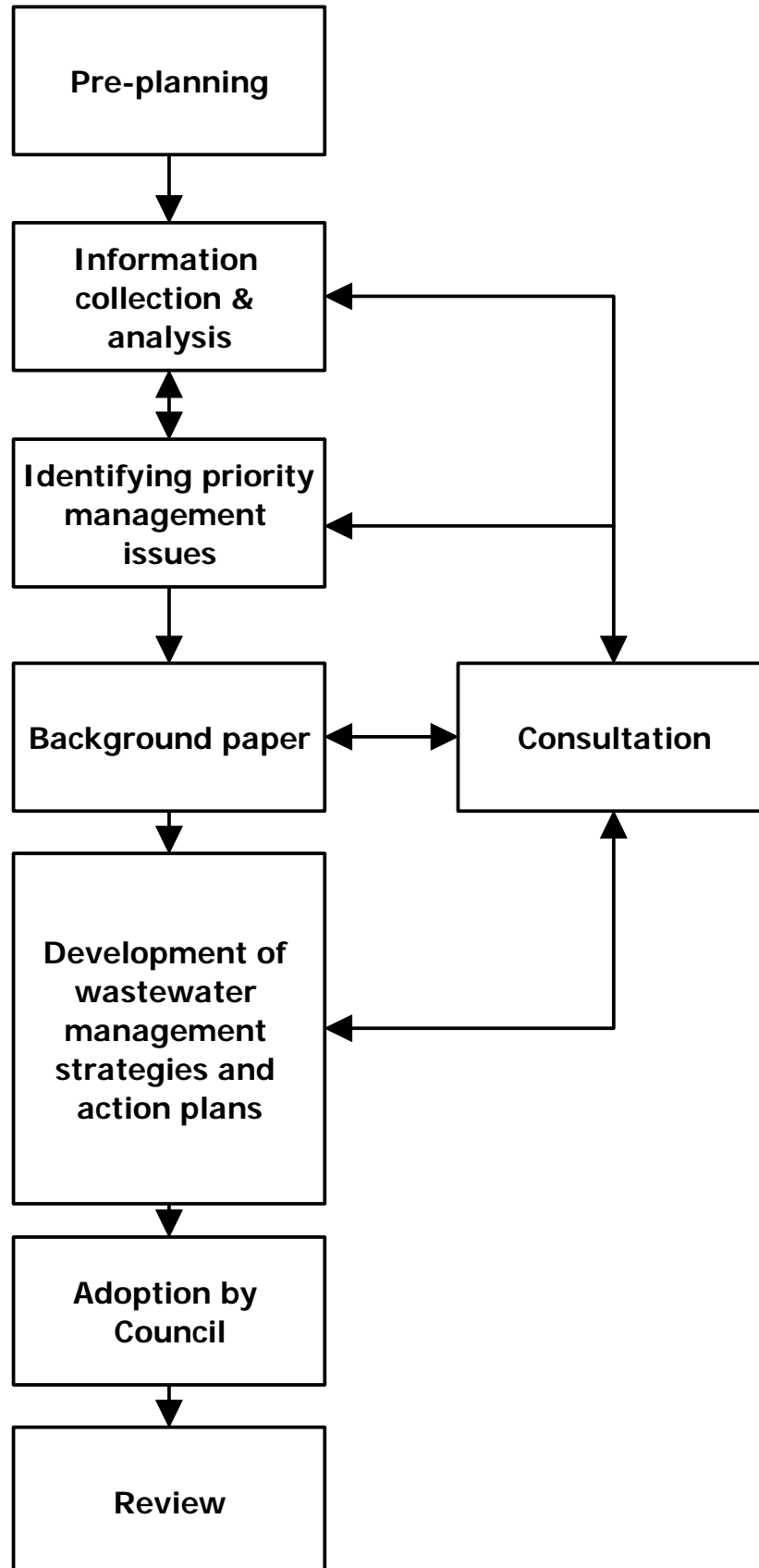
The key outcomes are:

- Protection of ground and surface waters in and around un-sewered townships and other areas from domestic wastewater
- The installation of appropriately designed and operated septic systems for difficult sites affected by slope, landslip, rainfall and poor soils
- Development of education and information strategies for owners of existing septic tank systems
- Development of assessment criteria for proposed sub-divisions in

- Un-sewered areas
- Development of operational policies for permitting, monitoring and compliance

3. Development Process

The development of the DWMP was managed by a project group consisting of Council officers and consultants (Appendix 1). The major planning process steps consist of the following:



4. Council Policy Context

This section outlines briefly Council's policies that relate to and inform the development of the DWMP.

4.1 Latrobe 2021 - The Vision for Latrobe Valley

Under this Vision the following ten aspirations of the Latrobe City community have been identified:

1. A safe environment for children
2. Good schools
3. Good public transport
4. Secure, satisfying, fairly paid jobs
5. Young people valued and having secure prospects in Latrobe City
6. Freedom from crime and violence
7. Respect for the environment and a clean, green, environment
8. Respect for different lifestyles
9. Care for the disadvantaged
10. Fit and healthy people

4.2 Council Plan 2005-2009

The Council Plan 2005-2009 was adopted in June 2005 and it articulates the City's strategic direction for the four years. The framework for this plan is the City's vision and mission which is as follows:

Vision

- A vibrant City, proud of its history and committed to environmental and economic sustainability;
- A caring and enterprising community sharing a lifestyle rich in choice;
- A harmonious community that nurtures its neighbourhoods,

- Recognises differences and engages and communicates with residents;
- A clean, safe, secure City in which to live, learn and work.

Mission

Latrobe City continues to implement the values, corporate directions and partnerships necessary to bring reality to Latrobe's Vision of sustainability, liveability, community capacity building and economic growth

Values

In working with, and for, the Latrobe community, Council is committed to:

- Planning strategically and acting responsibly;
- Providing responsive, sustainable and community focused services;
- Accountability transparency and honesty;
- Listening to, and working with, the community;
- Respect, fairness and equity.

There are four key strategic objectives being pursued by the Council Plan and these are sustainability, liveability, community capacity building, and governance. Of particular relevance to this DWMP are the strategic objectives of sustainability and liveability.

4. Council Policy Context

Sustainability

To promote the responsible and sustainable care of our diverse built and natural environment for the use and enjoyment of the people who make up the vibrant community of Latrobe Valley.

Liveability

To promote and support social, recreational, cultural and community life by providing both essential and innovative amenities, services and facilities within the municipality.

Clearly the concepts of safety, sustainability, and respect for the environment relate directly to the aims and objectives of this DWMP and thus require the integration of planning efforts in these areas particularly in the areas of biodiversity and native vegetation, protection of heritage features, and the general support for liveability and sustainability in small towns.

4.3 Latrobe City Stormwater Management Plan 2001/02

The aim of the stormwater management policy is to protect urban stormwater quality throughout the City. The plan focuses on urban stormwater in the three major towns of Moe/Newborough, Morwell and Traralgon and, apart from fringe areas of these centres, these towns are seweraged. Consequently the potential impact of septic tank effluent run-off within the broader drainage catchments was not examined.

Issues pertinent to this DWMP are:

- An unnamed creek in Tyers is receiving septic tank system overflow and grey water
- Edward Hunter Reserve being impacted on by septic waste;
- Little Morwell River and O'Grady Creek in unsewered areas adjacent to Boolarra being impacted on by grey water sullage.

4.4 Latrobe City Community Plan 2004 - 2008 (incorporating Municipal Public Health Plan)

The Latrobe City Community Plan represents a major commitment to engage and work with the community to cooperatively achieve improvements to the social, cultural, economic, built and natural environments for improved wellbeing of the community.

In this plan the wellbeing objectives identified by the community are grouped into eight themes:

- To promote active living and participation in community life
- To improve the quality, amenity and access to the municipal environment and infrastructure
- To protect and enhance the natural environment
- To minimize adverse community impacts on the environment including waste disposal

4. Council Policy Context

- To ensure quality services and support that promote social, physical, mental and spiritual health through all stages of life
- To build a strong, sustainable and diverse local economy and promote equity and access in participation
- To develop a strong sense of place and cultural values
- To facilitate positive leadership and stewardship throughout the community

Under each theme a range of actions derived from consultation processes have been proposed that will improve the wellbeing of the Latrobe City community. Latrobe City had three partners in this community planning process – Department of Human Services Municipal Public Health Plan as well as the Neighbourhood Renewal Program and the Environment Protection Authority Neighbourhood Improvement Plan.

5. Domestic Wastewater Profile

With a population of over 70,300 people, Latrobe City is a large municipality which is centrally located in Eastern Victoria, approximately 135 kilometres drive East of Melbourne. The City has four major centres located at Traralgon, Morwell, Moe/Newborough and Churchill, as well as a number of smaller outlying townships of Boolarra, Glengarry, Toongabbie, Traralgon South, Tyers, Yallourn North and Yinnar. Latrobe City encompasses an area of some 1,422 square kilometres. All towns except Tyers and Traralgon South are connected to a reticulated sewerage.

N.B. In this Plan the term locality is used to describe the general geographical area in which septic tanks are located and includes the defined township and surrounding rural areas.



5. Domestic Wastewater Profile

5.1 Numbers of septic tank systems

There are approximately 3,850 septic tank systems within the municipality. Table 1 details the localities in which these systems are distributed. Of these systems it is estimated that over 50% of installations are older than 20 years based on annual permit issues and available age profiles.

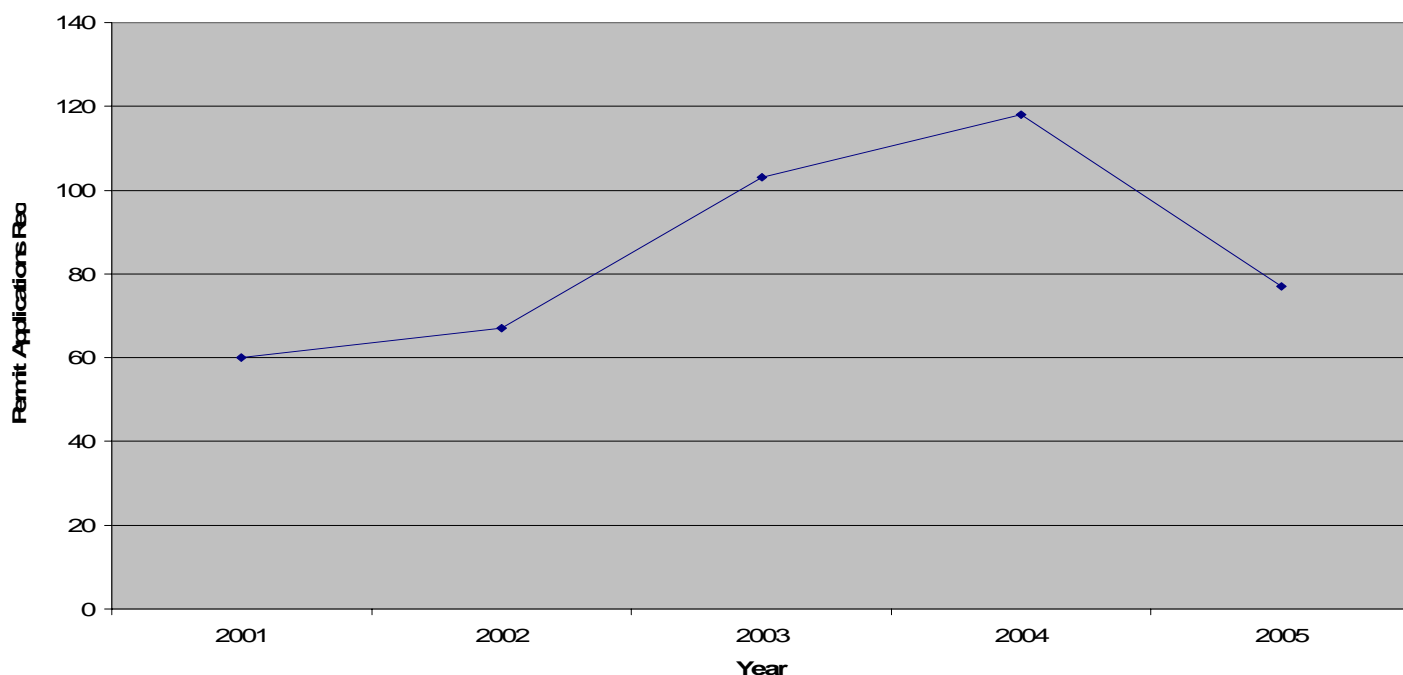
Based on the age of systems and permit history the majority of septic systems are conventional type systems with sub-surface disposal. The conventional septic tank systems installed after 1980 provided for all waste treatment while before this time systems provided for diversion of grey water, and these

installations included provision for approved off-site discharge.

The number of installations that are discharging off-site (whether with or without approval) is unknown and will be more clearly defined following future monitoring and auditing.

The number of new septic systems being installed is expected to remain reasonably constant at around 70 a year compared to an average of 85 a year over the last 5 years. The following Chart shows the number of permits issued for installation and alteration of septic tank systems from 2001 to 2005. A total of 425 approvals have been issued during this five year period. It is estimated that 5% of permits issued are for alterations to existing systems.

Chart 1 - Septic tank system permit approvals 2001 to 2005



5. Domestic Wastewater Profile

5.2 Distribution of Septic Tank Systems

Table 1 below details the distribution of septic systems by localities within the municipality.

Township/Locality	Septic Tanks	Township/Locality	Septic Tanks
BOOLARRA	199	MORWELL	97
BOOLARRA SOUTH	65	NEWBOROUGH	108
BUDGEREE	60	TANJIL SOUTH	71
CALLIGNEE	139	TOONGABBIE	135
CHURCHILL	90	TRARALGON/TRARALGON EAST	410
COWWARR	28	TRARALGON SOUTH TOWN AND ADJACENT	135
DRIFFIELD	34	TYERS TOWN AND ADJACENT	287
FLYNN/FLYNNS CREEK	51	YALLOURN / YALLOURN NORTH	146
GLENGARRY	99	YINNAR/YINNAR SOUTH	360
GLENGARRY NORTH	60	TOTAL	3,856
GLENGARRY WEST	32		
HAZELWOOD	75		
HAZELWOOD NORTH	402		
HAZELWOOD SOUTH	95		
HERNES OAK	118		
JEERALANG	32		
JEERALANG JUNCTION	208		
JUMBUK	18		
KOORNALLA	23		
LOY YANG	9		
MARYVALE	22		
MIRBOO	29		
MOE	72		
MOE SOUTH	147		

5. Domestic Wastewater Profile

The majority of septic tank systems in the City are located in the localities of Hazelwood (14.8%), Traralgon/Traralgon East (10.5%), and Yinnar/Yinnar South (9.3%). Although these areas have the highest percentage of septic tank systems they are not classified as “Priority Towns” as they do not pose a major threat to the environment. This is because allotments are predominantly rural residential, large in size, and have a soil composition maximizing the chances that domestic wastewater is retained on site and resulting in decreased impacts on the environment. However, the concentration of septic tank systems within these localities will be examined in conjunction with the risk based compliance monitoring model being developed by Council (Table 3).

