



# **Warrnambool City Council**

## **Domestic Wastewater Management Plan**

**Final Report**

**August 2006**

**Adopted by Council 4 August 2008**

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## STRUCTURE AND CONTEXT OF PLAN

### 1. Structure

The report has four parts. These are:

#### *Part A – General*

This Part is divided into seven sections. It contains information about the objectives of the plans and its methodology; a review of legislation and policy relating to wastewater, a description of the roles and responsibilities of the various agencies involved in domestic wastewater management, the outcomes of the consultation with these agencies and wastewater contractors, an audit of domestic wastewater systems and an analysis of development activity in the City.

#### *Part B – Detailed Assessment of Townships*

This Part contains an audit of the individual townships in the City. It describes their physical characteristics and the condition of their septic tank systems. It identifies the environmental and health problems associated with septic tanks and makes recommendations about how these problems can be addressed.

#### *Part C – Key Findings and Major Issues*

Part C provides a summary of the findings of Parts A and B and a discussion on the major issues that emerge from these findings.

#### *Part D – Management Plan*

Part D contains the detailed management plan. It describes Council's domestic wastewater goals, objectives and functions and lists the key actions that Council should undertake over the next 5 to 10 years.

## **2. Context**

The Domestic Wastewater Management Plan is an operational plan of Council. It is consistent with Council's goal of improving the health of the community and protecting the City's environment.

The Plan will inform Council's community plan, municipal health plan, environment plan, municipal strategic statement, planning scheme and local structure plans/framework development plans for unsewered townships.

## **3. Preparation of Plan**

This Plan is the product of a joint planning process by Warrnambool City Council, Moyne Shire Council and Southern Grampians Shire Council. Separate plans have been produced by Moyne and Southern Grampians.

The development of the Plan was overseen by a Steering Group comprising:

- Murray Murfett, Manager of Health and Amenity, Warrnambool City Council
- Robert Handby, Manager of Health and Legislation, Warrnambool City Council
- Rebecca McCullough, Administration Officer, Environment and Planning, Warrnambool City Council.
- Kevin O'Brien, Manager Community and Leisure Services, Southern Grampians Shire
- Murray Young, Environmental Health Officer, Southern Grampians Shire

Valuable input was also provided by Vanessa Lenihan from Wannon Water who the Steering Group meetings and supplied information on the Authority's wastewater programs.

## **PART A – GENERAL**

## Section One – Introduction

### 1.1 Objectives of Plan

The objectives of the domestic wastewater management plan are to:

- Review Council's wastewater management processes and practices and suggest improvements where needed.
- Identify problems with domestic wastewater treatment and disposal in the City and recommend solutions.
- Identify potential development activity in the City in the unsewered areas and discuss the implications of this activity for Council's wastewater management programs.
- Draw the findings and recommendations from the Study together into a coherent and achievable long term strategy plan for the City.

### 1.2 Key Tasks/Methodology

The key tasks of the Study and the steps taken to complete these tasks are listed below. A complete outline of the methodology is provided in Appendix A.

#### *Key tasks*

1. Document current wastewater management issues/arrangements/practices/problems /potential new systems in Warrnambool City.
2. Conduct a detailed assessment of risk/problem areas and identify potential solutions.
3. Develop a draft management plan.
4. Develop a final plan.

#### *Steps*

- Analysis of current and impending Government legislation and policies in relation to domestic wastewater disposal.
- Description of the roles and responsibilities of the various Government Authorities in domestic wastewater management and consultation with these Authorities on the key issues the plan should address.

- Review of Council's processes with respect to the approval and installation of septic tank systems.
- Inspection of properties in the unsewered townships to identify the age, condition and performance of septic tank systems.
- Inspection of drains and streams in unsewered townships to monitor pollution and nuisance conditions caused by the discharge of domestic wastewater.
- Consultation with local contractors involved in the planning and installation of domestic wastewater systems about how wastewater management processes could be improved.
- Identification of the key findings that emerge from the research and suggested actions to respond to these findings.
- Development of a draft and then final strategy plan.

## Section Two – Legislation/Policy Review

### 2.1 Introduction

This section provides a summary of current legislation, codes of practice and government policy relating to wastewater disposal and treatment.

### 2.2 Current Legislation/Codes of Practice/Policies

#### 2.2.1 Legislation

*Environment Protection Act 1970 Part 1XB Section 53J-O*

This legislation assigns to local councils the responsibility for approving the installation and alteration of wastewater disposal system for properties which generate 5000 litres of wastewater or less per day. The important provisions of the legislation are as follows:

- Any person wishing to install or alter a wastewater system must apply to Council for approval. This application must include a plan and the prescribed fee. The penalty for constructing a system without a permit is 300 penalty units. The penalty for non-compliance with the permit is 120 units.
- Council is required within 42 days of receiving the application, to approve the installation (with or without modifications) or refuse the permit.
- Council may refuse the permit if the site is unsuitable and/or the area available for the treatment of disposal of effluent is not sufficient. Council must refuse the permit if the septic tank system is not of a type approved by the EPA, is contrary to State Environment Protection Policies; or does not treat all sewage and is located in a specified part of the municipality which have been declare as an all waste area.
- The power to approve the installation of septic tank systems can be delegated to Council officers. However, any refusal to issue a permit must be ratified by Council.
- Use of septic tank systems is prohibited until they have been inspected and approved by the Council. Once approved, the owners of the properties on which the systems are located are required to operate and maintain the systems in accordance with the permits and EPA

- licence requirements. Penalty for using the system without a permit to use is 120 units. Penalty for failing to maintain the system as per the permit to use conditions is 10 units.
- At the end of each financial year, Council is required to lodge an annual return with the EPA which outlines the number of permits issued, systems disconnected, systems inspected and systems in use within the municipality during the year.

#### *Health Act 1958*

Section 29 of Health Act 1958 requires Council to seek to 'prevent disease, prolong life and promote public health through programs which control or prevent environmental health dangers and disease'.

The Act requires Council to remedy, as far as is reasonable, all nuisances which exist in the municipality. Nuisances are defined as activities which are dangerous to health or offensive. If Council is notified of a nuisance and fails to act, the person making the complaint can refer the matter to the court. If the court finds that the complaint has merit, it may order Council to pay the costs and expenses incurred by the complainant.

#### *Local Government Act 1989*

The Local Government Act empowers Council to enact local laws and set special charges for Council activities. Council may be able to use these powers to raise revenue for its wastewater management programs and develop local regulations for wastewater management as long as these regulations are consistent with State policy and legislation.

#### *Water Act 1987*

This Act regulates the Water Industry and describes the powers and responsibilities of Water and Sewerage Authorities. The Act contains the following provisions relating to septic tank systems:

- Councils are required to refer septic tank applications to Authorities prior to approval if the property is in a sewer district or area of interest or the Authority formally requests to see all permits. The Authority has the power to specify conditions on the permits.
- Within their sewer districts, Authorities may inspect and require owners to repair or maintain their septic tank systems. If the owners fail to undertake these works, Authorities can perform the works and recover the costs from the owners

- Within their sewer districts, Authorities are able (following the adoption of a by-law) to require regular maintenance of septic tanks, the payment of fees by the owners for works carried out by the Authorities on their septic tank systems, prohibit septic tank discharge and impose penalties for breaches of septic tank provision of the Water Act.
- Authorities can require properties in sewerred areas that remain on septic tanks to connect to the sewer. If the property does not connect, the Authorities can organise the connection and recover the cost from the property owner.

The Act has particular importance to Council's wastewater strategy as it provides Water Authorities with the power to force connection to the sewer where available and/or inspect, repair and recover the cost of repair of septic tanks systems in their sewer districts.

*Planning and Environment Act 1987 - Direction No 6 Rural Residential Development (October 1997 Guidelines)*

This document provides guidelines for planning authorities preparing amendments to allow rural residential development. The guidelines apply to residential use of land where the lots are larger than standard residential lots (usually at least 0.4ha). The document lists the actions that Council must take in preparing amendments. With respect to domestic wastewater management, the document indicates that amendments can only proceed if the land has been:

- The subject of a land capability assessment, the results of which have been submitted to the EPA and the EPA has subsequently confirmed that the land will comply with the State Environment Protection Policy (Waters of Victoria).
- Found to have satisfactory physical characteristics for on-site sewage disposal or can connect to the sewer.

*Building Regulations 2006*

Regulation 801 requires the issue of a 'report and consent' by Council before a permit is issued for any development that will involve the installation or alteration of a septic tank system. The report from Council indicates whether the block is suitable for development from a wastewater management perspective. The 'report and consent' is not required if a 'permit to install the septic tank system' has already been issued by Council.

Regulation 1003 requires the issue of 'a report and consent' by Council prior to a certificate of occupancy being provided for any building development in an unsewered area where a septic tank system has been installed. The report from Council indicates that the septic tank system has been approved and is suitable for use. The 'report and consent' is not required if a 'permit to use the septic tank system' has already been issued by Council.

### **2.2.2 State Environment Protection Policies**

#### *Waters of Victoria Policy 2003*

This document outlines the State Government's Policy with respect to the protection of the waterways. Clause 32 of the Policy sets out the requirements for managing domestic wastewater. It requires:

- Owners of unsewered premises to manage their wastewater systems in accordance with permit conditions and the Septic Tank Code of Practice 2003.
- Local Councils to assess the suitability of land that is proposed for development for its capacity to absorb wastewater on-site. This may include the conduct of a land capability assessment.
- Local Councils to ensure that wastewater systems installed in unsewered areas are consistent with EPA guidelines and the Septic Tank Code of Practice 2003.
- Local Councils to identify properties in unsewered areas which are discharging off-site or contaminating ground water.
- Local Councils to develop wastewater management plans to address problems relating to wastewater disposal and ensure the proper design and management of future systems.
- Local Councils to ensure that land that cannot absorb wastewater on-site is either not developed or if developed is connected to a sewerage system.

#### *Groundwaters of Victoria Policy 1997*

This document outlines the State Government's Policy with respect to the protection of ground water. The goal of the Policy is to protect beneficial uses of groundwater throughout Victoria such as potable water supply and primary contact recreation (swimming). The policy specifies that all practicable measures must be taken to prevent the pollution of groundwater and all planning schemes must be consistent with the policy.