5.3 Priority Towns

The City has identified the following towns in order of priority for provision of reticulated sewer. Both Tyers and Traralgon South townships are serviced by reticulated water.

Table 2- Priority towns and septic tanks systems

Township	No. of septic tank systems	Timeframe for Sewerage
Tyers and surrounds.	287 (65 in township)	ASAP
Traralgon South and surrounds	135 (60 in township)	10 – 15 YEARS
Total	422	

The Township of Tyers has been subject to extensive monitoring with results confirming that approx 78% of these sites dispose of their waste offsite. Offsite disposal into “kerb and channel” produce poor local visual amenity and contribute to the statistically significant risk of disease to humans from contact with contaminated water. Statements made in the “Tyers Sewage – Scoping Paper” (2001) by residents of Tyers substantiate the significant risk of disease, stating that “polluted smelly waste water was discharging onto their land” (See appendices 2 and 3 for septic tank performance profiling).

Tyers township was not recognised as a priority town for a government subsidised conventional reticulated sewerage scheme in the most recent round (2005-2005) of funding by the state government.

Therefore, not only the immediate need to continue to monitor existing septic tank systems, but also to embark upon an immediate program of water use minimization in the town and the investigation (including funding options) into the installation of a low cost collection, treatment and disposal system to ameliorate the current issues and risks associated with wastewater discharge at Tyers. The monitoring of existing septic systems has been identified in the DWMP Action Plans.

5. Domestic Wastewater Profile

A preliminary risk assessment for monitoring has been undertaken of septic tank sites based on land use planning (see Table 3). Other parameters will be developed and included to derive a Model that can be used to develop monitoring and audit programs.

Tyers and Traralgon South located in the township zone are both in the high risk category for monitoring and auditing. Although located in this category, the size of the allotments and soil type in Traralgon South does assist better management of septic tank systems. The small allotment size and heavier soil type in the Tyers Township places it in the very high risk category.

Table 3 - Preliminary Risk Assessment for Compliance Monitoring

Zone Code	Zone Description	Septic Tanks	Risk	Total
B1Z	Business 1 Zone	8	High	
ERZ1	Environmental Rural Zone 1	4	High	
LDRZ	Low Density Residential Zone	61	High	
PCRZ	Public Conservation and Resource Zone	7	High	
PPRZ	Public Park and Recreation Zone	2	High	
R1Z	Residential 1 Zone	216	High	
TZ	Township Zone	124	High	
UFZ	Urban Floodway Zone	1	High	423
IN1Z	Industrial 1 Zone	5	Low	
IN2Z	Industrial 2 Zone	1	Low	
IN3Z	Industrial 3 Zone	3	Low	
MUZ	Mixed Use Zone	7	Low	
PUZ1	Public Use Zone 1	3	Low	
PUZ2	Public Use Zone 2	1	Low	
PUZ4	Public Use Zone 4	1	Low	
RDZ1	Road Zone 1	4	Low	
RLZ2	Rural Living Zone 2	5	Low	
RLZ3	Rural Living Zone 3	1,167	Low	
RLZ4	Rural Living Zone 4	490	Low	
RLZ5	Rural Living Zone 5	36	Low	

5. Domestic Wastewater Profile

Zone Code	Zone Description	Septic Tanks	Risk	Total
RLZ6	Rural Living Zone 6	101	Low	
RUZ	Rural Zone	1,409	Low	
SUZ1	Special Use Zone 1	122	Low	
SUZ2	Special Use Zone 2	1	Low	
SUZ5	Special Use Zone 5	68	Low	
SUZ7	Special Use Zone 7	9	Low	3,433
	Total			3,856

Summary

Risk Category	Septics	%
High	423	11
Medium	0	0
Low	3,433	89
Total	3,856	100

5. Domestic Wastewater Profile

Land Use Planning Zones are the primary indicator being used to develop a risk based model for determining future permitting conditions and compliance monitoring of septic tank systems. The Zones provide a consistency across the State in respect to land use and identifies where development can occur with the installation of approved on-site wastewater treatment and disposal systems. Similarly the Zones can restrict development of land unless serviced by reticulated sewer.

The above figures indicate that most of the properties identified with septic tank systems are in Low Risk areas (89%) compared to the High Risk areas (11%) in the first assessment. When other parameters are added to the Model it would be expected that a number of properties will move from the Low Risk to Medium and possible High Risk.

Other parameters such as allotment sizes, soil types, proximity to waterways, system age and type and inundation areas etc. will be added to the Model as it is further developed.

The level of compliance monitoring required to be undertaken by the Council will have a correlation to the degree of risk. More rigorous monitoring of compliance will be required for septic systems in High Risk categories than for Medium and for Low. The cost implications for compliance monitoring are also relative to the risk being managed. The higher the level of monitoring required to be undertaken, then the higher the cost of administering a monitoring program.

6. Community Consultation

Council has developed its community consultation policy, Community Engagement – Policy and Strategy (June 2005) and is committed to effective community engagement. Council aims to provide community members with a clear understanding of the various means in which the community can converse with the Council. Below is a list of key communication strategies which will be used by Council to consult with residents in unsewered areas of the municipality in regard to the Domestic Waste Water Management Plan.

- **Print media and direct mail:** Aims to advertise to the community major issues including public meetings.
- **Public Meetings:** Provides an opportunity for council to inform, consult and listen to the local community. (Has been held at Tyers to discuss wastewater issues.)
- **Focus groups:** Small facilitated groups (15-20 people) comprising of individuals from key target groups (priority areas), provides an opportunity to discuss key concerns that affect a specific population. (A Tyers Community Committee has been formed following the public meeting.)
- **Council website:** electronic medium used to inform and provide feedback to messages left by community members.

The information and comments provided by the community through these activities will be assessed and incorporated into the draft Plan.



7. Assessment of Domestic Waste Water Threats

All wastewater is seen to be an inherent threat with potential to harm human health or damage the immediate receiving environment or more distant environments. The assessment of comparative wastewater threats within sub-catchments is dependent upon three particular factors:

- the number and density of septic systems within the sub-catchment area;
- the proportion of effectively operating septic systems; and
- the proportion of the types of systems installed, that is, systems that are designed to treat and disperse domestic waste water on site, systems that discharge treated waste off-site, and systems that discharge untreated waste water off-site.

The following table depicts the generic domestic wastewater threats which have been identified and these can be graded as Low, Moderate, and High:

Table 4 - Generic Domestic Wastewater Threats

Threat	Cause	Key Impacts
Failed systems with offsite discharge	<ul style="list-style-type: none"> • Damaged effluent disposal drains/trenches • Increased loading from extensions to dwellings • Design criteria not complied with • Faulty installation • New works & activities impacting on disposal envelope • Age • Septic tank full 	<ul style="list-style-type: none"> • Nutrients • Pathogens • Odour • Visual amenity • Oxygen depleting material • Local land degradation (erosion) • Pollution of water courses • Public health
Treated off site effluent discharge	<ul style="list-style-type: none"> • Permitted system 	<ul style="list-style-type: none"> • Pollution of water courses • Local visual amenity • Public health
Treated on site effluent systems	<ul style="list-style-type: none"> • Permitted system 	<ul style="list-style-type: none"> • Local visual amenity • Pollution of groundwater • Public health
Re-use of waste water	<ul style="list-style-type: none"> • Allowed re-use • Low water supply • Poor management by individual residents 	<ul style="list-style-type: none"> • Pathogens • Odour • Public health

7. Assessment of Domestic Waste Water Threats

Threat	Cause	Key Impacts
Untreated off site sullage discharge	<ul style="list-style-type: none"> • Poorly maintained system: • sand filter not functioning • sand filter bypassed to stormwater • septic tank full • permitted system 	<ul style="list-style-type: none"> • Nutrients & pathogens • Odour • Visual amenity • Oxygen depleting material • Local land degradation • Pollution of water courses • Public health
Ineffective regulation	<ul style="list-style-type: none"> • Failure to comply with permit conditions • Ineffective data base • Non-connection to sewer • Unclear regulatory responsibilities 	<ul style="list-style-type: none"> • Liability • Increased incidence of preventable pollution and environmental degradation • Increased risk to public health

A preliminary assessment of threats in each of the priority towns was conducted. The EPA Septic Tank Code of Practice and LCA Guidelines, survey data and local knowledge were used to identify the following as the assessment criteria for potential threats:

- Number of septic systems in the population centre;
- Proximity of systems to drains and watercourse(s);
- Allotment size;
- Soil and land characteristics;
- Flooding proneness;
- Type of system installed (on-site or off-site disposal);
- Age of installed systems; and
- Monitoring results of water courses.

The point source data collected and analysed for Tyers is the basis for quantifying the relative risk using the risk assessment tools of the MAV Model Plan (Refer Appendix 4). On the collection and analysis of point source data, a risk assessment will be conducted for Traralgon South and other localities.

The receiving water values outlined in the City's Stormwater Management Plan were accepted as the receiving values for this draft of the DWMP (Refer to Appendix 5).

7. Assessment of Domestic Waste Water Threats

Table 5 - Preliminary assessment of potential domestic waste water threats in sub-catchments

Towns/ urban centres	Threats	Threat assessment	Threat priority (High, Medium, Low)
Tyers Township	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> No. of systems/density <input checked="" type="checkbox"/> Proximity to watercourses <input checked="" type="checkbox"/> Located in water catchment <input checked="" type="checkbox"/> Allotment size <input checked="" type="checkbox"/> Type (on-site v offsite) of systems <input checked="" type="checkbox"/> Age of systems <input checked="" type="checkbox"/> Retic water available <input checked="" type="checkbox"/> Slope <input checked="" type="checkbox"/> Water quality (rec. env) <input checked="" type="checkbox"/> Soil characteristics <input checked="" type="checkbox"/> Flood prone <input checked="" type="checkbox"/> Rainfall <input checked="" type="checkbox"/> Poor maintenance <p>11 of 13 confirmed threats</p>	<ul style="list-style-type: none"> • 65 septic tank systems with 45 properties unable to contain waste on-site • 47 of 65 properties discharge waste off-site into gutter/drain • Reticulated water service • No discernible owner maintenance pattern from small survey undertaken • Allotment size • Discharge to creek – Latrobe River catchment • Located in water catchment (discharge to Latrobe River) • Very old systems • Soil type 	Very High
Traralgon South	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> No. of systems/density <input checked="" type="checkbox"/> Proximity to watercourses <input checked="" type="checkbox"/> Located in water catchment <input checked="" type="checkbox"/> Allotment size <input checked="" type="checkbox"/> Type (on-site v offsite) of systems <input checked="" type="checkbox"/> Age of systems <input checked="" type="checkbox"/> Retic water available <input checked="" type="checkbox"/> Slope <input checked="" type="checkbox"/> Water quality (rec. env) <input checked="" type="checkbox"/> Soil characteristics <input checked="" type="checkbox"/> Flood prone <input checked="" type="checkbox"/> Rainfall <input checked="" type="checkbox"/> Poor maintenance <p>5 of 13 confirmed threats</p>	<ul style="list-style-type: none"> • 60 septic tank systems • Reticulated water service • Allotment size • Minimal stormwater drainage of area • No requirement for soil percolation tests in red soil areas 	High

7. Assessment of Domestic Waste Water Threats

Conclusions

The current data appears to support the priority rating for each of these towns. Data on other localities will need to be collected and analysed to provide a City wide perspective and comparison. This is a requirement for future action plans.



The Background Paper has identified the following key issues in domestic wastewater management:

- Tyers has been assessed as a high risk locality and there is a need to urgently continue consideration, in conjunction with other stakeholders, sustainable options including conventional reticulated sewer and other low cost alternative options for the management of domestic wastewater.
- The City's existing septic tank profile is incomplete in terms of age of systems, performance of systems, and compliance with permit conditions by owners. Therefore, consideration for extensive investigation, data collection and profiling on systems.
- A requirement to consider how compliance management activities will be resourced.
- There is no data on the impact that domestic wastewater may be having on receiving environments particularly watercourses.
- Continued residential growth in unsewered areas of the City requires the development of policies and procedures to ensure that sites are capable of retaining and treating domestic waste on-site. There are no policies on the management of sites where waste is not retained on-site or on the management of grey water.
- There is a continuous need for Council to work closely with local and regional authorities with an interest in water conservation, wastewater
- management and environment protection to ensure relevant data and information exchanges freely between authorities.
- It is unknown what the level of community knowledge is regarding the effective management of septic tank systems.

9. Domestic Wastewater Management Priorities

The following management priorities have been developed to address the key findings:

9.1 Regulation of septic tank systems

- **Information management**

The current City wide domestic wastewater profile data is incomplete.

- **Capacity development – policies and procedures**

There is a need to develop policies to improve the management of domestic wastewater consistent with the legislation and Council's corporate goals of protecting and enhancing the natural environment and minimising environmental impacts from pollutants. The continued growth of the municipality will result in issues:

- Pertaining to residential growth and new developments in unsewered areas
- The re-use of grey water particularly as there is much interest in this issue and there are government incentives in place for re-use
- Consideration of special regulatory controls of septic tank systems in high risk areas i.e. sensitive receiving environments and where there are high environmental values, the concentration of ageing, and failing septic tank systems and where there is off-site discharge of effluent (treated or

otherwise).

In addition there shall be a requirement to develop inter-departmental protocols relating to building and town planning permits and the issuing of approvals for septic tank systems.

- **Auditing and monitoring of septic tank systems**

As the permitting authority Council needs to consider how it will ensure compliance with conditions on permits and other requirements by applicants/owners after the system has been installed. This is particularly critical in the identified high risk areas of Tyers and Traralgon South. This consideration will need to include the options available for resourcing these activities, and legislative constraints.

9. Domestic Wastewater Management Priorities

9.2 Community development and compliance

Although owners of septic tank systems have a legal responsibility under the Environment Protection Act 1970 to comply with permit conditions we must ensure that owners are aware of their responsibilities. A targeted community education, advisory, and promotion strategy for high risk areas would be appropriate, community engagement strategies such as focus groups or mail outs in priority towns would be effective initial community education/awareness techniques.

9.3 Sewerage services

Gippsland Water have advised there are no backlog sewerage programs for the City. In the identified high risk area of Tyers there is a need to consider not only conventional reticulated sewerage, but also other low cost alternative strategies for domestic wastewater management.

9.4 Environmental monitoring and protection

Together with inspections of individual septic tank systems/installations, there shall be a requirement to investigate, with other agencies (including EPA, water and catchment authorities), the overall impact that systems have collectively on the receiving environment. Environmental monitoring would include land capability, receiving environments and water courses.

Information derived from these investigations will assist in refining the threat assessment that has been undertaken for the DWMP, and assist in developing specific permit conditions for septic tank approvals and may impact on future planning zones and overlays.

9.5 Review

The collection of further information and the development of future water strategies by the government as it implements its White Paper “Our Water Our Future” will require a review of the DWMP within the next twelve months, and regularly thereafter.

To address each of these priorities Council will need to commit appropriate resources and these have been identified in the Management Action Plans.

10. Management Strategies and Actions

This section outlines Council's approach to the management of domestic wastewater priorities that have been identified through the development of the DWMP and the major strategies and specific actions planned for the next three years.

10.1 Management Approach

Council's management strategies for wastewater are informed by three factors:

1. Council's statutory duty
2. Council's capacity to undertake wastewater management services
3. The risks posed by ineffective septic tanks systems

Council has a statutory duty as it issues permits for the installation of septic tank systems. Further, under the State Environment Protection Policy (Waters of Victoria) Council there are requirements to:

- Ensure that strategic and statutory planning tools are consistent with the SEPP;
- Improve the management of urban stormwater and domestic wastewater (waste from septic tanks);
- Consider the capability of land (Land Capability Assessments), in unsewered areas, to contain wastes when making land use planning decisions and that such use is sustainable;
- Review their Municipal Strategic Statement every few years;
- Assess compliance of septic tank performance with permit conditions;

and develop a Domestic Wastewater Management Plan

Currently Council's domestic waste water management and regulatory services are limited to permitting and associated installation inspection activities and complaint investigation. The management of Council's statutory duty in relation to septic tank systems would require that it undertakes activities relating to the:

- Monitoring of system performance and general environmental monitoring (particularly in identified high risk areas);
- Compliance audits of septic tank system permit to install and use conditions; and
- Community information services relating to septic tank systems and their management.

The capacity of Council to undertake these activities and services requires a range of resources including:

- The collection of appropriate data at the point source through an ongoing monitoring program, development of an domestic wastewater information management system, and analysis of this information
- Review and development of operating policies and procedures
- The development of, and access to, a range of information by owners of septic tank systems and other stakeholders

10. Management Strategies and Actions

10.2 Management strategies

The following outlines the main management strategies of the DWMP:

1. Policy Review

A review of Council's operating policies and procedures for septic tank system permitting, installation, monitoring, fees, compliance auditing, enforcement, complaint resolution, and reporting is to be considered. This review will be integrated with the regional policies being developed as part of Stage 1 of the Regional Project

2. Information Management

To undertake an analysis of Council's domestic waste water data and information management system requirements. This strategy is also concerned with the interface of this system with Council's Graphical Information System (GIS). This analysis will be guided by the MAV Supporting Domestic Wastewater Management in Local Government - Smart Septics Program.

3. Community education, information, and communication

Broad based information

Develop information in a range of formats including electronic for use by the owners of septic tank systems (based on MAV Community Education Resource developed through the Smart Septics Program). This includes the correct management of systems, access to

applications for alterations and installations to systems, and water conservation strategies.

Specific community education activities

Undertake the development of specific education and information strategies particularly for Tyers and Traralgon South, but also owner/users of septic tank systems generally throughout the City. Strategies will include educating the community to the values of waste water management and water conservation.

4. Monitoring of septic tank systems and environmental impacts

Continue to undertake targeted monitoring of Tyers and extend monitoring to include Traralgon South and other localities. Thus develop a more comprehensive domestic wastewater profile for each locality and ultimately the City.

5. Compliance auditing of identified high risk localities

Undertake the development of an audit system to ensure regulatory requirements are being complied with by owners. With Gippsland Water, develop a sewer connection program for those properties where sewer is or becomes available. With relevant authorities and the community, develop strategies to facilitate low cost alternative options for wastewater management.

10. Management Strategies and Actions

10.3 Action Plans

The attached management action plans have been developed to implement each of the above strategies.

To achieve the action plans will require resourcing, either specifically or as part of Council's internal processes. Some actions are time commitment; others are more specific funding requirements. Some actions will need funding via Council's budget process and others can hopefully be sourced externally.

Management Action Plans and strategies are detailed in the following pages.



Management Action Plans – Tyers Township

Year 1 (2007/08)	Action Steps	Team/ Partners	Responsible person	Comments/ Status	Monitoring & performance indicators
1a. Strategies - Tyers <i>Investigate innovative waste disposal strategies</i> Objectives : <ul style="list-style-type: none"> To develop a long term solution to domestic wastewater management in Tyers To minimise impacts on receiving environment around Tyers 	a) Establish an Advisory Committee of appropriate stakeholders and potential funding bodies	Council, State and Federal Agencies, Tyers Community Rep.	Man. Health Services	Has commenced. To be completed July 2007	Committee formed. All stakeholders represented.
	b) Identify and assess wastewater management options	Advisory Committee	Man. Health Services	Has commenced. To be completed September 2007	All options identified and assessed.
	c) Develop a cost benefit analysis of options	Advisory Committee; Consultant	Man. Health Services	Has commenced. December 2007	Appropriate CBA conducted for each option.
	d) Develop strategies for funding of preferred options.	Advisory Committee; Consultant	Man. Health Services	Has commenced. To be completed December 2007	Strategies formulated and implemented.

Management Action Plans – Tyers Township

Year 2 (2008/09)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
	e) Obtain funding and develop project brief	Advisory Committee	Man. Health Services	To be completed by March 2008	Funds obtained. Project brief developed.
	f) Call for Expressions of Interest	Advisory Committee	Man. Health Services	To be completed by April 2008	Receipt of EsOI.
	g) Evaluate and accept preferred EOI g) Project Plan developed and implemented	Advisory Committee	Man. Health Services	To be completed by June 2008	Project Plan developed and approved. Project implemented by due date.

Management Action Plans – Tyers Township

Year 1 (2007/08)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
<p>1b. Strategies - Tyers</p> <p><i>Development of a community information and education strategy on septic tank management.</i></p> <p><i>Development of a community information and education strategy on water minimization/conservation.</i></p> <p>Objectives :</p> <ul style="list-style-type: none"> • To reduce loading on/discharge from systems • To maximise the designed criteria of the system • To increase owners' awareness of the importance of managing septic tank systems • To improve compliance with permit conditions • To prevent alterations exceeding the design capacity of existing approved systems • To minimise impacts on receiving environments 	a) Ascertain information needs of septic tank owners via council records	Council staff	Man. Health Services		Needs obtained and analysed.
	b) Develop a communication strategy <ul style="list-style-type: none"> – Consultation with internal staff (cust. services, communications) and other relevant authorities – Develop information material using Smart Septic resource – Dissemination via dedicated website and hard copy materials 	Council Staff. Smart Septic Program. Estate Agents. Property Conveyors. Legal profession.	Man. Health Services	Incorporated over the 3 years of the plan	Strategy developed as per needs analysis.
	c) Evaluate strategy	As per b) plus community survey.	Man. Health Services	Incorporated in years 2 & 3 of the plan	75% completion rate for community survey.
	d) Revise and continue implementation of strategy	Council Staff	Man. Health Services	Incorporated in years 2 & 3 of the plan	Revision dates met and strategy revised in accord. with feedback.

Management Action Plans – Tyers Township

Year 1 (2007/08)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
1c. Strategies - Tyers <i>Obtain funding for continued septic tank and environmental monitoring program around Tyers</i> Objectives : <ul style="list-style-type: none"> To ascertain impacts on receiving environments To develop and maintain a more complete/current profile on property, including specific systems performance (point source) 	a) Assess legislative options to address monitoring and monitoring limitations	Local Government Domestic Wastewater Special Interest Group. (LGDWSIG)	Man. Health Services		All option identified and assessed.
	b) Raise options for funding with Advisory Committee	LGDWSIG	Man. Health Services		Report to Advisory Comm. By July 2007.
	c) Develop a funding proposal and submit to council, catchment management authority, EPA and other relevant parties. Address option and limitations	LGDWSIG	Man. Health Services		Development of proposal. Council report.
	d) Obtain funding. e) Develop and implement a risk based monitoring program	LGDWSIG	Man. Health Services		Sufficient funds obtained to implement program. Program developed.
	e) Provide written monthly reports on monitoring program results to stakeholders	LGDWSIG	Man. Health Services		Submitted monthly.

Management Action Plans - Other

Year 1 (2007/08)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
<p>2. Strategy:</p> <p><i>Development of a septic tank system monitoring program for council owned properties</i></p> <p>Objectives:</p> <ul style="list-style-type: none"> To ensure that council septic tank systems are operating effectively and meet permit and licensing requirements To develop a complete septic tank system profile on each high risk sub-catchment area 	a) Identify and verify via Water Authority and Council Rates Department, all unsewered council properties	Council Staff	Man. Health Services		Establishment of a data base with 95% accuracy.
	b) Develop and implement a monitoring regime for sites not EPA licensed based on systems type and information needs.	Council Staff	Man. Health Services		Monitoring regime developed and implemented.
	c) Obtain compliance reports for EPA licensed systems	Council Staff	Man. Health Services		All reports received.
	d) Provide a report to council with recommendations for improvement including costing	Council Staff	Man. Health Services		Report based on monitoring results provided by June 2008.
	e) Review and revise monitoring program that takes into account all matters identified as part of monitoring program.	Council Staff	Man. Health Services		Program reviewed and reported on.

Management Action Plans - Other

Year 1 (2007/08)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
<p>3. Strategy:</p> <p><i>Review Domestic Wastewater Information Management System</i></p> <p>Operational objectives:</p> <ul style="list-style-type: none"> To develop a system matching the requirements of both current and future services in domestic wastewater management using the MAV information management model Identification of properties retaining or otherwise waste on-site Identification of trends in wastewater technology and its application, receiving environment impacts, servicing levels 	a) Review/Upgrade existing council information management systems to store the additional data requirements as detailed in Table A (MAV Information Management Specification)	Council Staff Consultant	Man. Health Services		Existing STEMS system upgraded
	b) Modify the existing information management systems to provide the reporting needs as identified in Table A	Council Staff Consultant	Man. Health Services		Existing STEMS system modified
	c) Verify existing database of location of septic tank systems within the municipality	Council Staff Consultant	Man. Health Services		95% verification success as a minimum.
	d) Develop a profile of all septic tank systems within the municipality	Council Staff Consultant	Man. Health Services		Profile developed.
	e) Implement a system for collection and recording of permit compliance and audit information	Council Staff Gippsland Water	Man. Health Services		System based on simplicity of use, developed.
	f) Develop a visual profile of septic tanks on the corporate Geographical Information System (GIS)	Council Staff	Man. Health Services		Based on c) above verification.

Management Action Plans - Other

Year 1-2 (2007/08 & 2008/09)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
<p>4. Strategy:</p> <p><i>Development and review of operational policies and procedures</i></p> <p>Objectives:</p> <ul style="list-style-type: none"> • To develop a range of operating and other policies relating to domestic wastewater and its management (based on draft regional policies and procedures) • To manage Council's exposure and statutory duties in wastewater management • To improve the effectiveness of service provision 	<p>a) Establish a scope of policies and procedures relating to the following areas:</p> <ul style="list-style-type: none"> • Permitting (new and alteration) policies and procedures (Assessment criteria, LCA's, fees, permit conditions, site inspections) • Joint operating procedures with internal service units (planning, building) on planning permits (sub-divisions, infill development, grey water reuse) • Joint operating procedures with external agencies on information exchange (sewer availability, connections, priority areas for sewerage) • Exploration of common protocols and benchmarks with neighbouring councils 	LGDWSIG	Man. Health Services	Has began. To be completed by July 2007	Policies and procedures for City developed.
	<p>b) Draft policies and procedures and consult with internal and external stakeholders</p>	LGDWSIG	Man. Health Services	To be completed by Sept.. 2007	Completed after consultation with stakeholders
	<p>c) Develop a procedure and policy manual based on regional model to be adopted by council</p>	Council Staff Consultant	Man. Health Services	To be completed by Oct. 2007	Present to Nov. 2007 council meeting.

Management Action Plans - Other

Year 1-2 (2007/08 & 2008/09)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
	d) Develop a grey-water re-use policy, in consultation with stakeholders, to be adopted by council	LGDWSIG Agencies	Man. Health Services	To be completed by March 2007	Based on industry acceptable model
	e) Review and amend local planning controls, in consultation with stakeholders to address domestic wastewater management	LGA; MAV; Council Staff incl. Planning	Man. Health Services	To be completed by June 2008	Takes into account local needs and industry model
	f) Promote policies to the community and service providers (jointly with Communication Strategy)	Council Staff	Man. Health Services	To be completed by December 2007	Completed by due date.

Management Action Plans - Other

Year 2 (2008/09)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
<p>5. Strategy:</p> <p><i>Development of a septic tank system monitoring program for Traralgon South and other priority localities</i></p> <p>Objectives:</p> <ul style="list-style-type: none"> To develop a complete septic tank system profile on each high risk sub-catchment area To ascertain specific systems' performance (point source) To assess surface water and ground water quality To monitor and assess the impact of wastewater management strategies 	a) Assess legislative options to address monitoring and monitoring limitations. Determine council obligations and explore solutions	LGDWSIG	Man. Health Services		All options identified and assessed. Statutory and common law obligations determined.
	b) Implement a risk based program for monitoring septic tank systems.	LGDWSIG	Man. Health Services		All risks identified
	c) Determine base-line ground water / surface water quality.	Catchment Management Auth. Council Staff			Quality parameters determined.
	d) Implement a system for periodic reporting of monitoring and auditing results to stakeholders	LGDWSIG	Man. Health Services		Include users of system in development. Simplicity of use by users gauged.
	e) Investigate the implementation of a charging system to recover the cost of monitoring	LGDWSIG	Man. Health Services		Charging regime fits within legal requirements.

Management Action Plans - Other

Year 2 (2008/09)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
6. Strategy: Review of Action Plan Objectives: <ul style="list-style-type: none"> To report progress to management, stakeholders and community To ensure any changes in government policy and community expectations are assessed and reflected in the Action Plan To update Action Plan 	a) Identify any changes to government policies through discussion with stakeholders	Council Staff Consultant	Man. Health Services	December each year of the plan	All stakeholders identified and consulted; feedback analysed.
	b) Assess any feedback received from the community through implementation	Council Staff Consultant	Man. Health Services	December each year of the plan	All feedback to be assessed and analysed.
	c) Revise Action Plan based on feedback from stakeholders & community.	Council Staff Consultant	Man. Health Services	December each year of the plan	Annual review completed and Action Plan revised.
	d) Review operational policies as appropriate.				
	e) Draft report for management and community on progress in domestic wastewater management	Council Staff Consultant	Man. Health Services	December each year of the plan	Report drafted and presented taking into account feedback and review.