### 2.2.3 EPA Codes of Practice

#### *Septic Tanks Domestic Wastewater Management 1996*

This document is essentially the manual for the design, construction, selection and installation of septic tank systems. It contains information on treatment and disposal options, the permit process, and the design and construction of septic tanks, effluent disposal systems and off-site disposal systems. Although replaced by the 2003 Code, Councils still extensively use the document when designing their local guidelines for septic tank installations.

#### *Septic Tanks Domestic Wastewater Management 2003*

This document describes the measures that should be taken to ensure that domestic wastewater is treated and disposed of in a manner which minimizes health and environmental risks. The Code sets out requirements for:

- The consideration of on-site wastewater management with the land development process.
- Designing on-site wastewater treatment systems.
- Installing on-site wastewater treatment systems.
- Operating and maintaining on-site wastewater treatment systems.

The Code provides information and material about:

- The legislative and policy framework for domestic wastewater management.
- The roles and responsibilities of State and Local Government, land assessors, building surveyors, installers of systems and householders operating the systems.
- Wastewater treatment and disposal options.
- Maintenance of treatment systems.
- The planning design and approval process for systems.
- The assessment of land capability.
- Council domestic wastewater management plans.
- Setback distances from property boundaries and water bodies.

With respect to setback distances, the Code allows for distances to be reduced if a treatment system is being installed which can produce 20/30 effluent and Council has a compliance program in place to ensure that 20/30 effluent is being produced.

This Code, together with the 1996 Code, the Australian Standards for Domestic Wastewater Management and the Guidelines for Aerated On-site Wastewater Treatment Systems have informed Warrnambool Council's guidelines for domestic wastewater management.

#### *Small Wastewater Treatment Plants 1997*

This Code provides design and operational guidelines for treatment plants which serve less than 500 people.

### **2.2.4 Australian Standards and Other Requirements**

There are a number of Australian standards which have relevance to the construction and design of wastewater disposal systems. These are as follows:

- AS/NZS 1547:2000 – On-site Domestic Wastewater Management.
- AS1546 – On-site Domestic Wastewater Treatment Systems.
- AS/NZS 1546.2:2000 – On-site Domestic Wastewater Treatment, Part 2 (Waterless Composting Toilets).
- AS/NZS 1546.3:2000 – On-site Domestic Wastewater Treatment, Part 3 (Aerated Wastewater Treatment Systems).
- AS139 – Safety Signs for the Occupational Environment.
- AS2698 – Plastic Pipes and Fittings for Rural Applications.
- AS3000 – Wiring Rules, Electrical Installations, Buildings, Structures and Premises.
- AS3500 – Plumbing and Drainage Code.

The most important of these documents is AS/NZS 1547:2000. This comprehensive standard provides information on the following:

- The design, performance, operation, and installation of wastewater disposal systems.
- On-site evaluation processes and selection of systems.
- Education and training related to wastewater management.

### 2.2.5 EPA Policies, Guidelines and Other Relevant Publications

#### *Re-use Options for Household Wastewater 812.1 – February 2006*

This document identifies the household wastewater re-use practices that may be acceptable, outlines the approvals that are required to allow reuse, identifies the risks that are associated with re-using wastewater and suggest measures to minimise these risks.

#### *Land Capability Assessment for On-site Domestic Wastewater Management 746 - March 2003*

These guidelines expand on the section in the Code of Practice about land assessment for effluent disposal. Their aim is to ensure that appropriate attention is given to on-site wastewater management at the rezoning and subdivision stages of the planning process as well as the installation phase of the treatment system. The guidelines have significant relevance for Council planners and EHOs who are assessing the suitability of unsewered land for development.

The guidelines recommend that a comprehensive land capability assessment be undertaken prior to a permit being granted for any proposed new residential subdivision. This land assessment should identify the capability of areas for use as effluent fields and appropriate management measures for areas where on-site wastewater treatment and disposal systems are feasible. The guidelines provide material on the following:

- The overall land assessment procedure.
- The information that could be included in an assessment.
- The issues that should be covered by the assessment.
- A management program which shows how constraints and associated risks can be addressed.
- A rating system for land which indicates suitability for development.

The guidelines recommend that Council require the owner/developer applying for residential subdivision/rezoning to provide Council with the following information:

- The land features of the site and surrounds.
- The type of wastewater treatment system proposed.
- The land capability assessment for the specific development including the potential impact to adjacent lands.

- The management program which will ensure ongoing environmental sustainability and protection of human health.
- Where the wastewater envelopes are to be located on the lots.

The guidelines recommend that this information should be produced by qualified land capability assessors on behalf of the owner/developer.

*EPA Guidelines for Domestic Wastewater Management - No 629*

These guidelines outline the responsibility of Council and building surveyors with respect to the approval and installation of domestic wastewater management systems and the submission by Council of annual returns. The guidelines specify that:

- Within subdivisions created after 15/3/1988, development of allotments can only proceed if Council is satisfied that wastewater can be treated and contained on-site.
- Within subdivisions created before 15/3/1988, development of allotments can only proceed if Council is satisfied that wastewater can be treated and contained on-site or if this cannot be achieved, the wastewater is properly treated and can be discharged off-site in a manner which is consistent with the SEPP. To ascertain this consistency, the Council must apply the following assessment.
  - Which stream (which includes open drains) will receive the effluent and what is its minimum flow rate?
  - What is the current status of the stream in relation to the objectives of the relevant SEPP? If the streamwater quality exceeds policy objectives, no new waste discharge should be permitted.
  - If the quality of the stream meets the SEPP objectives, will the input from the septic tank system cause the objectives to be exceeded?
  - What is the quality of the effluent produced by the septic tank system?
  - Will the input cause the nutrient levels of the receiving waters to exceed those set out in the relevant EPA guideline?
  - Will the requirements of the regional water catchment strategy be met?
  - Has provision been made for ongoing maintenance and monitoring of the septic tank system to ensure good performance?

- For developments on existing unsewered built allotments (such as extensions, renovations etc), Council should determine the modifications to the septic tank system on a case by case basis and may include off-site discharge.
- With respect to the installation of septic tank systems, building surveyors must obtain the 'consent and report' from the Council at two stages in the building approval process - before issuing the permit and before issuing an occupancy permit.

#### *Guidelines for Aerated On-site Wastewater Treatment Systems 2002*

This document outlines the design criteria, construction requirements and performance objectives that Aerated Wastewater Treatment systems must achieve to gain approval for use in domestic and small commercial situations. The document provides information on approval procedures, systems design, test criteria and renewal of application.

The sections of the document that are of particular interest to Council are the permit conditions and the requirements for testing. Council is expected to ensure that the systems are installed, operated maintained and tested as per the permit conditions. These conditions require the householders to ensure that the systems are regularly checked by maintenance contractors and the effluent produced by the systems is regularly tested. The results of these tests and checks are to be provided to Council.

#### *EPA's Certificate of Approval System 748 – 2001*

This bulletin explains how manufacturers of on-site wastewater treatment systems obtain approval for their package plants, systems or processes.

#### *Approving Household On-site Wastewater Systems 747 - 2001*

This bulletin provides information to householders on their responsibilities when installing a septic tank system.

### **2.2.6 Council's Planning Scheme**

The City's Planning Scheme outlines the permit and application requirements and decision guidelines for the rezoning and subdivision of land and the approval requirements for the construction of dwellings. With respect to domestic wastewater disposal and subdivisions/rezoning, the Scheme provides as follows:

- Permits are required for new subdivisions and proposed rezonings.
- For land zoned or proposed to be rezoned residential, all allotments must be serviced by sewer.
- For land or proposed to be rezoned township and low density residential, allotments must be serviced by sewer or be capable of treating wastewater on-site. Permit applications must include a land capability assessment. A minimum lot size is not specified for the township zone. 0.4ha is specified for the low density residential zone.
- For land zoned rural living and rural, the allotments must be serviced by sewer or capable of treating and retaining all waste on-site. Land capability assessments are not automatically required. Minimum lot sizes of 8ha and 40ha are specified respectively. Smaller sizes down to 0.4ha can be approved in certain circumstances.

With respect to the erection of dwellings, the Scheme provides as follows:

- In areas zoned township, permits to build are required for lots that are less than 500m<sup>2</sup> and/or are subject to an overlay that requires a permit.
- In areas zoned low density residential, permits to build are required for a second dwelling on any lot and/or for lots that have planning overlays which require a permit.
- In areas zoned rural living, permits to build are required for a second dwelling on any lot, for lots that are less than 8ha and for lots that have planning overlays which require a permit.
- For lots zoned rural, permits to build are required for a second dwelling on any lot, for lots that are less than 40ha and for lots that have planning overlays which require a permit.
- In all other cases, permits are not required.