Management Action Plans - Other

Year 3 (2009/2010)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
<p>7. Strategy:</p> <p><i>Development of a compliance auditing regime</i> <i>Extend septic tank system monitoring program to other localities</i></p> <p>Operational objectives:</p> <ul style="list-style-type: none"> To manage council's statutory duty in relation to enforcement activities To minimise the impacts from domestic waste water on the environment and protect public health To comply with legislative expectations of government 	a) Assess current legislative options/tools, identify gaps and lobby government for improved enforcement powers	LGDWSIG	Man. Health Services		Gap analysis completed. Appropriate government rep/s. targeted. Enforcement powers improved
	b) Review and develop compliance policies and procedures	LGDWSIG	Man. Health Services	June each year of the plan	Review complete Policies and procedures developed
	c) Implement a program for auditing owner/occupier compliance with permit conditions	LGDWSIG	Man. Health Services		Program implemented
	d) Implement a program for auditing septic tank system performance	LGDWSIG	Man. Health Services		Program implemented
	e) Implement a system of periodic reporting of monitoring and auditing results to stakeholders	LGDWSIG	Man. Health Services		Include users of system in development. Simplicity of use by users gauged.
	f) Investigate the implementation of a charging system to recover the cost of auditing	LGDWSIG	Man. Health Services		Report and recommendations to council

Management Action Plans - Other

Year 3 (2009/2010)	Action Steps	Team/ Partners	Responsible person	Comments / Status	Monitoring & performance indicators
<p>8. Strategy:</p> <p>Evaluation of Domestic Wastewater Management Plan</p> <p>Objectives:</p> <ul style="list-style-type: none"> • To assess implementation of strategies and progress towards objectives • To identify successes and constraints to implementing strategies • To report progress to management, stakeholders and community • To re-develop the Plan 	a) Develop evaluation objectives and design evaluation process in consultation with stakeholders	Council Staff Consultant All identified Stakeholders	Man. Health Services		Objectives developed and approved by committee and management.
	b) Undertake evaluation and analyse results	Council Staff Consultant	Man. Health Services		Completed by due date.
	c) Draft report for management and community on progress in domestic wastewater management	Council Staff	Man. Health Services		Report completed and presented to stakeholders.
	d) Re-develop DWMP	Council Staff Consultant	Man. Health Services		Plan developed and presented to council.

Appendix 1

DWMP Project Management Group Members

Andrew Mackintosh	Manager, Health Services, Latrobe City Council
Phill Clifford	Municipal Domestic Wastewater Management Plan Project Coordination Officer, Latrobe City Council
Jim Smith	Infocus Management Group, Kew 3101
Neil Dunbar	WDMS, Traralgon 3844

Appendix 2

Country Towns Water Supply & Sewerage Program (CTWS&SP) Preliminary Assessment of Sewerage Needs For Tyers

(Note – The attachments mentioned in this Assessment are not included in this appendices. The attachments were part of the CTWS&SP matrix report.)

Preliminary Assessment of Sewerage Needs	
Town:	Tyers 0.49 sq. km. area
Council:	Latrobe City Council
Water Authority:	Gippsland Water
Regional EPA Office:	Gippsland - Traralgon
Number of Allotments	
Number of Allotments <1000? m ²	80
Number of Allotments > than1000? m ²	15
Number of Houses	
Age of septic tanks	2 – 40+ years
% Septic tanks built after 1980 (approximate)	30%
Town Characteristics	
Is the town:	
In a designated water supply catchment	Yes
Adjacent to a natural environment of significance	Yes Stream to Latrobe River
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Issue of waste water in stream raised by Catchment Management Authority and DSE whilst undertaking erosion control investigation in creek downstream from town.
Visual Assessment	Has been undertaken as part of wider investigation.
Smell/colour/Quality	Visual evidence of waste water in street channel and drains. Odour and colour evident.
Evidence that septic effluent is not being contained on site	Yes via individual property investigation
% of houses where there is evidence that effluent is not contained on site	Substantial – 65%
Comments	Each property has been individually assessed and recorded.
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) <i>comments</i>	Not known
Storm water Quality information (if available) <i>comments</i>	Grey water and package plant discharge to SWD or to street channel thence to creek.
Stream contamination (if available) <i>comments</i>	High. Bacterial analysis/survey has been undertaken by council under EPA guidance.
Impacts on native vegetation - flora and fauna (if available) <i>comments</i>	Not available.
Impacts on aquatic environment (if available) <i>comments</i>	Phosphorous levels impact on stream health.
Public Health impacts (if available) <i>comments</i>	High. Waste water discharge to SWD and street channels which discharge to an open concrete lined channel which runs through middle of town past a pre-school and playground thence to a creek passing through farmland to the Latrobe

	River .
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available) <i>comments</i>	Not known
Stream contamination Information (if available) <i>comments</i>	High. Bacterial analysis undertaken.
Impacts on native vegetation (if available) <i>comments</i>	Not known
Public Health impacts (if available) <i>comments</i>	High. Contaminated run-off into open drains/channels.
Microbiological water quality information (if available) <i>comments</i>	Contaminated – ascertained from regime of micro analysis on channels/streams.
Presence of Blue Green algae (if available) <i>comments</i>	Not available.
<i>Predictors of adverse Public Health and Environmental Impacts</i>	
Soil type – impact on effectiveness of septic tank	Sandy clay over heavy clay
Geological features (if available) <i>comments</i>	Town located on lower slopes of hilly terrain.
Rain fall – impact on effectiveness of septic tank	65% discharge off site, either grey water or treatment plant discharge. Mean rainfall = 788mm/ann.
Ground water level (if available) <i>comments</i>	Not currently available – refer to Infrastructure Report for past and anecdotal data.
Number and scale of commercial premises	1 petrol station/supermarket. 1 school – 150 students/teachers.
Level of waste generated from commercial/Industrial premises	Est. 5 – 10%
Existing Public Health and Envir. Considerations	
Can above issues be addressed through septic tank upgrade	Maybe on a small no. of larger allotments.
Can above issues be addressed through improved septic tank management	Maybe on a small no. of larger allotments.
EPA comments (if available) <i>comments</i>	Refer to attachments.
CMA/Regional DSE comments (if available) <i>comments</i>	Refer to attachments.
Have you had discussions with DHS? (if available) <i>comments</i>	Refer to attachments.
Have you had discussions with the water authority? (if available) <i>comments</i>	Refer to attachments.
Future Development	
Future needs related to development within the town <i>comments</i>	Reticulated sewerage would enable development of lower cost residential

	allotments in an affordable area for younger families, only 10km from a major centre.
Estimated time at which the provision of services be required	ASAP
Growth rate of the town	Restricted due to lack of reticulated sewerage. Est. 5% over past 10 years.
Number of Planning permits rejected	One – quarter acre lot subdivision due to lack of reticulated sewerage.
Councils Ranking of Priority Needs	1 st priority
General Comments	Refer to attachments which indicate Council's concern over the years, and commitment to progressing Tyers towards reticulated sewerage.

Appendix 3 Septic Tank System Assessment Results for Tyers

TYERS TOWNSHIP SEPTIC TANK SYSTEM ASSESSMENT PROGRAM									
Site	Road	Lot	Plan	Permit	Year	System Type	Treatment	Disposal	Comments
1	Tyers-Walhalla	1	30583	592	1981	All Waste	Sand Filter	Off Site	To Kerb & Channel
2	Tyers-Walhalla	2	30583	1030	1987	All Waste	Sand Filter	Off Site	To Kerb & Channel
3	Tyers-Walhalla	3	30583	24	1964	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
4	Tyers-Walhalla	5	30583	23	1964	Split	WC to sand filter?		
							Sullage	Off Site	To Kerb & Channel
5	Tyers-Walhalla	7	30583	25	1964	Split	WC to ground		
				234	Alteration		Sullage	Off Site	To Kerb & Channel
6	Tyers-Walhalla	4	18560		est. 1964	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
7	Hinde Street	1	208408	1180	1989	All Waste	To ground	On Site	No discharge noted
8	Hinde Street	2	208408		est. 1970	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
9	Tyers-Walhalla	Pt	C/A 14D		est. 1970	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
10	Tyers-Walhalla	1	13557		est. 1975	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
11	Main Street	2	118337	634	1982	All Waste	Sand Filter	Off Site	To Barrel Drain
12	Main Street	2	136119		est. 1970	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
13	Main Street	Pt	C/A 14D		est. 1970	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
14	Main Street	Pt	C/A 14D		est. 1975	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
15 & 64	Main Street	Pt	C/A 14D	76-03	2003	AquaTreat	Plant	On Site	Trickling System to ground
(This house re-built and split system replaced with treatment plant.)									
16	Main Street	Pt	C/A 14D		est. 1965	Split	WC to ground		

							Sullage	Off Site	To Kerb & Channel
17	Main Street	Pt	C/A 14D	1235	1990	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
18	Main Street	19/20	30583	207	1977				
				1447	1994	All Waste	Sand Filter	Off Site	To Kerb & Channel
19	Main Street	5	33108	776	1983	All Waste	Sand Filter	Off Site	To Kerb & Channel
20	Main Street	4	33108	924	1985	All Waste	Sand Filter	Off Site	To Kerb & Channel
21	Main Street	3	33108	1052	est. 1970's	Split	WC to ground		
							Sullage	Off Site	To Kerb & Channel
22	Main Street	PC	352811	1298	1991	Clear Water 80	Plant	Off Site	To Barrel Drain
23	Main Street	2	302505		est. 1995	All Waste	Sand Filter	Off Site	To Barrel Drain
24	Main Street	Pt 2	120494	1228	1990				
				1807	1997	All Waste	To ground	On Site	Reln Drain O/K (Soccer Club)
25	Main Street	Pt 2	120494		est. 1980	All Waste	To ground	On Site	Seeps off site (Football Club)
26	Main Street	8	27464		est. 1970's	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
27	Main Street	7	27464		est. 1970's	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
28	Main Street	6			est. 1970's	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
29	Main Street	6	18714		est. 1970's	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
30	Main Street	5	18714		est. 1970's	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
31	Main Street	4	18714		est. 1970's	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
32	Main Street	3	18714		est. 1970's	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
33	Main Street	2	18714	315	1978	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
34	Main Street	1	27464		1997	All Waste	Sand Filter	Off Site	To Barrel Drain
35	Main Street	2	27464		1997	All Waste	Sand Filter	Off Site	To Barrel Drain
36	Main Street	3	27464		1997	All Waste	To ground	Overflow	
								off Site	To Barrel Drain
37	Main Street	4	27464		1997	All Waste	To ground	Overflow	

								off Site	To Barrel Drain
38	Main Street	5	27464		1997	All Waste	To ground	Overflow	
								off Site	To Barrel Drain
39	Main Street	1	99216		1997	Split	WC to ground		
							Sullage	Off Site	To Barrel Drain
40	Main Street	C/A	1& 1A		est. 1980	All Waste	To Ground	On Site	No Discharge Noted (Hall)
41	Main Street	C/A	1B		est. 1980	All Waste	Sand Filter	Off Site	To Open Drain (School)
42	Main Street	2	83243	254	1977	All Waste	To Ground	On Site	No Discharge Noted
43	Main Street	1	83243	1861	1999	All Waste	To Ground	On Site	No Discharge Noted
44	Gilmours Road	C/A	5B			Split	WC to ground		
							Sullage	Surface	No Discharge Noted
45	Shekiniah Dve	1	413258	630	1982	Split	WC to ground		
							Sullage	Surface	Discharge Noted
46	Shekiniah Dve	5	200372	988	1986	All Waste	Sand Filter	Off Site	To Barrel Drain
47	Gilmours Road	1	200372	987	1986	All Waste	Sand Filter	Off Site	To Barrel Drain
48	Gilmours Road	PC	351191	1307	1992	All Waste	To Ground	On Site	No Discharge Noted
49	Gilmours Road	1	406128	351	1978	All Waste	To Ground	On Site	No Discharge Noted
50	Mt Hope Rd	1	91408		est. 1980	Split	WC to ground		
							Sullage	Off Site	To Open Drain
51	Mt Hope Rd	C/P	106975	1307	1992	Split	WC to ground		
							Sullage To Ground	On Site	Maybe Discharge
52	Mt Hope Rd	2	406128	758	1983	Split	WC to ground		
							Sullage To Ground	On Site	Maybe Discharge
53	Mt Hope Rd	3	406128	404	1978	Split	WC to ground		
							Sullage To Surface	Off Site	To Surface Drain
54	Hall Dve	2	345120	630	1982	All Waste	To Ground	On Site	Site O/K for All Waste
55	Hall Dve	5	123130	692	1982	All Waste	To Ground	On Site	Site O/K for All Waste
56	Mt Hope Rd	2	77102			Split	WC to ground		
							Sullage	Off Site	To Surface Drain
57	Mt Hope Rd	Pt	C/A 5E	1827	1997	All Waste	Sand Filter	Off Site	To Barrel Drain
58	Mt Hope Rd	Pt	C/A 5E	885	1985	Split	WC to ground		
							Sullage To Ground	Off Site	To Surface Drain
59	Tyer-Walhalla	6	30583	1521	1996	All Waste	Sand Filter	Off Site	To Kerb & Channel

60	Shekiniah Dve	6	200372	1552	1997	All Waste	To Ground	On Site	No Discharge Noted
61	Shekiniah Dve	4	200372	1427	1994	All Waste	Sand Filter	Off Site	To Barrel Drain
62	Main Street	(CFA No System)							
63	Hinde Rd	Pt	C/A 14D	"10-02	2002	All Waste	To Ground	On Site	Site O/K for All Waste

TYERS TOWNSHIP SEPTIC TANK SLUDGE AND SCUM LEVELS ASSESSMENT PROGRAM									
Site	Road	Date	Scum	Sludge	Year	System Type	Treatment	Disposal	Comments
2	Tyers-Walhalla	20-May-05	Nil	400mm	1987	All Waste	Sand Filter	Off Site	Sole occupant. Pumped out 10 years ago. Two tank system.
9	Tyers-Walhalla	20-May-05	60mm	250mm	est. 1970	Split	WC to ground Sullage	Off Site	No one home. WC only septic
11	Main Street	20-May-05	300mm	200mm	1982	All Waste	Sand Filter	Off Site	Advised owner to have pumped out.
14	Main Street	20-May-05	Nil	Nil	est. 1975	Split	WC to ground Sullage	Off Site	Recently pumped out. WC only septic.
19	Main Street	20-May-05	150mm	100mm	1983	All Waste	Sand Filter	Off Site	To be pumped out 1 week. Done 5 yrs ago
26	Main Street	20-May-05	300mm	450mm	est. 1970's	Split	WC to ground Sullage	Off Site	To be pumped out. Done 7 yrs ago. WC only septic.
28	Main Street	20-May-05	125mm	150mm	est. 1970's	Split	WC to ground Sullage	Off Site	Pumped out 3 years ago.
37	Main Street	20-May-05	100mm	100mm	1997	All Waste	To Ground	Overflow off site	Sole occupant.
63	Hinde Rd	20-May-05	50mm	350mm	2002	All Waste	To Ground	On Site	System only 2 years old. Seeping out of ground at soakage lines.

Appendix 4

Risk Assessment MAV Model Domestic Wastewater Management Plan

4.2.3 Risk Assessment

Risk magnitudes should be calculated for all combinations of values and threats within each town by assigning a numerical score for each qualitative rating (ie. 1 = Low, 2 = Moderate, 3 = High and 4 = Very High). Using the table below the risk magnitude for each combination of threat and value can be calculated: Risk

= Value x Threat. The numbers should be regarded as a reflection of local knowledge and experiences rather than absolute values of risk. The risk matrix then becomes a tool in quantifying the relative risks in each town and the basis for prioritising wastewater management issues within a town and across the municipality for the project management team.

RECEIVING VALUES		WASTEWATER THREATS					
		Failed systems with offsite discharge	Treated off-site effluent discharge	Treated on-site effluent discharge	Untreated off-site sullage discharge	Ineffective regulation	Re-use of waste water
Public health	Infectious disease transmission						
	Exposure						
Environmental	Surface water quality						
	In-stream biodiversity						
	Groundwater quality						
Amenity	Visual/odour						
Economic	Development potential						
	Property value						
Location	Concentration of effluent						
Soil type	Absorption characteristics						

Appendix 5

Receiving Water Values Outlined in Stormwater Management Plan

Extract From Latrobe City Stormwater Management Plan

3 Stormwater Management Issues in Latrobe City

Stormwater management issues were developed for the urban areas of Latrobe City through the risk assessment process, which as described in Section 2.3, investigates the values of the receiving waters to protect; the threats from the urban activities which may impact them; and the sensitivity of the specific value to the specific threat.

3.1 Values to be Protected

Waterways have a range of values and beneficial uses for people, as well as other environmental values, and in many cases these are of very high importance to a town and region. These values can be adversely affected by polluted stormwater.

The values were categorised under the following headings:

Environment In-stream habitat - ecological values based on water quality

Riparian flora and fauna – quality of native on-bank habitat support

Amenity Recreation – public passive and active utilisation, ie. fishing, walking

Aesthetics and Landscape – beauty of water environment and surrounds

Cultural Aboriginal – places of significance ie. ceremonial sites

Non-Aboriginal – places of significance ie. pioneering trails

Stormwater Flood conveyance – contribution to protection against flooding

Water quality treatment – contribution to water quality management

Economic Property values – land value associated with proximity to water

Other values – other economic benefits, ie. tourism, irrigation

3.2 Receiving Waters And Values

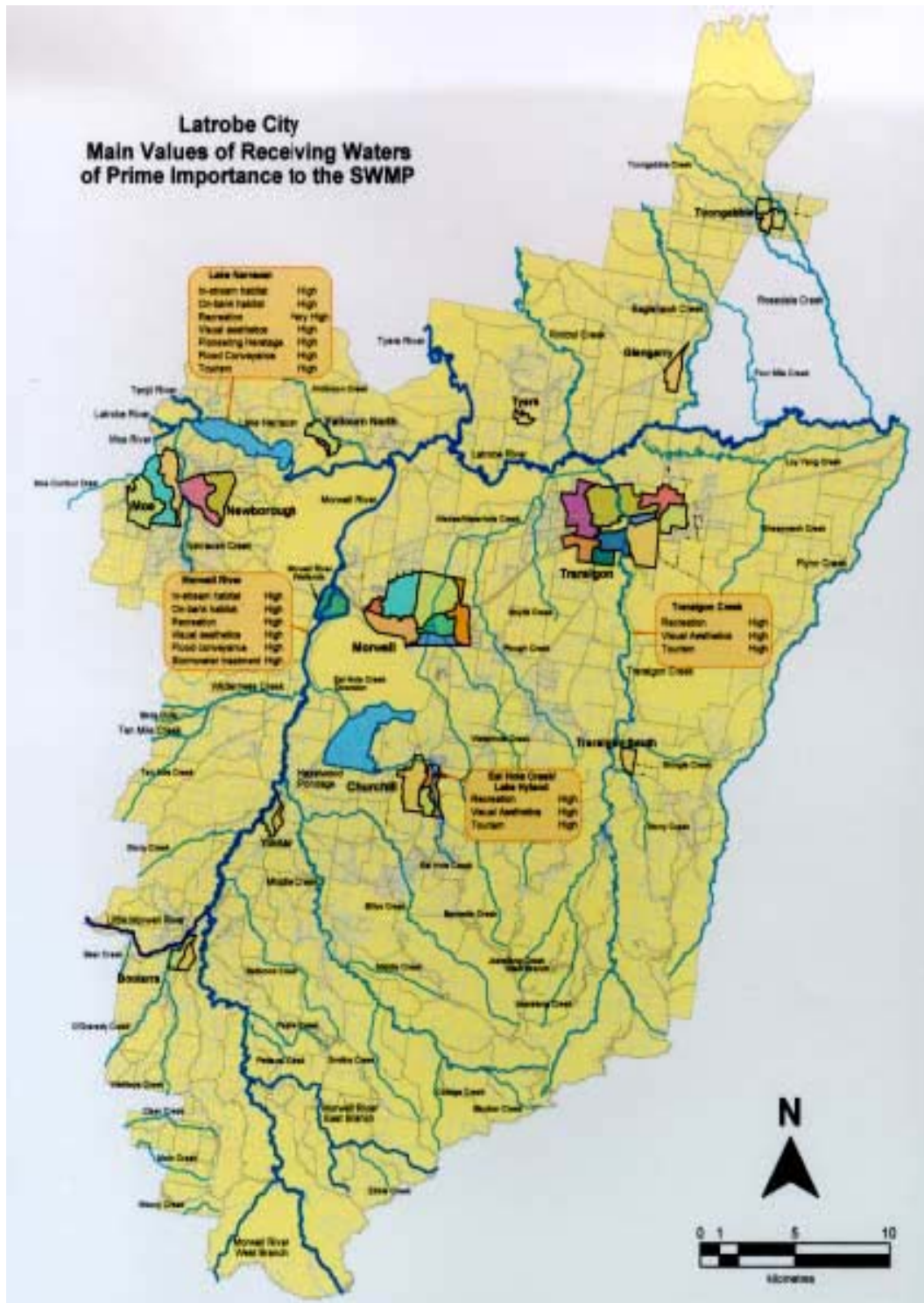
The urban area of Latrobe City has a network of piped drains and small open channels that carry stormwater to the natural waterways and water bodies. Thirty four waterways were identified as urban receiving waters in Latrobe City.

The Steering Committee and the Project Working Group determined the more important values of the receiving waters. The key values of the five receiving waters of primary importance to this stormwater management plan, as identified through the risk assessment process, are described below and reflect the consensus on the relative importance of the values. More detailed descriptions of the entire list of receiving waters can be found in Volume 2 of the Plan.

Figure 1 also shows the main values for the five key receiving waters.

Although all urban areas in Latrobe City eventually drain to the Latrobe River and then to the Gippsland Lakes, these waters were not included as primary receiving waters for evaluation. By being common to all sub-catchments, these waters if

considered, would interfere with the issue prioritisation process of the risk assessment. It is however important to view the urban stormwater runoff from Latrobe City in a regional context; as the adverse impacts on the water quality of local waterways have an accumulated effect on these highly significant downstream rivers, lakes, wetlands and marine parks.



ADDENDUM

**PROFILE OF WASTEWATER
MANAGEMENT**

Introduction – Regional Approach

The Australian Institute of Environmental Health North East Regional Group has, for some time, been working toward the development and implementation of common approaches to domestic wastewater practices across the region. With the announcement of State government funding for Municipal Domestic Wastewater Management Plans (MDWMP's), the Group determined to use this opportunity to advance further these regional approaches to domestic wastewater management. Latrobe City Council participated in this regional approach.

One of the key objectives of any DWMP is the coordinated planning and action by councils and stakeholders. The essence of taking this regional approach is to provide a mechanism for developing strategies that will support domestic waste water service coordination and standardisation between councils and stakeholders. By doing so, these strategies contribute to achieving the goals of councils in providing a safe, healthy and sustainable environment for their respective communities.

Participating councils in this regionally based approach are:

- Alpine Shire
- Indigo Shire
- Mansfield Shire
- Mount Alexander Shire
- City of Greater Shepparton
- City of Wodonga
- Moira Shire
- Murrindindi Shire
- Macedon Ranges Shire
- Rural City of Benalla
- Latrobe City

It is recognised that:

- Wastewater issues cross over municipal boundaries;
- Wastewater services are provided on both a regional and local basis;
- The sharing of wastewater management information is critical for integrated wastewater planning, service delivery and monitoring; and
- The sharing of information on policies and practices assists in the professional development of individual in wastewater management strategies.

The achievement of integrated planning and service delivery will require a regional approach to:

- Permitting policies and processes;
- Compliance monitoring policies and processes; and

Municipal Domestic Wastewater Management Plan – Latrobe City Council

- Data sharing processes between stakeholders.

This part of the document provides a description of domestic wastewater and outlines the regional context for domestic wastewater management including the legislation and responsibilities of regional stakeholders.

1.0 Domestic wastewater and its management

Wastewater is water generated by domestic and commercial activities including toilet, bathroom, clothes washing and kitchen cleaning activities. Wastewater contains high levels of micro-organisms, chemicals (nutrients) and other contaminants capable of causing human illness and adversely impacting on the local environment.

Usually wastewater is either transported away from the property for treatment by a centralised sewerage system, or treated on-site by a septic tank system which consists of a septic tank and a specific means of effluent disposal e.g. absorption lines. Wastewater by definition includes both 'black water', or toilet sewage, (sewerage), and 'grey water', or sullage which is comprised of laundry, shower, washing and kitchen wastewater.

Only septic tank systems approved by the Environment Protection Authority can be installed and septic tank systems can only be permitted in areas where sewer is not available. Any new septic tank system installed in an unsewered area must be capable of treating all wastes, that is, toilet wastewater and grey water on-site i.e. on the allotment. However, in the past although toilet wastewater from residences was held, treated and disposed on-site, grey water may have been discharged untreated beyond the allotment into stormwater drains, if provided, and the surrounding environment.

2.0 State Government policy context

Our Water Our Future – Securing Our Water Future Together is the current primary policy of the Victorian government relating to water and wastewater. An important implementation initiative is the *Country Towns Water and Sewerage Program*. This program provides state government funding to assist local government in developing Domestic Wastewater Management Plans (DWMP).

Under the provisions of the State Environment Protection Policy (Waters of Victoria) (SEPP) local councils need to develop a DWMP in conjunction with water authorities and the community. It is intended that this regionally focused strategy will provide an integrated regional framework to manage the risk on-site domestic wastewater systems (i.e. septic tank systems) and assist each participating councils to meet the specific objectives of the SEPP which are to:

Municipal Domestic Wastewater Management Plan – Latrobe City Council

- review land capability assessments and available domestic wastewater management options to prevent the discharge of wastewater beyond allotment boundaries and prevent impacts on groundwater beneficial uses;
- identify the preferred options, together with costs, funding needs, timelines and priorities; and
- provide for the compliance assessment of on-site domestic wastewater systems with permit conditions.

3.0 Regulatory roles and responsibilities in domestic wastewater management

3.1 Regulatory policy

The *Environment Protection Act 1970* aims to create a legislative framework for the protection of the environment in Victoria having regard to the principles of environment protection. There are a number of principles that have been adopted within the legislation including:

Principle of integration of economic, social and environmental considerations

Sound environmental practices and procedures should be adopted as a basis for ecologically sustainable development for the benefit of all human beings and the environment. This requires the effective integration of economic, social and environmental considerations in decision making processes with the need to improve community well-being and the benefit of future generations. The measures adopted should be cost-effective and in proportion to the significance of the environmental problems being addressed.

The precautionary principle

If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. Decision making should be guided by careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and an assessment of the risk-weighted consequences of various options.

Principle of intergenerational equity

The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

Principle of conservation of biological diversity and ecological integrity

The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making.

Principle of wastes hierarchy

Wastes should be managed in accordance with the following order of preference:

- (a) avoidance;
- (b) re-use;
- (c) re-cycling;
- (d) recovery of energy;
- (e) treatment;
- (f) containment;
- (g) disposal.

3.2 Septic tank systems

Part IXB of the Environment Protection Act 1970 specifically deals with septic tank systems using a two tier approval process. The EPA has overall responsibility for legislation, policy and standards for wastewater management systems. All domestic on-site and off-site wastewater systems need to be issued with a Certificate of Approval by the EPA before they are permitted to be installed in Victoria. There are approximately eighty (80) different types of systems (composting; incineration; aeration; absorption; irrigation) that have been approved by the EPA. Each of these systems has associated conditions of use. Councils cannot issue a permit if a proposed system is not of a type or combination approved by the EPA or if its use would be contrary to any declared State Environment Protection Policy (SEPP).

Domestic wastewater management in Victoria is one of the environmental health responsibilities delegated to local government where the Council acts as the ‘permitting’ authority and approves the installation of a septic tank system. Councils subsequently monitor compliance by the owner of their obligations and ensure adequate maintenance and performance of the septic tank system. The Environment Protection Authority (EPA) is responsible for any system that discharges capacities of 5,000 litres or more of effluent daily. Generally these are commercial and industrial applications.

The Act provides for the formulation and adoption of State environmental protection policies (SEPP's) by government. These policies identify beneficial uses of the environment to be protected, environmental objectives appropriate to those uses, and plans and programs for the attainment of those objectives. The SEPP (Waters of Victoria) sets out requirements for managing domestic wastewater. Under this SEPP (Waters of Victoria), which came into effect on 15 March 1988, Councils are

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responsible for ensuring new residential subdivisions are provided with reticulated sewerage at the time of subdivision or that the allotments are capable of treating and containing all domestic wastewater within the boundaries of each allotment.

The SEPP also outlines the need for councils to:

- Assess the suitability of the land for an on-site system prior to approving a development;
- Ensure that sewerage is provided at the time of sub-division if the use of on-site systems would result in wastewater being discharged beyond allotment boundaries or would impact on groundwater beneficial uses;
- Ensure that permits are consistent with guidance provided by the EPA and the Septic Tank Code of Practice (Publication 891);
- Identify existing unsewered allotments incapable of preventing wastewater from being discharged beyond allotment boundaries and/or preventing impacts on groundwater beneficial uses; and
- Where relevant develop a domestic waste water management plan.

Offsite discharge to water may only be approved where council is satisfied that the applicant has demonstrated that:

- The subdivision occurred prior to 15 March 1988;
- The effluent cannot be retained on site;
- The discharge will be consistent with the SEPP (Waters of Victoria); and
- The discharge will comply with the requirements set out in *EPA Publication 629 Domestic wastewater management series – Development approvals in sewered and unsewered areas*. This includes having wastewater analysed every three (3) months.

The amended SEPP gazetted in 2003 clearly requires that on-site domestic waste water:

... needs to be managed to prevent the transport of nutrients, pathogens and other pollutants to surface waters and to prevent impacts on groundwater beneficial uses (SEPP June 2003).

Clearly occupiers of premises have the responsibility to manage their system in accordance with the permit conditions and the *Code of Practice – Septic Tanks On-*

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site Domestic Wastewater Management (2003). The protection of beneficial uses will be achieved through maintenance of the current level of environmental quality or through realistically achievable improvements. Beneficial uses of water environments include:

- aquatic plants and animals
- water suitable for aquaculture and edible seafood
- water based recreation
- water suitable for human consumption
- cultural and spiritual values
- water suitable for industry and shipping
- water suitable for agriculture

Beneficial uses are those uses and values of water environments that communities want protected both now and in the future. Not all beneficial uses are currently protected in all water environments and the challenge ahead is to work together to both protect and improve the environment.