In addition to the zonings, there are four planning overlays provisions which need to be considered when assessing development applications from a wastewater perspective. These are environment significance, vegetation protection, land subject to inundation and wildfire management

### **2.3 Impending changes to legislation, codes and policies**

There are no impending changes to the regulatory environment or codes of practice for septic tanks systems

## 2.4 Summary and Implications

The implications of the review of legislation and policy are as follows:

- There is some uncertainty about Council's legal power to require owners of septic tank systems to modify their septic tank systems. Council has the power to order property owners to repair failing systems e.g. water surfacing from effluent lines. It also has the power to order property owners to repair or even modify their systems if the systems are causing a nuisance e.g. an effluent discharge which is causing an offensive odour. However, it appears that Council does not have the power to require a person to modify a system which is not causing a nuisance and is performing as per the conditions of its original permit e.g. an approved split system with grey water is discharging off-site but not in a manner which causes offence. If this is an accurate interpretation of Council's powers, it may diminish Council's ability in some circumstances to deal with off-site discharges of grey water.
- Council may be able to strengthen its power to deal with 'approved' off-site discharges of grey water. The Local Government Act gives Council the power to enact local laws to regulate wastewater management issues as long as these laws are consistent with State policy and legislation. State policy currently recommends that all wastewater be contained on-site. Therefore, Council may be able to enact regulations which it can apply to properties with split systems.
- The Local Government Act gives Council the power to introduce a special charge on homeowners to fund any 'genuine function if the function benefits the persons being charged'. Therefore, Council may be able to raise a charge to fund a domestic wastewater management program if it can demonstrate the 'genuineness' and benefits of the program.
- Council is required to remedy nuisance conditions 'as far as reasonable' which exist in its municipality. Therefore, Council must act if it is aware of a nuisance condition being caused by a septic tank system. However, the qualification 'as far as reasonable' provides Council with some leeway in determining what to do. In some situations, the solution may be difficult and costly or there may be no practical solution. Council may be able to say that it cannot resolve the problem.
- Water Authorities have the power to inspect septic tank systems and order owners to repair and/or properly maintain their systems within their sewer districts. They also have the power to carry out works on septic systems and impose charges for these works (if a by-law

- is created). These provisions appear to give Wannon Water in its sewer districts more effective powers than Council to facilitate the repair of septic systems.
- Building Surveyors cannot legally issue a certificate of occupancy until a permit to use has been issued. It is apparent that some owners are occupying homes without a permit to use. They may be doing this with or without a certificate of occupancy. This need to be addressed.
  - Council's planning scheme promotes good wastewater management practices. It requires all properties to be able to contain their wastewater on-site, specifies minimum lot sizes which are based on allowing sufficient land for wastewater disposal, provides for rigorous scrutiny of proposals in environmentally sensitive areas (near watercourses, in water catchment zones, near the coast), requires land capability assessments in some circumstances and provides for referrals to key agencies for their input.
  - The Codes of Practice and Australian Standards are suitable for use with new subdivisions where there is ample land. They are sometimes not as helpful with old subdivisions with very small allotments. Often there is considerable pressure from owners to develop these lots and innovative solutions not covered in the Code of Practice and Standards are needed.

## **Section Three - Responsibilities of Authorities**

### **3.1 Introduction**

This section outlines the roles and responsibilities of the various authorities involved in domestic wastewater management.

### **3.2 Authorities**

#### **3.2.1 Environment Protection Authority**

The EPA's responsibilities in relation to domestic wastewater disposal are as follows:

- Formulating Government policies and legislation in relation to wastewater disposal.
- Developing and reviewing the Code of Practice for domestic wastewater systems.
- Monitoring the performance of local Councils in carrying out their functions as approval authorities and acting on problems arising from the operation of septic tank systems.
- Approving the design of domestic wastewater treatment systems.
- Maintaining a database on septic tank activity in the State.
- Advocating for the provision of sewerage in unsewered areas when considered necessary.

#### **3.2.2 Department of Sustainability and Environment (DSE)**

The Department of Sustainability and Environment is responsible for the integrated management of Victoria's natural resource base, including land identification, resource development and utilisation and the protection, conservation and management of Victoria's natural environment.

The Department has ultimate responsibility for groundwater, waterways, land and coastal management and the operation of the Western Coastal Board, Glenelg Hopkins Catchment Authority and Wannon Water.

### 3.2.3 Warrnambool City Council

Council has responsibility for the following functions relating to the treatment and disposal of wastewater:

- Considering wastewater management matters when approving rezonings, residential subdivisions and building construction and site plans.
- Approving septic tank installations.
- Ensuring that septic tank systems are functioning properly.
- Ensuring that any nuisance conditions arising from septic tank systems are abated.
- Submitting an annual report to the EPA on septic tank activity eg. number installed, number disconnected etc.
- Ensuring that septic tank sludge is collected and disposed of in an appropriate manner.

### 3.2.4 Glenelg Hopkins Catchment Management Authority

The role of the Catchment Authority is to protect and restore land and water resources, encourage the sustainable development of natural resource based industries and conserve the natural heritage. Its region spans from Ballarat to the South Australian border and from the southern coast to Harrow and Ararat in the north and includes Warrnambool City. The responsibilities of the Catchment Management Authority are as follows:

- Improving the condition of waterways and maintaining them in a healthy condition to meet community expectations.
- Minimising flood risks.
- Reducing the sedimentation of waterways, lakes and water storages.
- Reducing the incidence of algal blooms in waterways.

The Authority is a referral agency for planning applications for properties that are located in water catchment areas. The Agency considers wastewater management issues when reviewing these applications and can require conditions to be included in the permit.

### **3.2.5 Wannon Water**

Wannon Water is responsible for the provision of reticulated water and sewerage in south-west Victoria. Its region includes Warrnambool City. Wannon Water is a referral agency for planning applications for properties that are located in water catchment areas and sewer districts. The Authority considers wastewater management issues when reviewing these applications and can require conditions to be included in the permit.

### **3.2.6 Western Coastal Board**

The Western Coastal Board is responsible for the protection and conservation of the Western Victorian coastline. It oversees strategic coastal and marine planning issues for the region which extends from Breamlea, near Torquay to the South West Border. It is required to develop a regional coastal strategy and implement the recommendations of the State and National coastal protection policies and strategies. One of its critical roles is to ensure that the coastline in its region is not damaged by the discharge of wastewater.

### **3.2.7 Municipal Association of Victoria**

The Association is the peak body for local government in Victoria. In recent years, it has become active in wastewater management and is coordinating the Country Towns Water Supply and Sewerage Program with DSE.

## **3.3 Implications**

The review of the role of Council and other agencies indicates that many local and regional agencies have an important role to play in the wastewater management. Council needs to work closely with these bodies and keep them fully informed of any actions it is taking which may have relevance to their operations.

## Section Four – Wastewater Management Processes

### 4.1 Introduction

The purpose of the section is to review Council's planning referral, permit, inspections, approval, monitoring and community education processes for septic tank systems.

### 4.2 Planning Applications

#### 4.2.1 Processes

The Health Unit provides advice to the Planning Unit on domestic wastewater management with respect to the following planning/permit matters:

- Subdivision plans for all unsewered land.
- Applications to rezone land from rural/rural living to low density residential or low density residential to township.
- Excision of dwellings on land zoned rural or rural living.
- Approval of the construction or extension of dwellings on unsewered land.

The processes involved in the referral of these matters to the Health Unit are as follows:

#### *New Subdivisions*

All proposals for subdivision of land zoned township, low density residential, rural living and rural are referred to the Health Unit. The referral/approval process is as follows:

- The property owner seeks advice from the Planning Unit on the potential to subdivide his/her land. The Planning Unit advise the property owner that the allotments must have the capability to treat and dispose of wastewater on-site. If considered necessary to confirm this capability, the owner is advised that a land capability assessment must be submitted with these applications. If clarification is required on these matters, the Health Unit may be requested to be involved in the discussions. It should be noted that this is the formal

- process and that in many cases the developer will actually seek advice about wastewater matters from the Health Unit prior to submitting the permit application.
- The property owner submits an application. The application will include a plan showing the proposed lot layout and the location of building and disposal envelopes. The application is referred to the Health Unit for comment about the ability of the sites to contain wastewater on-site. The Health Unit will provide its comments on the application. For subdivisions of land zoned rural living and rural, this process is largely academic as the minimum lot sizes are big enough to accommodate wastewater on-site. For township and low density residential, site inspections and land capability assessments may indicate some instances where disposal is problematic. In these cases, the proposed lot layout may have to be modified.
  - For applications where modifications have been requested, the property owners will submit amended plans. This information will be referred to the Health Unit for further comment. The Unit will assess the information and make a final determination. This determination will be communicated to the Planning Unit.

#### *Rezoning of land*

Land owners wishing to rezone their land have to demonstrate that the land, if it was rezoned, would be able to contain wastewater on-site. The process is the same as described above for new subdivisions.

#### *Excision of dwellings*

Owners of land zoned rural and rural living can seek approval to excise their dwellings and curtilage from the larger property. In considering the application, Council has to be satisfied that each lot has the long term capability of containing wastewater on-site. Owners are required to submit plans which are referred to the Health Unit. In some cases, land capability assessments are also required. The site is inspected to ensure that the septic tank system is contained within the excised land. In some cases, there may be a need to upgrade the septic tank system or provide a new system. These requirements become subdivision conditions.

*Erection or extension of a dwelling on land where a planning permit is required*

Planning permits are required for the erection of new dwellings or extension of dwellings in unsewered areas in the following circumstances:

- On blocks smaller than 500sqm.
- On all lots zoned rural living.
- For a second dwelling on rural or rural living lots.
- On rural living and rural blocks which are less than 8ha and 40ha respectively.
- On all land where there are planning overlays which require a permit for dwellings.

With respect to domestic wastewater management, the approval process for these permits is as follows:

- The owner submits the permit application indicating the proposed method of wastewater treatment and disposal. If the application is straight forward - that is, there is no doubt that the property can treat and contain wastewater on-site, the Health Unit will indicate its approval for development to occur.
- If the proposal is complicated or there are concerns about the ability to treat and dispose of effluent on-site, the applicant may be asked to provide a land capability assessment to support the application. If it is apparent from the LCA and or an inspection of the site that wastewater cannot be treated and retained on-site, the Health Unit may recommend that the planning application be modified or refused.

*Erection or extension of a dwelling on land where a planning permit is not required*

Building permits for dwelling extensions on unsewered land where planning permits are not required could, in theory, be issued without reference to the Health Unit. If this occurred, there is a risk that the developments may not be suitable in terms of wastewater disposal. The Building Act requires Building Surveyors to contact Council's Health Unit to ensure that a septic tank system is feasible for the property before issuing a building permit. This ensures that all new dwellings are referred to the Health Unit. Extensions however may still be missed, particularly when no plumbing is involved. The Building Surveyor may not consider that the works have implications for the septic tank system and not refer the proposal to the Health Unit. The extension may however encroach on the septic tank system.

#### 4.2.2 Number of referrals

Table 1 shows the number of planning applications over the past four years that have been assessed by the Health Unit for wastewater implications.

**Table 1 – Wastewater assessments at the planning stage**

2001/2	2002/3	2003/4	2004/5	2005/6 to date
23	17	20	12	21

Around 20 applications are referred to the Health Unit each year. The majority are straight forward and no modifications are required. In some cases, more information is requested and modifications are asked for. Conditions may also be imposed on the permit but applications are rarely refused on wastewater grounds.

#### 4.2.3 Suitability of Processes

Council's planning and health staff were asked to comment on the effectiveness of the above processes and make suggestions for improvements. They said the processes were effective and efficient. Their only concern about the planning process is the possibility that a private Building Surveyor may issue a building permit for a dwelling or extension without reference to the Health Unit. This subsequently may complicate the issuing of a septic tank permit if there is insufficient land for disposal or may compromise the existing system if the extension is located over the top of the septic tank or drains.

### 4.3 Septic Tank Approvals

#### 4.3.1 Approval and Inspection Process

The approval and inspection process for septic tank systems is described below (note that the process has been formally approved by Council).

- Building Surveyor submits a 'report and consent' form to Health Unit requesting advice on whether the block is suitable for septic tank system. Health Unit responds to building

surveyor within 7 days advising the suitability of the block and possibly indicating what type of systems could be installed.

- Prior to installing the system, the owner (or the drainer/plumber on behalf of the owner) lodges an application to install the septic system. The application includes an indicative plan of the proposed system and the permit fee.
- The Health Unit assesses the application against Council's permit guidelines. It considers legislative, planning, the State Environment Protection Policy requirements and site characteristics. An inspection of the site may be conducted. If the Health Unit has concerns about the site, a land capability assessment may be requested. This is rare.
- The permit with or without conditions is approved. Although refusal to install a septic system generally occurs at the planning permit stage there are instances where a refusal will occur at the time of installing the septic system. Council ratifies the refusal by Council's Health Unit.
- Installation commences. Inspection occurs during installation - normally just prior to backfilling. Plumbers/drainers are sometimes allowed to proceed without inspection if it is difficult for Health Unit to attend at the time and Health Unit has confidence in the plumber/drainer.
- A final inspection is conducted to ensure that the system has been installed properly. This inspection is conducted when the Health Unit is notified that installation has been completed. Again this inspection is sometimes not performed if Health Unit cannot attend but is confident that the installation has been completed satisfactorily.
- A copy of the Plumbers Guarantee for plumbing works upstream of the septic tank or package plant is submitted to the Health Unit. An amended septic tank plan is also submitted if the location and components of the final system vary from the original plan.
- Following the final inspection and submission of further material, an approval to use the system is issued. This approval may contain conditions.
- Information on the inspections and copies of the permits – to install and use - are entered on the Health Manager database.

### 4.3.2 Number of systems

Table 2 provides data on the number of permits that have issued since July 2001. The data indicates that 20 systems are approved each year with on-site absorption being, by far, the most common form of treatment (77%).

**Table 2– Septic tanks permits**

Year	Septic tank/ Trenches	Treatment Plant	Septic Tank/ Sand Filter	Compost	Other	Total
2001/2	18	5	-	-	-	23
2002/3	14	3	-	-	-	17
2003/4	15	5	-	-	-	20
2004/5	9	3	-	-	-	12
2005/6	15	6	-	-	-	21
<b>Total</b>	<b>71</b>	<b>22</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>93</b>

### 4.3.3 Problems with processes

The Health Unit was asked to indicate whether it had any concerns with the approval processes. Its only concern was that some owners are using their systems without obtaining 'permits to use' and that Building Surveyors could be issuing certificates of occupancy without sighting the 'permit to use'.

### 4.3.4 Record Systems

#### *System*

Council's records system for septic tank systems is as follows:

- Completed hard copy files are kept of the applications, plans and permits and inspection notes. These are retained on the larger property files. The Health Unit is confident that it has 95% of all completed septic tank files.
- Electronic files with similar material (not the plans at this stage) are kept on the Council's property database Health Manager. Electronic records date back to 2003.
- Hard copy active files are kept by the Health Unit.

*Comments on record systems*

The Health Unit was asked to comment on its level of satisfaction with the records systems. The Unit indicated that it was satisfied with the system. With respect to the electronic copies, the Unit indicated that it was keen for all the material contained in the hard copies plans, inspection notes, permit condition letters etc to be eventually stored in the electronic system. This was technically possible now but would require considerable data entry time.

#### **4.4 Education and Monitoring Activities**

No education activities are currently being carried other than attempting to meet owners of new systems to explain how their septic tank systems work and should be maintained.

No regular and routine monitoring activities are performed. Instead systems are inspected as a result of a complaint, as part of special investigations undertaken in response to environmental or public health concerns or State Government programs, or as part of building a case for the sewerage of specific townships.

The permit conditions of treatment plans are not being rigorously enforced. Records are being kept of the maintenance reports and test results that are submitted. Some attempts have been made to follow up installers/owners that do not submit reports or test results but these have largely been unsuccessful.

#### **4.4 Summary**

The key findings of the review of wastewater management practices are as follows:

- The processing of planning applications from a wastewater management perspective is handled effectively. All applications are referred to the Health Unit and where appropriate to the relevant Authorities. The capacity of the proposed sites to treat and dispose of wastewater in a manner which is safe to public health and the environment is given paramount importance. Permits are refused, modified or approved with conditions if there are problems with wastewater disposal.

- There is a concern that house extension projects could occur without consideration of wastewater implications. Planning permits are not required for some home extensions and Council relies on Building Surveyors and homeowners to consider the impact the extension may have on the septic tanks systems. They may not do this and the septic system could be compromised.
- The septic tank approval and inspections process works effectively and efficiently and to the satisfaction of installers and owners.
- Council is operating an electronic database of septic tank permits together with hard files. The database is linked to Council's main property database which allows for the effective integration and recovery of information. The database appears to be working well.
- The database has the facility to store inspection notes and scanned maps of septic tank plans. This information is currently not being kept in the database but Council intends to do this in the near future.
- Old septic tank files can be easily accessed. Council has files for an estimated 95% of the systems installed. These files are stored in the larger property files.
- Council does not undertake regular and routine monitoring of septic tanks. It inspects systems as a result of complaints, if asked by the homeowner or as part of special investigations.
- Council's attempts to encourage owners of treatment plants to submit maintenance reports or conduct effluent tests have not been successful.
- Council does not conduct education activities other than attempting to meet with owners on-site during or post the installation of their septic tank systems to explain how the systems work and should be maintained.
- The Health Unit assesses 20 planning referrals and inspects and approves 20 septic tank systems per year. Rarely are permits refused, in some cases modifications are required.
- 77% of the 93 systems installed over the past five years have been all waste on-site absorption systems. 23% have been treatment plants.

## **Section Five – Audit of Wastewater Systems**

### **5.1 Introduction**

This section provides information on the findings of the recently conducted audit of septic tank systems in the City.

### **5.2 Unsewered Townships**

Reticulated sewerage is provided to Warrnambool, Allansford and Dennington. The remainder of the City is unsewered including the Wangoom Rd area and the Bushfield and Woodford townships. It is estimated that there are around 350 properties in the City on septic systems. Of these, 150 are in the Wangoom Rd area and the unsewered townships.

### **5.3 Types of Septic Tank Systems**

Early disposal methods were split systems with drop toilets, wastewater wells and pan closets with grey water discharging to the surface.

These were superseded in the 1930s and 40s by split septic systems where black water (toilet waste) was treated and retained on-site normally in an 1800 litre tank and 20 metres of drain and grey water was contained on-site or discharged off-site to a stormwater drainage system, land or surface water.

Split systems were superseded in the early 1980s by all waste septic systems with effluent retained on-site in absorption drains or treated and then retained on-site or discharged off-site. Normally one 3200 litre or two 1800 litre tanks in series were installed. The effluent then discharged into 60m of rein drain or 90m of slotted PVC. Properties that could not retain waste on-site were permitted to install all waste sand filters of approximately 18 sqms or package treatment plants with an off-site disposal to an approved point of discharge.

Off-site discharge ceased in 1999 due to EPA guidelines and changes to Statewide planning controls. All new systems now retain wastewater on-site.

## 5.4 Township Audits

### 5.4.1 Audit/Inspection process

The audit process involved the following steps:

- A walk around the towns to note topographical features, property sizes, age of houses and other buildings, properties that were discharging off-site, locations where wastewater was pooling, offensive conditions etc.
- Inspections of a sample number of properties in each township to note the:
  - Size of the block and the type of building.
  - Type of wastewater system and the method of treatment and disposal of effluent.
  - Condition and age of the system.
  - The owner's awareness of where the system was located and how it operates.
  - The date when the tank was last desludged.

### 5.4.2 Audit findings

#### *General*

The positive findings of the audit were as follows:

- A surprising proportion of owners knew the location of their septic tank systems and a reasonable proportion indicated that they had desludged their tanks in the past five years. Many admitted that the letter advising of the audit visits prompted them to find their tanks and in some cases to desludge.
- A significant proportion of owners were aware of the importance of desludging their tanks, not building over the septic system, not disturbing the effluent drains and not planting inappropriate vegetation.
- Considering the age of the houses in many of the townships, a surprisingly low proportion had failing effluent drains and a high proportion of owners indicated that they had little problem with their systems other than the occasional blockage of the inlet drains.
- A number of properties were successfully re-using their grey water through controlled irrigation systems.

The negative findings of the audit were as follows:

- Failing septic tank effluent drains (not large number).
- Some septic tanks system with broken lids, vents, distribution pits etc (including some Council properties).
- Some systems that are inaccessible and as a result have not been desludged for many years.
- Some systems being modified without reference to Council. In some cases, the modifications have been successful; in others they have compounded the problem. In some cases, the modifications breach the Code of Practice with respect to setback distances from boundaries etc.
- Houses, outbuildings, access roads etc being constructed without reference to Council and in a manner which have compromised the septic tank systems on the blocks.
- Grey water ponding in open drains and causing offensive odours (only minor).
- Treatment plants not being checked on a quarterly basis. Almost all are not having their effluent sampled on an annual basis.