State government policies on the environment requires that any development not connected to reticulated sewerage be designed to ensure wastewater can be contained on an individual site in accordance with the *Code of Practice – Septic Tanks On-site Domestic Wastewater Management (2003)*.

The *Health Act 1958* provides for a more general duty on councils with regard to public health. Councils are required to prevent disease, prolong life and promote public health through organised programs including the prevention and control of environmental health dangers and diseases. This also includes the developing and enforcing of up-to-date public health standards and intervening if the health of people within the municipal district is affected.

The nuisance provisions of the Act are an important provision that has often been used to manage waste water issues. These provisions are:

- 39A. This Part applies to nuisances which are, or are liable to be, dangerous to health or offensive and in particular to nuisances arising from or constituted by--*
- (a) any building or structure; or*
 - (b) any land, water or land covered by water; or*
 - (c) any animal, bird or pest animal within the meaning of section 108A; or*
 - (d) any refuse; or*
 - (e) any noise or emission; or*
 - (f) any state, condition or activity; or*

*(g) any other matter or thing--
which is, or is liable to be, dangerous to health or offensive.*

40. Definition

(1) In this Part--

"offensive" means noxious, annoying or injurious to personal comfort.

(2) In determining whether a state, condition or activity is a nuisance which is, or is liable to be, dangerous to health or offensive--

(a) regard must not be had to the number of persons affected or that may be affected by the state, condition or activity; and

(b) regard may be had to the degree of offensiveness of the state, condition or activity.

41. Duty of councils

A council must remedy as far as is reasonably possible all nuisances in its municipal district.

Councils have broad statutory responsibilities for ensuring the protection of the public health which includes the enforcement of standards associated with the wastewater management (James C Smith & Associates 2002) and proactive management through the development and implementation of either general environmental health plans or specific wastewater management plans.

The *Local Government Act 1989* also defines the general duties and purpose of a council including a facilitating objective which is to promote the social, economic, and environmental viability and sustainability of the municipal district. A range of other functions and duties are also outlined including the implementation of the provisions of other legislation which have been delegated to Council by Parliament under Part 1A (Infocus Management Group 2004:9-13).

4.0 Water and sewerage

The Department of Sustainability and Environment (DSE) is the lead agency for the management of water resources across the state and is working with the community and other stakeholders including water authorities, catchment management authorities and local government to deliver the 110 initiatives outlined in the *Our Water Our Future* strategy. This strategy is concerned with:

- Repairing rivers and groundwater systems
- Pricing water to encourage people to use it more wisely
- Permanently saving water in towns and cities through water saving and recycling measures
- Securing water for farms through water allocation and trading systems.

(Source: <http://www.dse.vic.gov.au/dse/wcmn202.nsf/Home+Page>)

Victoria's water authorities supply water and sewerage services to customers within their respective regions. The water sector is made up of:

- Three retail authorities (City West Water, South East Water and Yarra Valley Water) and one bulk water authority (Melbourne Water) servicing Melbourne;
- Thirteen urban water authorities serving regional Victoria
 - Barwon Water
 - Central Highlands Water
 - **Coliban Water**
 - East Gippsland Water
 - **Gippsland Water**
 - Glenelg Water
 - **Goulburn Valley Water**
 - **North East Water**
 - Portland Coast Water
 - South Gippsland Water
 - South West Water
 - **Western Water**
 - Westernport Water;
- Two urban rural water authorities providing combined water, sewerage and irrigation domestic and stock services (Grampians Wimmera Mallee Water and Lower Murray Urban and Rural Water); and

Municipal Domestic Wastewater Management Plan – Latrobe City Council

- Three rural water authorities providing irrigation, domestic and stock services and some bulk supply in regional Victoria (First Mildura Irrigation Trust, Gippsland and Southern Rural Water and Goulburn Murray Rural Water).

(Source: <http://www.dse.vic.gov.au/DSE/wcmn202.nsf/LinkView/>)

Map 1 below shows the seventeen non-metropolitan water authorities in Victoria. In North-East Region there are two authorities – North East Water and Goulburn Valley Water. For Latrobe City the relevant authority is Gippsland Water and for Macedon Ranges it is Western Water and Coliban Water.

Map 1 Non-Metropolitan Urban Water Authorities



(Source: http://www.dpi.vic.gov.au/dpi/vro/maps.nsf/pages/Victoria-NaturalResources-WaterSurfaceWater_nmuwa?Opendocument accessed 2 February 2006)

4.1 North East Water

North East Water provides water and sewerage services to 36 towns, villages and cities in North East Victoria, serving an estimated population of 90,000 people in an area of approximately 20,000 square kilometres. The region extends from Corryong in the east, along the Murray River to Yarrawonga, then south to Benalla and the alpine towns of Bright, Mt. Beauty and Dartmouth. The communities serviced are diverse in size and characteristics. They range from about 12,300 assessments in Wodonga to less than 50 in the rural hamlet of St. James.

North East Water provides a wide range of services to the community ranging from water and wastewater treatment and distribution including wastewater reuse through to assistance to new developers, plumbing services and trade waste. The Authority operates 30 water treatment sites throughout the region (Source: <http://www.nerwa.vic.gov.au/about/profile.htm> accessed on 03/02/06).

The following municipalities are serviced by the Authority:

- Indigo Shire
- Alpine Shire
- Towong Shire
- Rural City of Benalla
- Moira Shire
- City of Wangaratta
- City of Wodonga

4.2 Goulburn Valley Water

Goulburn Valley Water services an area of 20,000 square kilometres in Northern Victoria and covers 50 cities and towns with a total population of 105,000 people. It also services 15 major companies operating food processing plants in the region. Key centres in the region include Shepparton/Mooroopna, Cobram, Kyabram, Tatura, Numurkah, Seymour, Mansfield, Kilmore and Alexandra as well as a number of smaller communities.

The functions currently carried out by Goulburn Valley Water over this area include water harvesting and storage, water treatment and supply, and wastewater collection, treatment and re-use (Source: Goulburn Valley Water Organisation Profile 2001 accessed 2 February 2006).

The municipalities serviced by the Authority are:

- City of Greater Shepparton
- Campaspe Shire
- Moira Shire

- Mitchell Shire
- Murrindindi Shire
- Mansfield Shire
- Strathbogie Shire

4.3 Coliban Water

Coliban Water was established on 1 July 1992 and is a regional urban water authority with an area of responsibility covering approximately 20% of Victoria. Coliban Water manages, maintains and operates over 50 reservoirs and water storage basins across North-Central Victoria and provides water and wastewater services to rural and urban customers across an area of 16,550 square kilometres with a population of 130,000. The service area includes 55 towns or service systems, extending from Cohuna and Echuca in the north to Kyneton and Trentham in the south. The western boundary incorporates Boort, Wedderburn, Bealiba and Dunolly and the eastern boundary includes Heathcote and Tooborac.

The major activities of Coliban Water are to provide water and wastewater services to urban and rural customers. The services encompass water harvesting and storage, urban water supply, wastewater collection, treatment, reuse and disposal, and rural water supply. Coliban Water also provides wastewater collection services, including trade waste treatment, to a number of large businesses (Source: Coliban Water Annual Report 2005 accessed 2 February 2006).

The municipalities serviced by the Authority include:

- Campaspe Shire
- Gannawarra Shire
- Loddon Shire
- City of Greater Bendigo
- part of Goldfields Shire
- Macedon Ranges Shire
- Mt Alexander Shire
- Part of Hepburn Shire

4.4 Western Water

Western Region Water Authority (trading as Western Water) is one of Victoria's eleven urban water authorities, providing water and wastewater services to more than 49,000 properties over an area of 3000 square kilometres.

Western Water supplies water and provides wastewater collection and treatment services to townships extending from Lancefield in the north, to Melton and Rockbank in the south, Myrniong in the west and Bulla in the east. Towns serviced

Municipal Domestic Wastewater Management Plan – Latrobe City Council

by Western Water include Sunbury, Melton, Bacchus Marsh, Gisborne, Riddells Creek, Macedon, Woodend, Romsey and Lancefield.

The water district has two main storages, Lake Merrimu and Rosslynne Reservoir, both of which are managed by Southern Rural Water. These reservoirs supply the Melton and Bacchus Marsh (Merrimu) and Macedon Ranges and Sunbury (Rosslynne) districts (Source: <http://www.westernwater.vic.gov.au/content.asp?data=050E07024D4C4F494849> & 'About Western Water' from the Western Water Quality Report 2004-05).

The municipalities serviced by the Authority include Macedon Ranges.

4.5 Gippsland Water

The Central Gippsland Region Water Authority, trading as Gippsland Water, provides high quality water and wastewater services to all customers, including local industries of state and national significance, to ensure social, environmental and economic benefits for Central Gippsland.

Gippsland Water is the largest non-metropolitan water authority in Victoria in terms of total water supplied and volume of wastewater collected. It manages 19 water treatment plants, 12 wastewater treatment plants and two ocean outfall pipelines, both of which discharge to Bass Strait. Gippsland Water also provides significant solid and liquid waste recovery services at its resource facility at Dutson Downs.

Gippsland Water's geographic region stretches from Drouin in the west to Stratford in the East, and from Mirboo North in the south to Rawson and Briagolong in the north. The region supports a population base of approximately 130,000 people (*Gippsland Water Annual Report 04-05*).

The municipalities serviced by the Authority include Latrobe City.

5.0 Rural Water Authorities

Gippsland and Southern Rural Water and Goulburn Murray Rural Water are the rural water authorities geographically associated with this project. The major functions of these authorities are the harvesting, storing and delivering water, and ensuring water is available to a wide range of customers. Gippsland and Southern Rural Water is responsible for managing rural water resources across the southern half of country Victoria with customers being principally farmers, graziers and growers of southern Victoria, in addition, the Authority supplies water in bulk to non-metropolitan urban water authorities and to Latrobe Valley electricity generators. Goulburn Murray Rural Water is responsible for the central northern area of Victoria accounting for 70% of Victoria's stored water with the dominant segment comprising irrigation and drainage services.

Rural Water Authorities are involved in the capital works such as headworks (building of infrastructure like dams), and the development and management of irrigation schemes. These authorities also involved in the issuing of surface water and groundwater licences, establishing water supply protection areas, streamflow management plans, and groundwater management plans (Source: http://www.srw.com.au/gen_info/default.html).

Authorities have also developed environmental management systems to continuously improve the delivery of sustainable water supply and this includes the safety of this supply.

6.0 Catchment Management Authorities

The councils participating in this Regional Domestic Wastewater Management Strategy fall within five CMAs - North East, Goulburn Broken, North Central, West Gippsland, and Port Phillip/Westernport. CMAs have responsibility for the protection and restoration of land and water resources within their respective catchment areas. Their specific role in waterways management includes responsibility for the management of floodplains, stormwater runoff and pollution, rural drainage, water quality and nutrient management, water supply, catchment protection, wetlands and restoration of degraded waterways.

Map 2 Catchment Management Authorities



(Source: http://www.dpi.vic.gov.au/dpi/vro/maps.nsf/pages/vic_cma2?Opendocument accessed 2February2006)

6.1 North East Catchment Management Authority

The North East Region of Victoria covers approximately 1.9 million hectares of Victoria, including three major catchments: the Upper Murray, Kiewa and Ovens. More than 55% of the North East consists of public land encompassing over 200 reserves including National Parks, Wilderness Parks and Historic Reserves.

The Authority has two types of business:

- **Direct:** Waterway management, floodplain management, vegetation management, water quality programs; and
- **Co-ordination:** Implementation of the Regional Catchment Strategy through the NECMA's partnership with DPI/DSE, Local Government, Landcare and the broader community (Source: <http://www.necma.vic.gov.au> accessed on 03/02/06).

The municipalities that are within the Authority are:

- City of Wodonga
- Indigo Shire
- Wangaratta City
- Alpine Shire
- Towong Shire
- Parts of Moira Shire
- Part of East Gippsland Shire

6.2 Goulburn Broken Catchment Management Authority

The Goulburn Broken Catchment comprises the catchments of the Goulburn and Broken rivers and part of the Murray River Valley. The catchment covers 2,431,655 Ha or 10.5% of the State of Victoria. Although it occupies just 2% of the Murray Darling Basin, the Goulburn Broken Catchment region provides 11% of the Basin's stream flow. The region stretches from close to the outskirts of Melbourne in the south to the Murray River in the north. The Catchment includes Victoria's main water storage, Eildon and the popular Mt Buller Alpine Resort. The CMA was established in 1997 to develop and oversee the implementation of the Regional Catchment Strategy. The Authority is working to ensure land and water resources are protected and enhanced as well as improving the region's social wellbeing, environmental quality and productive capacity in a sustainable manner.

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The CMA also has several Coordinating Committees (including Working Groups) to ensure a consistent region-wide approach to issues such as regional development, floodplain management, public lands, biodiversity, river environment and water quality, and pest plants and animals (Source: www.gbcma.vic.gov.au accessed 01/02/06).

Municipalities falling within the catchment are:

- Moira Shire
- Campaspe Shire
- Mitchell Shire
- Murrindindi Shire
- Mansfield Shire
- Strathbogje Shire
- Benalla Rural City
- City of Greater Shepparton.

6.3 West Gippsland Catchment Management Authority

West Gippsland Catchment Management Authority (WGCMA) is responsible for waterway and catchment management across the south-east corner of Victoria. The Region's catchments drain south to Anderson and Corner Inlets, and east to the Gippsland Lakes (<http://www.wgcma.vic.gov.au/default.asp?action=page&catID=1&pageID=1>).

The West Gippsland Region extends from the Gippsland Lakes to west of Warragul, and from the Great Dividing Range to Wilson's Promontory. The area is 17,685 square kilometres with a population of approximately 169,000 people. Unlike regions with a single major city, the West Gippsland population is dispersed between several regional centres in the vicinity of the South Gippsland, Strzelecki, Bass and Princes Highways. The region includes seven municipalities; all of Latrobe City; substantial parts of Wellington, Baw Baw and South Gippsland Shires; a heavily populated portion of Bass Coast Shire; and small sparsely populated areas of Delatite (now Mansfield Shire.)

(<http://www.wgcma.vic.gov.au/default.asp?action=page&catID=6&pageID=16>).

Municipalities falling within the catchment include Latrobe City.

6.4 Port Phillip and Westernport Catchment Management Authority

There are over 8000 km of waterways in the Port Phillip & Western Port Region and more than 900 wetlands (including 3 internationally recognised RAMSAR wetlands) and over a dozen estuaries.

Melbourne Water is responsible for the waterway, drainage and floodplain management functions in this region. Working in partnership with Melbourne Water and the Environment Protection Authority Victoria, the Port Phillip and Westernport Catchment Management Authority is developing a Regional Water Quality Plan and implementing projects in priority areas to help reduce nutrient and sediment inputs to the bays and waterways of the region (<http://www.ppwcm.vic.gov.au>).