#### *Townships*

A detailed outline of the audit findings for each township is provided in Part B of this document. A summary of the findings is as follows:

- Wangoom Road
  - The predominant systems are all waste and split systems with on-site disposal
  - Most systems appear to be working well. Some systems have failed in the past but have been repaired
  - A small number discharge off-site. Not a significant problem
- Bushfield
  - Range of systems but predominantly on-site disposal
  - Ageing systems
  - No evidence of failing systems. Some systems apparently fail in winter
- Woodford
  - Range of systems but predominantly on-site disposal
  - Ageing systems
  - Evidence of failing systems
  - Houses within 60 buffer of creek. Steep slope to creek

- A number of treatment plants in area. Concern about whether they are functioning properly

## 5.5 Summary

The key findings of the audit of wastewater systems are as follows:

- The most common form of treatment is all waste on-site disposal. There are a few houses with split systems where grey water is being discharged off-site.
- Some of the properties inspected had defective systems. The most common defect was inaccessible systems followed by damaged tanks/pits/pipes/effluent drains.
- About 35% of systems in the townships were more than 24 years old. 25 years is considered to be the typical lifespan of septic systems. Therefore many systems have reached or will soon reach the end of their serviceability.
- Some properties located near watercourses are within the 60m setback distance and might be contaminating the watercourses. This needs further investigation.
- Some systems are failing in Wangoom Rd, Woodford and Bushfield mainly in winter.

## Section Six - Development Activity

### 6.1 Introduction

This section identifies the development activity that is occurring or could occur in the unsewered townships and unsewered fringes of seweried townships and discusses their implications for wastewater management. This section should be read in conjunction with Part B – Detailed Assessment of Townships.

### 6.2 Development Activity

#### 6.2.1 Recent activity

The development activity that has occurred during the past 3 years in the unsewered townships and fringes is provided in Table 3.

**Table 3 – Recent Activity: Building and Town Planning Applications (2002-2005)**

Township	New dwellings	Significant renovations	Subdivision applications
Bushfield	14	3	2
Woodford	12	4	5
Wangoom Rd	8	1	2
Allansford (fringes)	11	5	10
Warrnambool (fringe)	9	6	8

The table indicates that the level of new dwelling and major renovation activity is similar in the townships and the fringe areas. Most of the subdivision activity, however, is occurring in the unsewered fringes of the seweried areas.

#### 6.2.2 Potential Activity

Each unsewered township has a number of subdivided blocks which are zoned township or low density residential. Some of these subdivisions were approved prior to the requirement that all blocks be capable of treating and containing their wastewater on-site. As a consequence, there are lots which because of their size and sometimes their slope, soil type, proximity to water bodies etc may be difficult to develop. There are also a number of developed blocks that could be unsuitable

for further building (extensions, decks, pools etc) or redevelopment (building demolition and upgrade) because of similar factors.

It would be beneficial for Council to identify and map these potentially problematic blocks. This information would be useful when dealing with enquiries from current owners or prospective purchasers about the suitability of properties for development or redevelopment. It may also help to speed up the planning referral process. The following undeveloped and developed blocks should be mapped in each township:

- Blocks that are smaller than 1000m<sup>2</sup> or ¼ of acre.
- Blocks that have a slope greater than 20%.
- Blocks that are within the prescribed setback distances from watercourses.
- Blocks that are subject to planning overlays that have implications for domestic wastewater treatment eg land subject to inundation.

Other information such as soil types, vegetation and important environmental features should also be included in the maps.

Council may wish to go further with the mapping process and identify those properties that **cannot** be developed for wastewater reasons (if any). It may then wish to propose solutions (if feasible) to allow development such as consolidating blocks or encouraging the installation of common treatment plants.

#### *Potential rezonings and subdivisions*

Property owners of residential land can in certain circumstances seek to further subdivide their land. Owners of low density residential land could apply to rezone their land to township and then subdivide. They could also apply to subdivide without seeking rezoning. From a wastewater disposal perspective, Council would have to be satisfied that the blocks created by the subdivisions have the capacity to treat their wastewater on-site. For land zoned and remaining low density, a minimum lot size of 0.4ha is stipulated. No minimum size is stipulated for township blocks.

### 6.3 Implications for wastewater management

The implications of the analysis of development activity for wastewater management are as follows;

- Bushfield, Wangoom Rd and Woodforde are experiencing similar and moderate levels of development activity. This activity has potential wastewater implications. Although Council will only allow development where it is confident wastewater can be treated on-site, the addition of new houses in these townships intensifies overall development and adds to the hydraulic load on the soil and the potential for contamination of nearby water bodies.
- The development interest in these towns results from a number of factors – the availability of vacant blocks, the affordability of land, the size of the blocks and closeness to Warrnambool and the sea. These factors will prevail in the future and development pressure will continue. Council should monitor these development levels and if feasible and needed, give consideration to other forms of treatment other than individual septic tank systems.
- The towns have a number of blocks which could be problematic for development. Consideration needs to be given to identifying and mapping these blocks and proposing innovative solutions which may allow development to occur.

## Section Seven – Consultation Outcomes

### 7.1 Introduction

This section provides the outcomes of the consultation with the local key stakeholders directly involved or having an interest in domestic wastewater management. These stakeholders include Council staff, the agencies listed in Section Three of this Part and local contractors such as private building surveyors and town planners, plumbers, treatment plant maintenance contractors, septic tank waste removal contractors and owners/tenants of properties with septic tank systems.

### 7.2 Outcomes

#### 7.2.1 Council

Council staff were asked to indicate what special issues the plan should address. Their comments were as follows:

- Making recommendations about effectively educating householders on the management of their systems.
- Investigating the feasibility of Wannon Water's proposal to establish a regional wastewater management program.
- Investigating the feasibility of requiring householders to more frequently desludge their septic tank systems.
- Examining the legality and feasibility of Council introducing a special charge to fund a comprehensive wastewater management program.
- Identifying what monitoring activities Council should undertake with respect to treatment plans.
- Reviewing the land capability assessment process and making recommendations on how it could be improved.
- Investigating the best method of informing prospective purchasers of unsewered properties of the ramifications of the block being unsewered.
- Ensuring that occupancy certificates are not issued prior to septic tank 'permits to use' being issued.

- Investigating the feasibility of introducing a comprehensive mapping system for septic tank systems using GPS.

### **7.2.2 Key agencies**

The key agencies were asked to identify what special issues the plan should address. Their comments were as follows:

#### *Wannon Water*

- Introducing effective mechanisms for controlling the unauthorised and illegal dumping of septic tank waste and predicting the amount of waste that will be disposed of at the Authority's receival facilities.
- Improving the performance of wastewater systems, particularly in water catchment areas.
- Investigating the feasibility of introducing a regional wastewater management program.
- Ensuring that the resources allocated to wastewater management across the region are used effectively and efficiently.
- Improving relationships between the organizations that are directly involved in or have an interest in wastewater management.

#### *Glenelg Hopkins Catchment Management Authority*

- Increasing the levels of wastewater reuse across the region.
- Ensuring that all new developments contain their wastewater on-site.
- Encouraging, where feasible, owners of houses that currently discharge off-site to contain wastewater on their properties.
- Placing special emphasis on improving the systems of houses that are close to waterways.

#### *EPA*

- Ensuring that all wastewater is kept within the title boundaries and does not pollute the environment.
- Enforcing EPA guidelines.

*DSE*

- Enforcing EPA guidelines.
- Ensuring septic systems do not pollute rivers and ground water supplies.

**7.2.3 Local contractors involved in wastewater industry**

Local contractors involved in wastewater activities were asked to comment on the wastewater management practices of Council and to make suggestions about how these practices could be improved. They were also asked to generally comment on any matters of concern they had about wastewater management. The contractors included private town planners, companies undertaking land capability assessments, building surveyors, treatment plant manufacturers, plumbers, maintenance contractors and septic tank waste removal contractors. Their comments were as follows:

*Private Town Planner, Building Surveyors and Plumbers*

- All were highly satisfied with the level of service and quality of advice they get from Council. They described the Council's EHO as competent, cooperative and knowledgeable.
- The private town planner expressed some misgivings about the competency of some companies/individuals undertaking LCAs. He indicated his support for an accreditation process for assessors. He added that assessors should be required to have an extensive knowledge of treatment systems not just soil science.

*Land capability assessor*

- The assessor was highly satisfied with the assistance, advice and cooperation he gets from Council.
- He expressed the following concerns about wastewater management guidelines and processes:
  - The literal and inflexible application of the Code of Practice could prevent the development of a significant number of properties along the coast which in his opinion were highly developable. The setback distances table in the Code should be able to be flexibly applied and take into consideration soil profile and type of treatment system. As

examples, if a treatment plant can guarantee a better water quality than 20/30, say 10/10, then setback distances should be able to be reduced. If a block has sandy soils to a considerable depth, the setback distances should also be able to be reduced as there would be little horizontal drainage.

- The note in the Code relating to setback distances which enables distances to be reduced if Council has a septic tank compliance program which enforces 20/30 quality of effluent. His concern is that this provision could prohibit development if Council does not have a compliance program.
- Development applications for properties near surface or ground waters being refused because of concerns about nutrient loads. He argued that the nutrient loads of treatment plant and sand filter effluent were in many cases lower than those found in stormwater runoff.
- Setback distances for properties and systems near the coast as the sea/ocean is not included in the Buffer Distances Table in the Code. Councils are applying 60m. Is this reasonable?
- The absence of a mechanism of appeal, other than VCAT, for homeowners/developers who are not permitted to develop their properties because of wastewater concerns. He recommended that some form of local appeals process should be introduced.
- Property owners being requested to provide LCAs where it is obvious the sites have the capacity to treat wastewater on-site. He indicated that LCAs were expensive and should not be requested if not necessary.
- The wide variation in the quality of LCAs provided. Some assessors provide detailed reports covering all the areas listed in the guidelines. Some provide limited information. Councils seem to be prepared to accept both.
- The wide variation in the qualifications, knowledge and experience of assessors. Assessors should be required to have prescribed capacities. An accreditation process should be considered.

#### *Treatment Plant Installer and Maintenance Contractor*

- The contractors were highly satisfied with the level of cooperation they get from Council.
- The contractors admitted concerns about the long term performance of the treatment plant systems – not because they do not work but that owners will not maintain them properly. A maintenance contractor advised that he rarely gets called back to maintain systems after the

first year of operation. He said that he randomly checks systems and often finds that they are malfunctioning and that the effluent is not being chlorinated etc. He recommended that the permit requirements that systems are regularly checked be strictly enforced.

#### *Septic tank waste removal contractors*

- The waste removal contractors confirmed that very few people have their tanks routinely emptied. Nearly every time they are called to a house the septic tank is malfunctioning. They said that property owners should be required to more regularly empty their tanks. The frequency would depend on the type of system, the number of tanks, and the size of the household. 5 years was suggested as the average time.
- The plumbers also stressed the importance of desludging. They indicated that more than 95% of the repair jobs they have done on septic tanks could have been avoided if the tanks were more regularly desludged.

### **7.3 Implications**

A summary of the key outcomes of the consultation with stakeholders and the implications of these outcomes for wastewater management in Warrnambool City are as follows:

- The issues raised by the key stakeholders should be considered and, where feasible, addressed by this study.
- Wannon Water's proposal of introducing a regional wastewater monitoring program should be critically discussed.
- Contractors involved in the approval of building permits and the installation and maintenance of septic tank systems are highly satisfied with the service they get from Council. It is important that this level of service continues.
- The views expressed by the land capability assessor should be considered and where appropriate referred to the MAV and EPA.
- The concerns about the quality and scope of information provided in land capability assessments and the qualifications (or lack of) of assessors should also be referred to the EPA.

- It is apparent that some treatment plants are not maintained properly and are probably discharging poor quality effluent. Council needs to introduce a more rigorous monitoring regime for these systems.
- It is also apparent that very few people routinely have their septic tank desludged and normally wait until a problem occurs. Local plumbers confirm that most of the problems they encounter with blocked effluent drains can be attributed to tanks not being desludged. Consideration needs to be given to introducing a compulsory desludging program.
- There is a concern that septic tank waste is being dumped illegally. This heightens the need for a centrally controlled desludging program.
- The agencies responsible for environment protection, potable water supply and river health want the incidence of off-site discharge to be reduced. Council needs to give consideration to introducing a strategy to achieve this objective.

## **PART B – ASSESSMENT OF TOWNSHIPS**

## Section Eight – Detailed Township Assessments

### 8.1 Introduction

This section part contains a detailed assessment of the unsewered townships in the City from a wastewater management perspective. The assessment provides the following information for each township:

- Township characteristics:
  - Location.
  - Soil types and surface and groundwater.
  - Built environment.
- Wastewater disposal:
  - Methods of treatment and disposal.
  - Defective systems and age of systems.
  - Age of systems.
- Development activity:
  - Recent activity and potential activity.
  - Restrictions on development.

The assessment concludes with a summary of findings and recommended actions for each township. The information provided in the assessments has been derived from the Country Towns Water Supply and Sewerage Program Report, information provided by Council staff and the audit/investigations conducted for this Study.

### Map 1 – Unsewered Townships



## 8.2 Wangoom Rd

### 1. Township characteristics

- The Wangoom Rd area is located about 12 km north of Warrnambool off the Hopkins Hwy.
- The terrain is relatively flat with a gentle slope towards the tributary of Russell's Creek which starts in the Wangoom Rd area
- The predominant soil type is shallow topsoil over heavy expansive clay - a category 5/6 soil which poorly drains.
- The area has a population of 138 people.

### 2. Properties and Built Environment

- There are 69 properties in the Wangoom Rd area. 11 properties are 1000sqms, 38 are 4000sqms and 20 are larger than 4000sqms. 43 properties contain dwellings.
- Wangoom Road is sealed and in parts has kerb and channel. The minor roads are unsealed. There are no underground drains. The open drains fall to the Russell's Creek tributary in the south and to a land depression in the north.
- The area does not have a reticulated water system and relies on tank water.

### 3. Outcomes of Audit

#### *Properties*

- Density rates do not exceed 10 dwellings per ha in any parts of the township.
- No properties have more than a 20% slope.

#### *Septic tank systems*

- The majority of systems are all waste on-site disposal systems. There are some split systems, most of which contain their wastewater on-site.
- The systems range from 1 to 30 years old. The average age is 10 years.
- 2 properties are discharging grey water off-site into street drains. This discharge was not causing offensive conditions at the time of the inspection.

- 3 properties had failing WC systems at the time of the audit. A previous study conducted in winter revealed that the failure rate was higher in wet weather.

#### *Environmental/Public Health concerns*

- Effluent from septic tanks surfacing on 3 properties.
- Potential contamination of Russell's Creek Tributary

#### **4. Summary of Findings**

- Area is experiencing modest but steady growth.
- There are 26 vacant blocks in the area. 2 may be difficult to develop on wastewater grounds because of their size and soil type.
- Topography is suitable for septic systems. Soil type is not ideal.
- The majority of septic tank systems are on-site absorption systems. Most are working well at the moment but because of the poor soil, many may fail as they get older.
- 3 systems were failing at the time of the audit. Others reportedly fail in winter.
- 2 properties are discharging off-site. The discharges were not causing offensive conditions at the time of the audit.

#### **5. Conclusion and Recommendations**

- Sewering of the township can be justified on the basis of the unsuitability of the area for wastewater disposal (poor soil types, some small blocks with little room for the renewal of absorption fields etc). However, the distance to the sewer and other factors may make the provision of sewer not feasible. Council should discuss this matter with Wannon Water.
- In the interim, Council should concentrate on optimising the performance of existing systems and ensuring that householders take the right action when their systems fail. Suggested actions are:
  - Letter to householders stressing the importance of maintaining their systems. Especially emphasise the importance of desludging the tanks and not building or driving over effluent fields
  - Education kit to all householders on proper maintenance of systems. Include information on the types of trees to plant in effluent fields.
  - Advice to householders with failing systems about what action to take.

- Advice to householders on what action to take when their systems exhibit signs of failure.
- Investigation of other grey water discharges and advice to owners on appropriate action
  - reuse, improved treatment, absorption on-site.
- Regular desludging of tanks and monitoring of systems in core township area.
- Conduct water sampling of tributary in winter when carrying water

### 8.3 Woodford

#### 1. Settlement characteristics

- Woodford is located to the east of the Hopkins Hwy about 15 kms from Warrnambool. The settlement has an estimated population of 180.
- The terrain is undulating. 60% of properties drain in a westerly direction to the Merri River.
- The predominant soil type is shallow topsoil over expansive light clay.

#### 2. Properties and Built Environment

- There are 88 properties in Woodforde all zoned low density residential. 14 properties are 1000 sqms or less. 30 properties are between 1000 and 2000 sqms. The remainder are larger. 53 properties have been developed.
- 2 new subdivisions have been approved on the western side of the Merri River. The blocks created by the subdivision are all more than 4000 sqms.
- The main road is sealed and the local roads are unsealed. There are no underground drains.
- The town does not have a reticulated water system and relies on water tanks.

#### 3. Outcomes of Audit

##### *Properties*

- Density rates do not exceed 10 dwellings per ha in any parts of the settlement.
- 9 blocks are within 60 metres of the river. 4 of the properties have close to 20% slope. 7 are developed.

##### *Septic tank systems*

- There is a mix of septic tank systems in the township. The majority are all waste on-site disposal systems. The older properties have split systems, all of which contain their wastewater on-site. There are 3 treatment plants and a reed bed.
- The systems range from 1 to 50 years old. 85% are less than 25 years old.
- No properties are discharging effluent off-site.

- No properties had failing WC systems at the time of the audit. However, plumbers, residents and septic tank waste removal contractors confirm that some systems in Woodford fail during wet winters.

#### *Environmental/Public Health concerns*

- Potential contamination on Merri River by wastewater.
- Effluent surfacing on blocks during wet winters.

#### **4. Summary of findings**

- Topography is suitable for septic systems. Soil type is not ideal.
- 9 blocks are within 60 metres of the creek. 4 have more than a 20% slope.
- At the time of the audit, no offensive conditions or environmental damage was being caused by wastewater discharge. However during wet weather, systems do fail and effluent could contaminate the Merri River

#### **5. Recommendations**

- Sewering of the township cannot be justified because of the small population size and the low numbers of problems with septic systems. However, as the systems age problems could occur if they are not properly maintained. As well as causing offensive conditions, the failing systems may cause pollution of the River.
- Council should concentrate its management program on optimising the performance of existing systems, ensuring that householders take the right action when their systems fail and protecting the river from pollution. Suggested actions are:
  - Letter to householders stressing the importance of maintaining their systems. Especially emphasise the importance of desludging tanks and not building or driving over the effluent field
  - Education kit to householders on proper maintenance of systems. Include information on the types of trees to plant in effluent fields.
  - Advice to householders on action to take when their systems exhibit signs of failure.
  - Conduct monitoring program in winter.
  - Monitor treatment plants.
  - Conduct water sampling of Merri River upstream and downstream of the houses.

## 8.4 Bushfield

### 1. Township characteristics

- Bushfield is located about 15 kms north of Warrnambool on the Hopkins Hwy.
- The terrain is relatively flat with a gentle slope in the western section of the settlement to the Merri River.
- The predominant soil type is shallow topsoil over light expansive clay - a category 5/6 soil which poorly drains.
- The settlement is zoned rural living and low density residential. It has a population of 230.

### 2. Properties and Built Environment

- There are 135 properties in Bushfield. 45 in the low density residential zone and 90 in the rural living zone. 5 properties are 1000 sqms, the remainder are larger than 2000 sqms. 71 houses have been developed.
- The roads are a mix of sealed and unsealed. There are no underground drains.
- The area does not have a reticulated water system and relies on tank water.

### 3. Outcomes of Audit

#### *Properties*

- Density rates do not exceed 10 dwellings per ha in any parts of the settlement.
- 3 properties are within 60 metres of the River. The blocks are large and setback distances can be achieved.
- No properties have more than a 20% slope.

#### *Septic tank systems*

- The majority of systems are all waste on-site disposal systems. There are some split systems, most of which contain their wastewater on-site.
- The systems range from 1 to 30 years old.
- No properties are discharging grey water off-site.