Municipalities falling within the catchment include part of Murrindindi Shire, Mitchell Shire, and Macedon Ranges Shire.

6.5 North Central Catchment Management Authority

The region covers an area of around three million hectares (13 per cent of the State), with a population of over 230,000 people. The population is concentrated mainly in provincial centres, especially along the Calder and Murray River corridors.

The North Central CMA is responsible for the ongoing development and review of the North Central Regional Catchment Strategy (RCS) with specific responsibilities in relation to designated waterways and designated land or works and these include:

- Identifying and planning for State and local community needs relating to the use and to the economic, social and environmental values of land and waterways
- Developing and implementing effective schemes for the use, protection and enhancement of land and waterways
- investigating, promoting and researching any matter related to its functions, powers and duties in relation to waterway management
- educating the public about waterway management.

(Source: <http://www.nccma.vic.gov.au/Our%20Region.asp>)

7.0 Regional strategies (project council participants are bolded)

Urban Water Authorities	Municipalities	Plans / Strategies
Coliban Water	<ul style="list-style-type: none"> ▪ Macedon Ranges Shire ▪ Mt Alexander Shire 	<ul style="list-style-type: none"> ▪ Water security plan ▪ Water Quality Reports
Gippsland Water	<ul style="list-style-type: none"> ▪ Latrobe City ▪ Wellington Shire ▪ Baw Baw Shire ▪ South Gippsland Shire 	<ul style="list-style-type: none"> ▪ 2004-2006 Environmental Improvement Plan ▪ Tyers River Catchment Project
Goulburn Valley Water	<ul style="list-style-type: none"> ▪ City of Greater Shepparton ▪ Campaspe Shire ▪ Moira Shire ▪ Mitchell Shire ▪ Murrindindi Shire ▪ Mansfield Shire ▪ Strathbogie Shire 	<ul style="list-style-type: none"> ▪ Env. Policy & Env. Management System (EMS) ▪ Annual Environmental Reports ▪ Annual Water Quality Reports
North East Water	<ul style="list-style-type: none"> ▪ Indigo Shire ▪ Alpine Shire ▪ Towong Shire ▪ Rural City of Benalla ▪ Moira Shire ▪ City of Wangaratta ▪ City of Wodonga 	<ul style="list-style-type: none"> ▪ Environment Reports ▪ Water Resource Policy ▪ Water Quality Reports
Western Water	<ul style="list-style-type: none"> ▪ Macedon Ranges Shire 	<ul style="list-style-type: none"> ▪ Water Quality Reports ▪ Western Water Area Regional Action Plan 2005 ▪ Assessment of Catchment Risks to Potable water supplies in the

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Catchment Management Authorities	Councils	Plans / Strategies
<p>Goulburn Broken CMA</p>	<ul style="list-style-type: none"> ▪ Moira Shire ▪ Campaspe Shire ▪ Mitchell Shire ▪ Murrindindi Shire ▪ Mansfield Shire ▪ Strathbogie Shire ▪ Benalla Rural City ▪ City of Greater Shepparton 	<ul style="list-style-type: none"> ▪ Goulburn Broken Regional River Health Strategy 2004 ▪ Lower Broken Creek Waterway Management Strategy 2005 ▪ Recreational Waterway Strategy ▪ Goulburn Broken Catchment Management Regional Strategy 2003 & Sub-strategies: <ul style="list-style-type: none"> ○ <i>Upper Goulburn Catchment Recreational Waterway Strategy</i> ○ <i>Threatened flora and fauna species and non-threatened vertebrate fauna in the Goulburn Broken Catchment: status, trends and management.</i> ○ <i>Goulburn Broken Wetlands Direction Paper</i> ○ <i>Overview of invertebrates in the Goulburn Broken Catchment</i> ▪ Shepparton Irrigation Region Catchment Strategy & Sub-strategies: ▪ <i>Irrigation Drainage Management and Water Quality Progress Report 2004/2005</i> ▪ 1996 Goulburn Broken Water Quality Strategy (WQS).
<p>North East CMA</p>	<ul style="list-style-type: none"> ▪ City of Wodonga ▪ Indigo Shire ▪ City of Wangaratta ▪ Alpine Shire ▪ Towong Shire ▪ parts of Moira Shire 	<ul style="list-style-type: none"> ▪ North East Catchment Management Regional Strategy including: <ul style="list-style-type: none"> ○ <i>Northeast Salinity Strategy</i> ○ <i>Ovens Water Quality Strategy</i> ○ <i>Upper NE Water Quality Strategy</i> ○ <i>NE Soil Health Action Plan</i> ○ <i>Regional Floodplain Management Strategy</i> ○ <i>NE Regional Rural Drainage Management Strategy Draft</i> ○ <i>Landcare Support Strategy</i> ○ <i>Draft Regional River Health Strategy Summary 2004</i>
<p>Port Phillip & Westernport CMA and Melbourne Water</p>	<ul style="list-style-type: none"> ▪ Part of Murrindindi Shire ▪ Mitchell Shire ▪ Macedon Ranges Shire 	<ul style="list-style-type: none"> ▪ Regional Catchment Strategy 2004 ▪ Regional Water Quality Plan (under devel.)
<p>West Gippsland CMA</p>	<ul style="list-style-type: none"> ▪ Latrobe City 	<ul style="list-style-type: none"> ▪ West Gippsland Regional Catchment Strategy ▪ River Health Strategy 2004 ▪ Gippsland’s Water Quality Management Report 2005 ▪ West Gippsland Regional Wetlands Plan (under development)

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Catchment Management Authorities	Councils	Plans / Strategies
<p>North Central CMA</p>	<ul style="list-style-type: none"> • Ballarat City Council • Buloke Shire Council • City of Greater Bendigo • Campaspe Shire Council • Central Goldfields Shire Council • Gannawarra Shire Council • Hepburn Shire Council • Loddon Shire Council • Macedon Ranges Shire Council • Mitchell Shire Council • Moorabool Shire Council • Mt Alexander Shire Council • Northern Grampians Shire Council • Pyrenees Shire Council • Swan Hill Rural City Council 	<ul style="list-style-type: none"> • Campaspe Environmental Flow Assessment • Goldfields biodiversity action plan • Loddon stressed river restoration project • Mid Loddon waterways project • Riverina biodiversity action plan • Upper Loddon targeted salinity project

Appendix 1 Project plan – North East Regional Domestic Wastewater Management Plan (Stage 1)

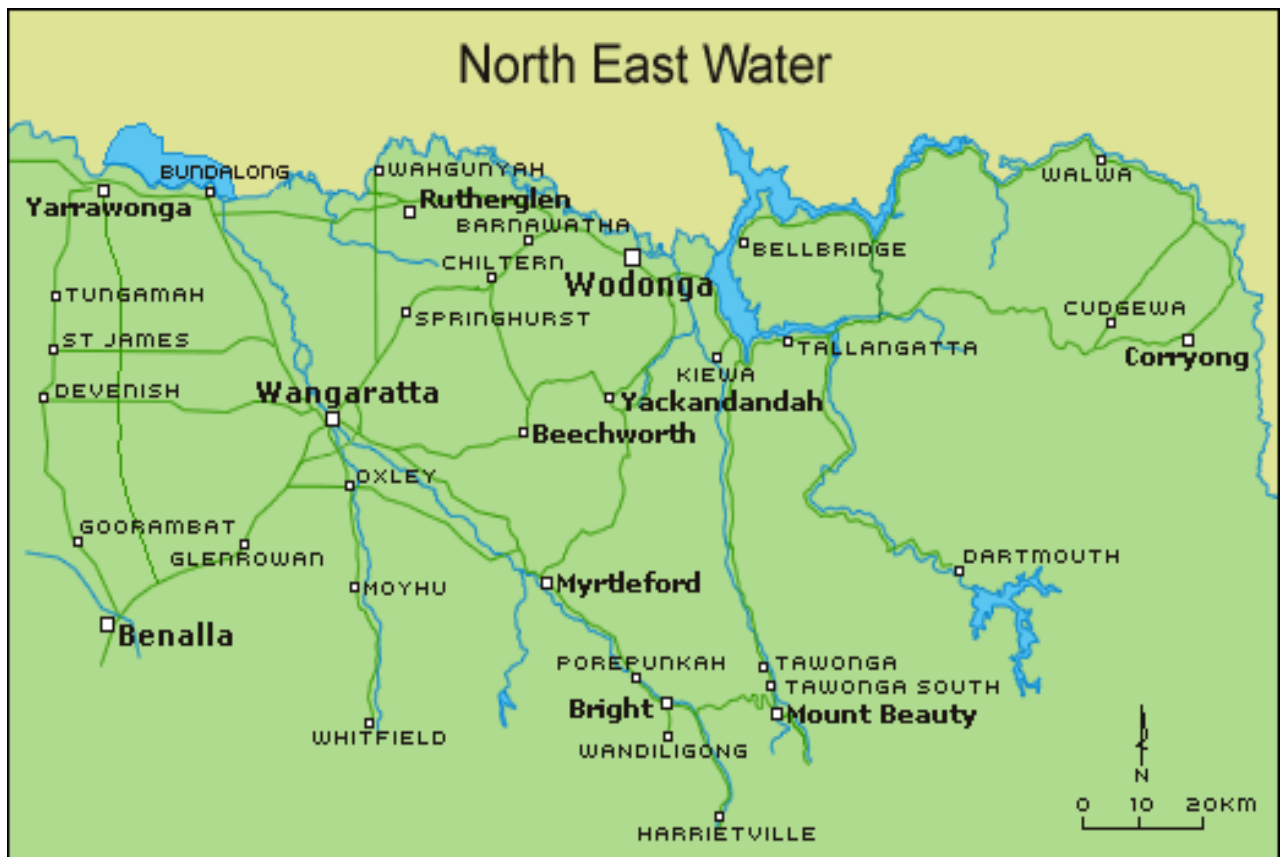
Project Stage	Major Tasks	Milestone	Timeline
Project Meeting (December 05)	Develop project plan		December 05
Common Elements	<p>Context section</p> <ul style="list-style-type: none"> • Description of domestic wastewater and general risks • Government policy and legislative context • Description, rationale and aims of a DWMP • Description, rationale and advantages of Stage 1 Regional Approach 	Presentation to Management Committee (MC)	20 December 2005
	<p>Policy section (Regional operational policies)</p> <ul style="list-style-type: none"> • Draft permitting policies and processes • Draft risk based compliance monitoring policies and processes • Draft data sharing processes and regional action plans (data collection, storage and sharing) between stakeholders 	Presentation to MC	31 January 2006
	<p>Cost Recovery Options Paper</p> <ul style="list-style-type: none"> • Draft options paper for cost/recovery/resourcing 	Circulation of draft paper	30 March 2006
	<p>Data management</p> <ul style="list-style-type: none"> • Assessment of each council's data management system • Development of an individual gap analysis report • Development of an data management action plan 	Gap analyses reports and action plans	28 February 2006
	<p>Regional Data Repository and Information Exchange</p> <ul style="list-style-type: none"> • Report on the feasibility of a regional automated septic tank waste collection system 	Presentation of report	28 February 2006

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Project Stage	Major Tasks	Milestone	Timeline
DWMP Procedures Manual	<ul style="list-style-type: none"> • Draft procedures for permitting, compliance monitoring and reporting • Circulate and obtain feedback from MC members • Complete draft and present to MC 		31 January 2006
GIS Report	Presentation of Report to Steering Committee		30 March 2006

Appendix 2 Water Authority Areas

North East Water



(Source: <http://www.nerwa.vic.gov.au/about/profile.htm> accessed on 03/02/06)

Goulburn Valley Water



Locality Plan Of Towns within the Goulburn Valley Water District

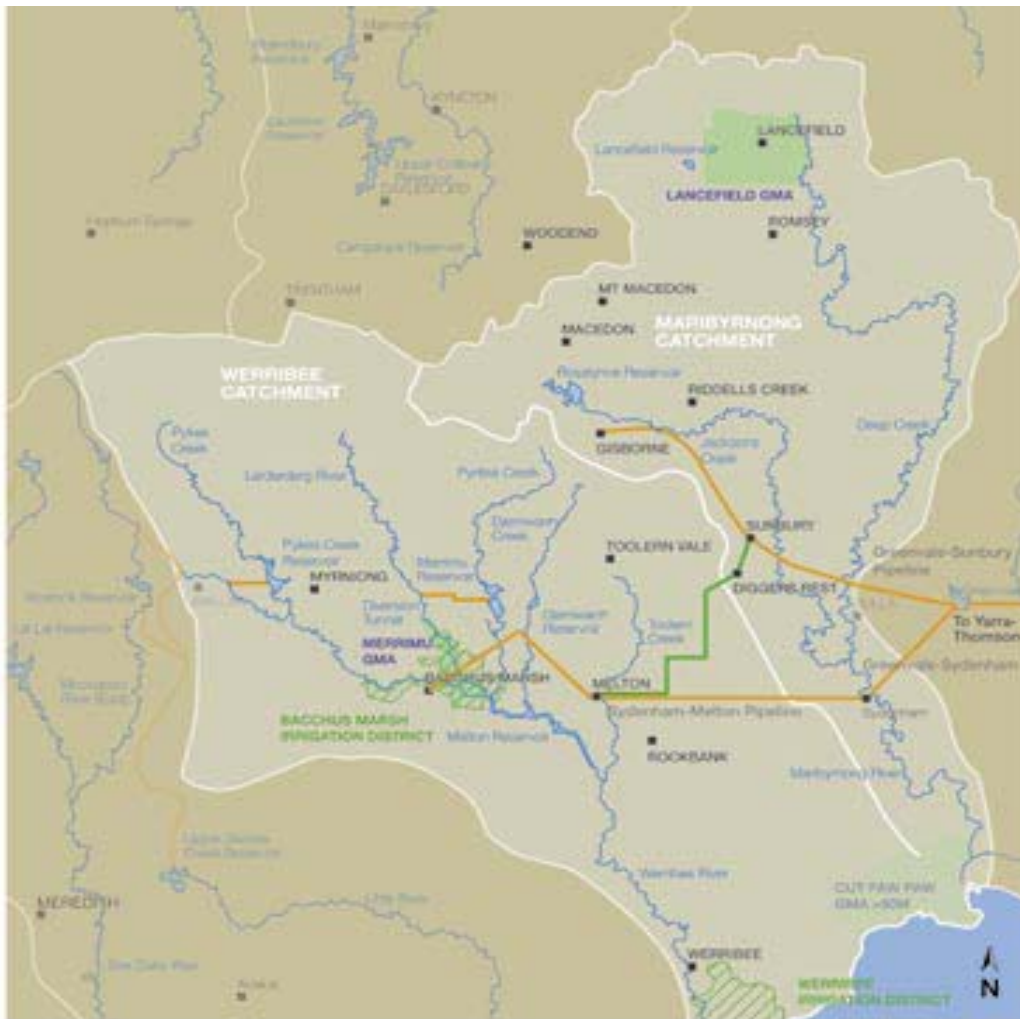
(Source: http://www.gvwater.vic.gov.au/corporate/profile/gvw_map.asp accessed on 03/02/06)