- No systems were failing at the time of the study. Plumbers and residents advise that some systems fail in winter.

*Environmental/Public Health concerns*

- Failing systems in winter.

#### **4. Summary of Findings**

- There are 40 vacant blocks in the area. All are developable from a wastewater perspective
- Topography is suitable for septic systems. Soil type is not ideal.
- The majority of septic tank systems are on-site absorption systems. Most are working well at the moment but because of the poor soil, many may fail as they get older.
- No systems were failing at the time of the audit. Some reportedly fail in winter.
- No properties are discharging off-site.

#### **5. Conclusion and Recommendations**

- Sewering of the settlement cannot be justified. Development is relatively dispersed, most blocks are more than 2000sqms, most systems are working well and there is no off-site discharge. However, the soil in the area poorly drains and the systems are ageing. The failure rate may increase in the future.
- Council should concentrate its management program on optimising the performance of existing systems and ensuring that householders take the right action when their systems fail. Suggested actions are:
  - Letter to householders stressing the importance of maintaining their systems. Especially emphasise the importance of desludging the tanks and not building or driving over the effluent field.
  - Education kit to all householders on proper maintenance of systems. Include information on the types of trees to plant in effluent fields.
  - Advice to householders on what action to take when their systems exhibit signs of failure.
  - Conduct monitoring program in winter.

## **PART C – KEY FINDINGS/MAJOR ISSUES**

## Section Nine - Key Findings/Major Issues

### 9.1 Introduction

This section summarises the key research findings of the study and outlines and discusses the major issues that emerge from these findings.

### 9.2 Key Findings

A summary of the key findings is as follows:

#### 9.2.1 Review of legislation, codes of practice and policy

- Council's legal power to require owners of septic tank systems to modify their septic tank systems is uncertain. Council has the power to order property owners to repair failing systems e.g. water surfacing from effluent lines. It also has the power to order property owners to repair or even modify their systems if the systems are causing a nuisance e.g. an effluent discharge which is causing an offensive odour. However, it appears that Council does not have the power to require a person to modify a system which is not causing a nuisance and is performing as per the conditions of its original permit e.g. an approved split system with grey water discharging off-site but not in a manner which causes offence. If this is an accurate interpretation of Council's powers, it may diminish Council's ability in some circumstances to deal with off-site discharges of grey water.
- Council may be able to strengthen its power to deal with 'approved' off-site discharges of grey water. The Local Government Act gives Council the power to enact local laws to regulate wastewater management issues as long as these laws are consistent with State policy and legislation. State policy currently recommends that all wastewater be contained on-site. Therefore, Council may be able to enact regulations which it can apply to properties with split systems.
- The Local Government Act gives Council the power to introduce a special charge on homeowners to fund any 'genuine function if the function benefits the persons being charged'. Therefore, Council may be able to raise a charge to fund a domestic wastewater management program if it can demonstrate the 'genuineness' and benefits of the program.

- Council is required to remedy nuisance conditions 'as far as reasonable' which exist in its municipality. Therefore, Council must act if it is aware of a nuisance condition being caused by a septic tank system. However, the qualification 'as far as reasonable' provides Council with some leeway in determining what to do. In some situations, the solution may be difficult and costly or there may be no practical solution. Council may be able to say that it cannot resolve the problem in a manner that is reasonable.
- Within their sewer districts, Water Authorities have the power to inspect septic tank systems and order owners to repair and/or properly maintain their systems. They also have the power to carry out works on septic systems and impose charges for these works (if a by-law is created). These provisions appear to give Wannon Water more effective powers than Council to facilitate the repair of septic systems in its sewer district.
- Building Surveyors cannot legally issue a certificate of occupancy until a permit to use has been issued. It is apparent that people are occupying houses without a permit to use. They may be doing this with or without a certificate of occupancy. This need to be addressed.
- Council's planning schemes promotes good wastewater management practices. It requires all properties to be able to contain their wastewater on-site, it specifies minimum lot sizes which are based on allowing sufficient land for wastewater disposal, it provides for rigorous scrutiny of proposals in environmentally sensitive areas (near watercourses, in water catchment zones, near the coast), it requires land capability assessments in some circumstances and it provides for referrals to key agencies for their input.

### **9.2.2 Review of Roles and Responsibilities**

- The review of the roles of Council and other agencies indicates that other local and regional agencies have an important role to play in the wastewater management. Council needs to work closely with these bodies and keep them fully informed of any actions it is taking with respect to wastewater management which may have relevance to their operations.

### **9.2.3 Review of Planning, Permit and Approval Processes**

- The processing of planning applications from a wastewater management perspective is handled effectively. All applications are referred to the Health Unit and the appropriate Authorities. The capacity of the proposed sites to treat and dispose of wastewater in a manner which is safe to public health and the environment is given paramount importance.

- Permits are refused, modified or approved with conditions if there are problems with wastewater disposal.
- There is a concern that house extension projects in unsewered areas could occur without consideration of wastewater implications. Planning permits are not required for some home extensions and Council relies on Building Surveyors and homeowners to consider the impact the extension may have on the septic tanks systems. They may not do this and the septic system could be compromised by the proposed extensions.
  - The septic tank approval and inspections processes at Council work effectively and efficiently and to the satisfaction of installers and owners.

#### **9.2.4 Review of records systems, monitoring activities and education programs**

- Council is operating an electronic database of septic tank permits together with hard files. The database is linked to Council's main property database which allows for the effective integration and recovery of information. The database appears to be working well.
- The database has the facility to store inspection notes and scanned maps of septic tank plans. This information is currently not being kept in the database. Old septic tank files can be easily accessed.
- Council does not undertake regular and routine monitoring of septic tanks. It inspects systems as a result of complaints, if asked by the homeowner or as part of special investigations. Council is not attempting to follow up owners of treatment plants who fail to submit maintenance reports or conduct effluent tests but with little success.
- Council does not conduct education activities other than attempting to meet with owners on-site during or post the installation of their septic tank systems to explain how the systems work and they should be maintained.
- The Health Unit assesses 20 planning referrals and approves 20 septic tanks per year. 77% of the systems installed since 2001 have been all waste on-site absorption systems. 23% were treatment plants.

#### **9.2.5 Key stakeholders' views on issues the plan should address**

- The issues raised by the key stakeholders should be considered and, where feasible, addressed by this study.

- Wannon Water's proposal of introducing a regional wastewater monitoring program should be critically discussed.
- Contractors involved in the approval of building permits and the installation and maintenance of septic tank systems are highly satisfied with the service they get from Council. It is important that this level of service continues.
- The views expressed by the local land capability assessor about the deficiencies in the assessment regime should be considered and where appropriate referred to the MAV and EPA.
- The concerns about the quality and scope of information provided in land capability assessments and the qualifications (or lack of) of assessors should also be referred to the EPA.
- It is apparent that some treatment plants are not maintained properly and are probably discharging poor quality effluent. Council needs to introduce a more rigorous monitoring regime for these systems.
- It is also apparent that many people do not routinely have their septic tanks desludged and normally wait until a problem occurs. Local plumbers confirm that most of the problems they encounter with blocked effluent drains can be attributed to tanks not being desludged. Consideration needs to be given to introducing a compulsory desludging program.
- There is a concern that septic tank waste is being dumped illegally. This heightens the need for a centrally controlled desludging program.
- The agencies responsible for environment protection, potable water supply and river health want the incidence of off-site discharge to be reduced. Council needs to give consideration to introducing a strategy to achieve this objective.

### 9.2.6 Audit Findings

#### *General*

- The most common form of treatment is all waste on-site disposal. There are a few houses with split systems where grey water is being discharged off-site.
- Some of the properties inspected had defective systems. The most common defect was inaccessible systems followed by damaged tanks/pits/pipes/effluent drains.

- About 35% of systems in the townships were more than 24 years old. 25 years is considered to be the typical lifespan of septic systems. Therefore many systems have reached or will soon reach the end of their serviceability.
- Some properties located near watercourses are within the 60m setback distance and might be contaminating the watercourses. This needs further investigation.
- Some systems are failing in Wangoom Rd, Woodford and Bushfield mainly in winter.

#### *Townships*

- Wangoom Road
  - The predominant systems are all waste and split systems with on-site disposal
  - Most systems appear to be working well. Some systems have failed in the past but have been repaired
  - A small number discharge off-site. Not a significant problem
- Bushfield
  - Range of systems but predominantly on-site disposal
  - No evidence of failing systems. Some systems apparently fail in winter
- Woodford
  - Range of systems but predominantly on-site disposal
  - Evidence of failing systems
  - Houses within 60 buffer of creek. Steep slope to creek
  - A number of treatment plants in area. Concern about whether they are functioning properly

#### **9.2.7 Development Activity**

- Bushfield, Wangoom Rd and Woodforde are experiencing similar and moderate levels of development activity. This activity has potential wastewater implications. Although Council will only allow development where it is confident wastewater can be treated on-site, the addition of new houses in these townships intensifies overall development and adds to the hydraulic load on the soil and the potential for contamination of nearby water bodies.
- The development interest in these towns results from a number of factors – the availability of vacant blocks, the affordability of land, the size of the blocks and closeness to

Warrnambool and the sea. These factors will prevail in the future and development pressure will continue. Council should monitor these development levels and if feasible and needed, give consideration to other forms of treatment other than individual septic tank systems.

- The towns have a number of blocks which could be problematic for development. Consideration needs to be given to identifying and mapping these blocks and proposing innovative solutions which may allow development to occur.

### **9.2.8 Good Practice Benchmarking**

Table 4 on the following pages provides an assessment of wastewater management practices in Warrnambool against what is considered to be good practice. The assessment indicates that the Warrnambool performs very well, with the exception of the following areas:

- Building Surveyors submitting 'report and consent forms' for all relevant building projects in unsewered areas.
- Developers having a good understanding of wastewater management and submitting realistic development proposals (only a few incidences).
- Plumbers/owners fully completing septic tank application forms.
- Plumbers giving reasonable notice for inspections (only a few incidences).
- Plumbers/owners calling for final inspections (only a few incidences).
- Inspections notes, plans etc being scanned on to hard files.
- Owners of treatment plants submitting quarterly reports.
- Routine monitoring of septic systems.
- Septic tanks being regularly desludged.
- Owners being aware of the location of their septic tanks.
- Identification and special monitoring of septic tanks systems that discharge off-site or are located near watercourses.
- Identification of blocks which could be problematic for development from a wastewater perspective.
- Monitoring of stream pollution by wastewater.
- Submission of annual report to EPA.