Coliban Region Water



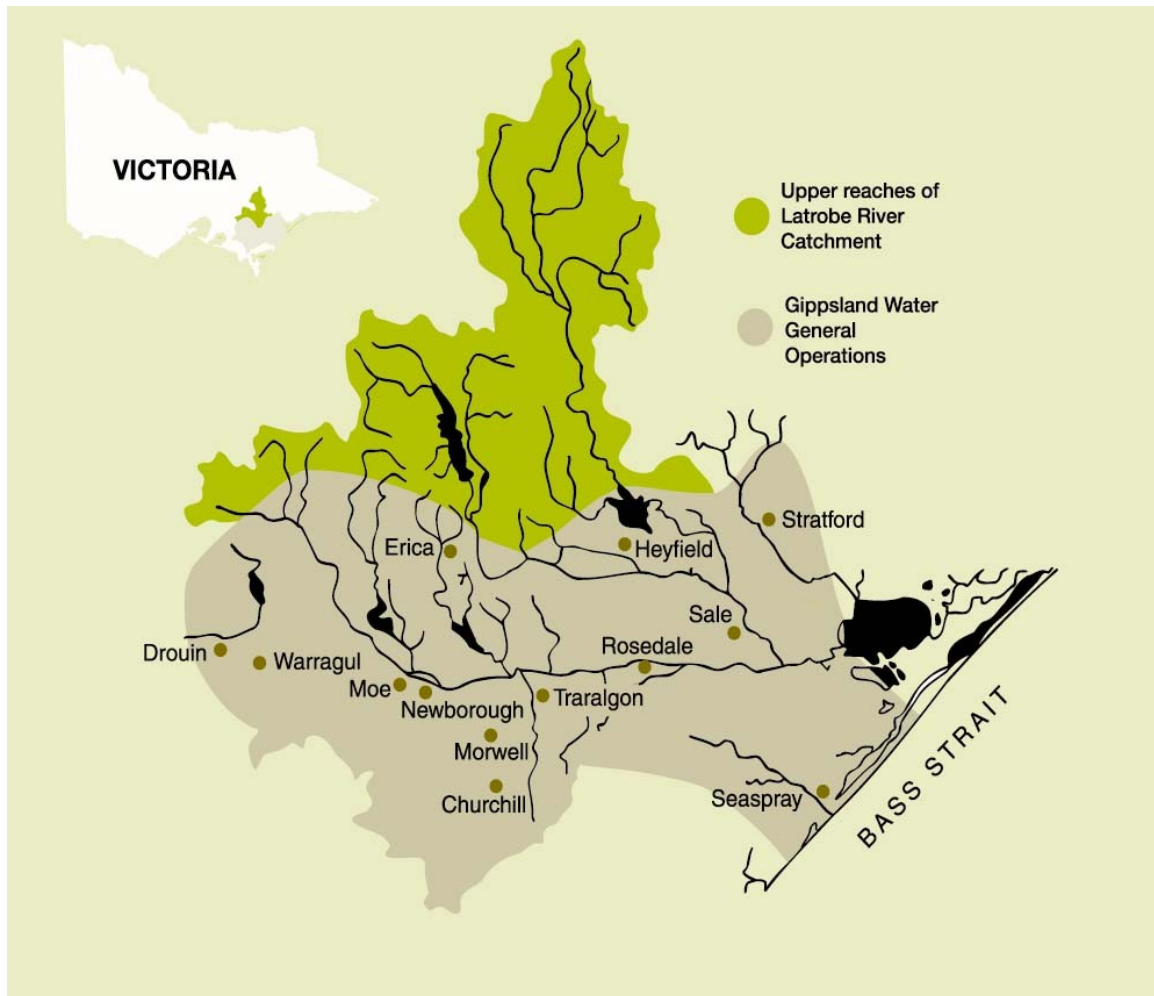
(Source: Coliban Water Annual Report 2005 accessed 2 February 2006)

Western Water



(Source: Western Water Area Regional Action Plan 2005)

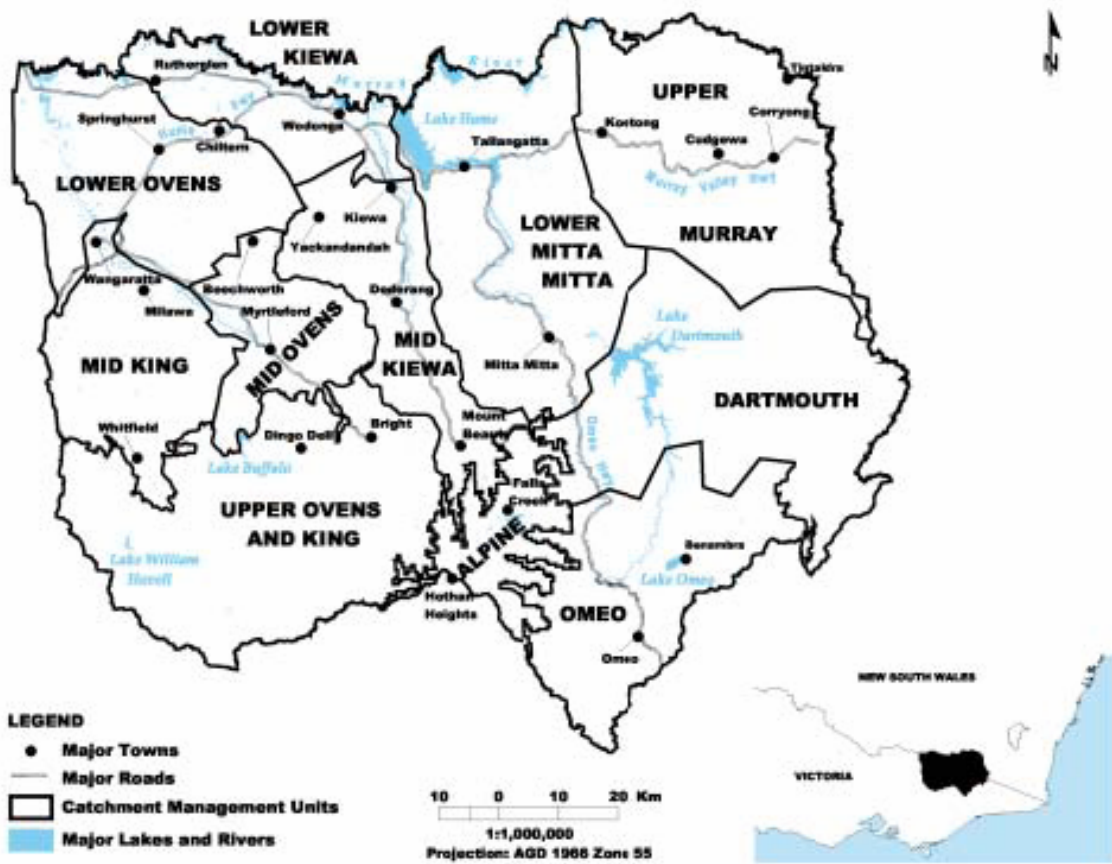
Gippsland Water



(Source: <http://www.gippswater.com.au/overview/region.asp> accessed 2 February 2006)

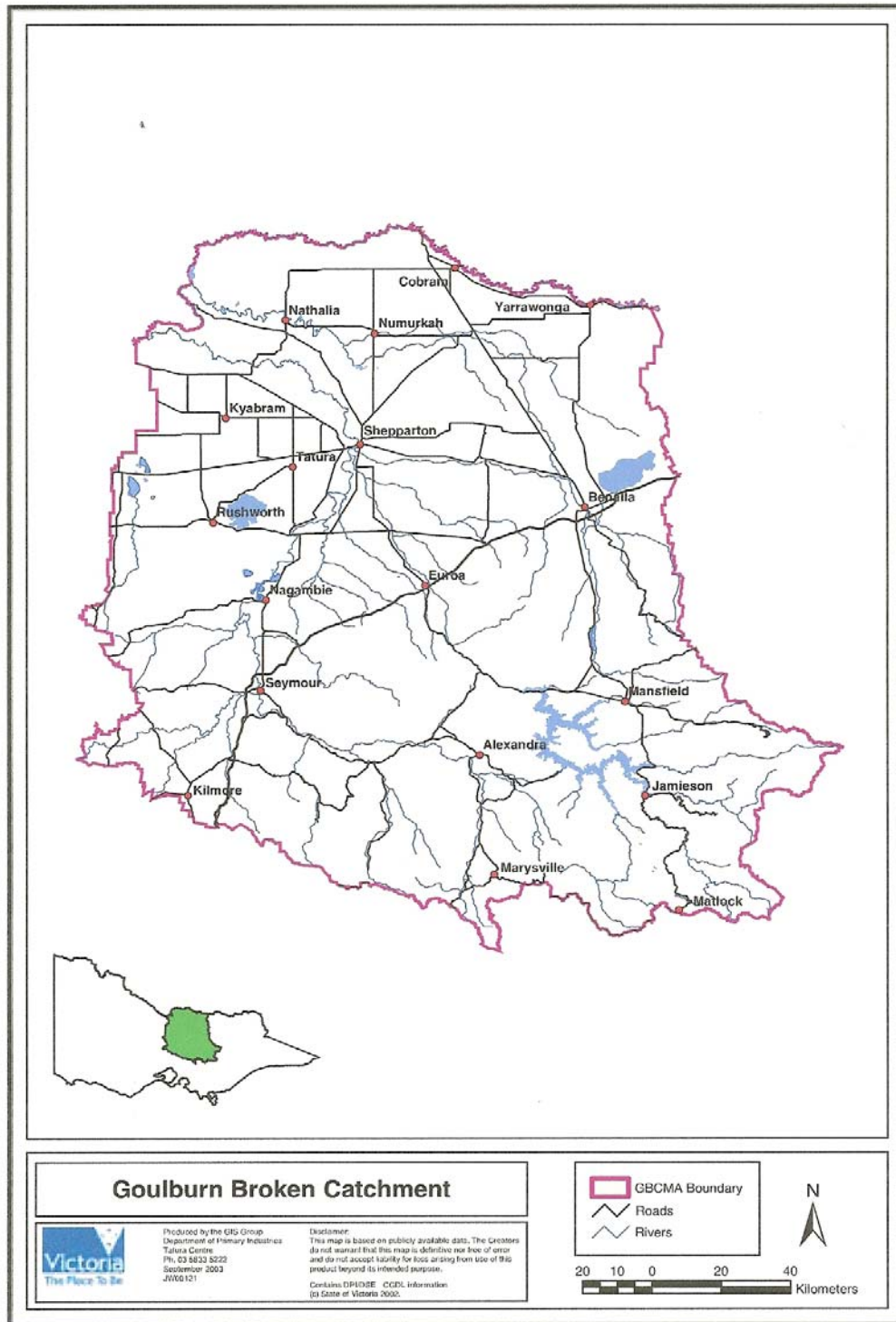
Appendix 3 Catchment Management Authority Areas

North East Catchment



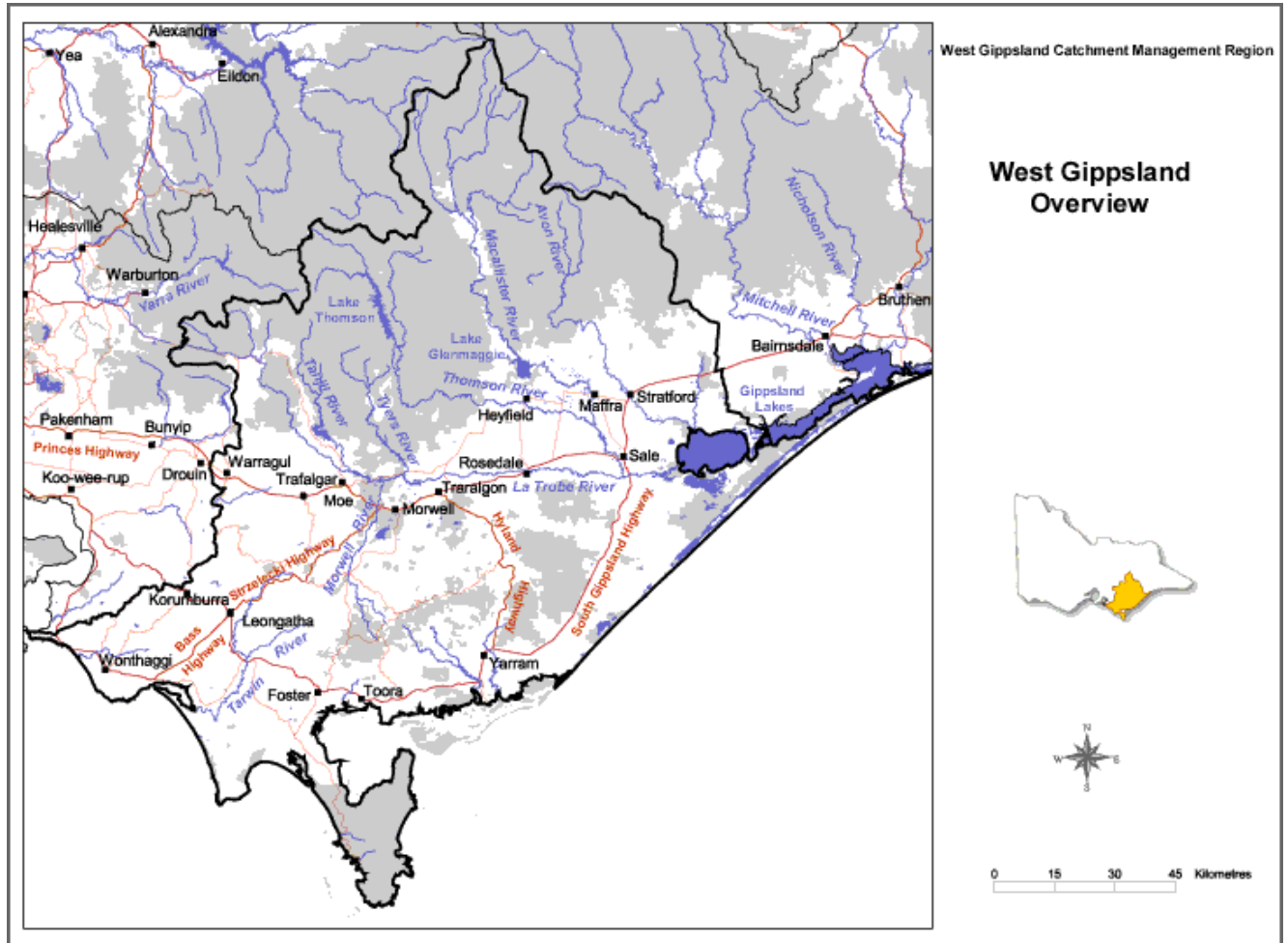
(Source: North East Regional Catchment Strategy' NECMA)

Goulburn Broken Catchment



(Source: 'Goulburn Broken Regional Catchment Management Strategy November 2003' GBCMA)

West Gippsland Catchment



(Source: WGCMC website homepage www.wgcmc.vic.gov.au)

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