Table 4 – Good practice benchmarking

Item	Importance (out of 5, 5 being very important)	Score 1 – poor , 5 very good					Comments
		1	2	3	4	5	
<b>Building permit 'Report and Consent' process</b>							
The process is simple and clearly understood by local building surveyors	5					5	
A reasonable fee is charged by Council	3					5	No fee is charged
Building surveyors submit forms for all relevant applications	4			3			Form are not being submitted for house extensions
All relevant information is examined by EHO about each site	5					5	
EHO has knowledge of or inspects all sites	5					5	
EHO responds in a reasonable timeframe	5					5	
EHO provide a clear and meaningful response	5					5	
Copy of form is kept on appropriate file and referred to when septic tank application is submitted	3					5	
<b>Town planning process</b>							
Developers, buildings etc have sufficient knowledge and information about planning rules and wastewater management to submit appropriate reasonable applications	5			3			Some recent applications indicate that some developers do not have a good understanding
EHO is available to provide information to planning applicants prior to submitting application	3					5	
All relevant planning applications are referred to EHO	5					5	
EHO is provided with sufficient information to make informed decision	5					5	
EHO inspects or has sufficient knowledge of the referred site	5					5	
Referrals are processed by EHO in a reasonable time frame	5					5	
EHO gives clear and concise information to planners	5					5	
Planners act on advice	5					5	
<b>Information and application forms</b>							
Council has a short, specific code of practice and clear guidelines	4					5	
Council application form requests the appropriate information and is easy to complete	4					5	
Council charges a reasonable fee	4					5	

Item	Importance (out of 5, 5 being very important)	Score 1 - poor, 5 very good					Comments
		1	2	3	4	5	
<b>Approval and application process</b>							
Plumbers/owners understand the process	5					5	
EHO is available to provide information to/meet with plumbers/owners prior to submitting application	5					5	
Applications are properly filled in by applicant	4				4		Sometimes the EHO will have to chase up information
Applications are checked thoroughly to ensure they are filled in properly	4					5	
Sites are inspected (if needed)	5					5	
Application is processed in a reasonable timeframe	5					5	
Permit outlining all conditions is forwarded to applicant and owner if not applicant	5					5	
<b>Inspection process</b>							
Plumbers/owners understand the process	5					5	
Plumbers give reasonable notice for inspections	5				4		Some requests from plumbers are unreasonable
EHO inspects all installations prior to backfill	5					5	
Any problems with installation are clearly communicated to installers and applicants	5					5	
<b>Approval to use process</b>							
Plumbers/owners understand the process	5					5	
All final inspections are called for	5			3			Some inspections are not called for by plumbers/owners
Systems are being properly backfilled	5			3			Some may not be because final inspections are not called
Amended plans are supplied where necessary	5			3			Some are not supplied because permit to use is not asked for by owners
Copy of plumbers certificate is provided	5			3			Some are not supplied because permit to use is not asked for by owners
Approval to use is forwarded with appropriate information	5					5	When requested
No certificates of occupancy are issued with approval to use being issued	5			3			Some houses are being occupied without permit to use being issued.

Item	Importance (out of 5, 5 being very important)	Score 1 - poor, 5 very good					Comments
		1	2	3	4	5	
<b>Files and records</b>							
All applications are registered in electronic database	5					5	
Hard copy and electronic files are produced	5					5	
Inspection notes are recorded on hard files	5					5	
Inspection notes are recorded on electronic files	5	1					Time does not allow this to be done
Permits, plans and letters are kept on hard files	5					5	Time does not allow this to be done
Permits, plans and letters are scanned on to electronic files	4	1					Time does not allow this to be done
Old files are reasonably accessible	3				4		
<b>Education program</b>							
Owners of new systems are met on-site post installation to explain how systems work and how they should be maintained	5			3			This sometimes occurs
Education kit provided to all owners on how systems work and should be maintained. Kit should be specific to type of system	5	1					Not undertaken
Regular forums/information nights are held with local contractors	4	1					Not undertaken
<b>Monitoring and maintenance</b>							
<i>Treatment plants</i>							
Council has a register of all plants – location, type when installed	5			3			This information can be collected from database but no separate register has been produced
Quarterly maintenance reports are being carried out and reports are provided to Council	5		2				Not all systems are being inspected
Water sampling is being carried out and reports are being provided to Council	5	1					No samples have been submitted
Council is recording inspections and sample results	5	1					Not being undertaken
Council is identifying systems where inspections and sampling are not being performed and following up with letter to owners/installers	5				4		This has been undertaken with limited success
Council is reading reports and sample results and taking action where necessary	5					5	
<i>Other systems</i>							
Council has a routine monitoring system in place	5	1					Not being undertaken
Sludge levels are being measured	3	1					Not being undertaken
Tanks are being regularly desludged							A small percentage of residents are desludging

Item	Importance (out of 5, 5 being very important)	Score 1 - poor, 5 very good					Comments
		1	2	3	4	5	
Owners are aware of the location of their tanks etc	5			3			A reasonable proportion of residents know where there systems are located
Septic tanks are accessible	5			3			A reasonable proportion of systems are readily accessible
<b>Defective/problem systems</b>							
Council encourages defects to be addressed when identified	5					5	
Systems discharging off-site have been identified. Any problems are being dealt with	5	1					Not undertaken
Systems near sensitive water courses have been identified and upgraded where necessary	5	1					Not undertaken
Contamination of water courses by wastewater is being monitored through water sampling program	5	1					No monitoring has taken place
<b>Mapping</b>							
Problematic blocks from a wastewater perspective are mapped	4	1					Not undertaken
<b>Database and reports</b>							
Database able to produce the following information: - Owners and addresses of systems - Types of systems - When installed - Number of systems by type - Number of systems by type and by townships	5			3			Information can be produced but it is time consuming
Annual report submitted to EPA	3	1					Not undertaken
<b>Relationships</b>							
Strong relationships have been developed with other organizations involved in wastewater management	5					5	
Good relationships with local contractors have been developed	5					5	

### 9.3 Major Issues

The major issues that emerge from the key findings are as follows:

- Does the legislation relating to wastewater need to be changed?
- Do the codes of practice, standards and EPA guidelines need revision?
- Does the land capability assessment process need a stricter regime?
- What is the best process for advising prospective purchasers of unsewered blocks about the status of the properties they are interested in buying?
- How should the negative findings of the audit be addressed?
- How can the concerns about treatment plants be addressed?
- How can the problems identified in each township be addressed?
- What education programs should be introduced?
- What are the merits of the Wannon Water's proposal for a regional waste water management program? Is there a better approach?

*Does the legislation relating to wastewater need to be changed?*

It is critical that the actions contained in the strategy plan can be legally enforced. The township audit conducted for this study identified that there are a number of properties that treat their WC effluent on-site but discharge their grey water off-site. This method of treatment and disposal is, in most cases, consistent with their original permit. The review of legislation conducted for this study indicates that Council does not have the legal power to require modifications to these systems unless the systems are causing a nuisance. Council can require faulty systems to be repaired or better maintained and can require systems that have been modified without permit to be upgraded. However, it cannot require systems which are operating in accordance with their original permit to be upgraded.

This situation is not unusual. For example, an owner of an old house that does not comply with building codes cannot be forced to upgrade the house unless it is being substantially renovated. The same applies to old plumbing and electrical work.

So, should Council be given special power or should they have to rely on the nuisance provisions. Are the nuisance provisions too cumbersome and confrontational? Would the nuisance provisions allow Councils to address environmental concerns? Would it be more effective if there were specific

provision in the Environment Protection Act (EPA) relating to septic tanks systems rather than having to rely on the broad nuisance provisions in the Health Act? From an owners' perception is a notice under the EPA more acceptable than a notice under the Health Act? Is there a need for any change in the legislation? Spilt systems which discharge off-site do not comply with current standards but are they always a problem from a health or environment perspective. The discharge may not look aesthetic but it may not be dangerous. If Council thinks that the discharge is dangerous, it can fall back on the nuisance provisions but only for systems causing health problems.

Introducing retrospective legislation may not be palatable. May be the best solution is to ensure this problem does not arise in the future. It might be feasible to include a clause in the 'permit to use' that states that the permit is only valid for a fixed period, say 15 years, and after that Council can ask for a new system to be installed if required.

Another shortcoming in the current legislation is that Water Authorities in their sewer districts have more power than Council to remedy failing systems. Authorities can order owners of properties located in the authorities' sewer district to repair their septic tank systems. If they fail to do so, the Authorities can do the work and charge the owner. Councils can also order repairs but can only do the works and recover the cost through a successful nuisance action. Councils should have the same powers as Water Authorities to act on failing systems.

*Do the codes of practice, standards and EPA guidelines need revision?*

The land capability assessor raised a number of interesting points about providing flexibility in the code with respect to setback distances for properties where the soils drain vertically or where systems which produce effluent better than 20/30 are being installed. He also expressed a concern about the restrictions in the code which only allow setback distances to be halved if Council has a program in place to monitor the quality of the effluent. His contention was - why should a property owner be penalised for Council not having a system in place? These matters are valid and should be referred to the EPA for discussion.

*Does the land capability assessment process need a stricter regime?*

The following concerns were expressed during the study about land capability assessments:

- The level and scope of information provided in assessments varies.
- Some assessors do not have a sound practical understanding of wastewater treatment systems.

- Some assessors do not communicate effectively with EHOs.
- Assessors may not be providing independent and impartial advice. They are paid by the developer or homeowner and may feel pressure to provide favourable outcomes.
- Assessors are not aware of the developers' and homeowners' development plans when they conduct their assessments. As a consequence, sometimes their sample points and recommended effluent fields are poorly located.
- Assessors may recommend what type of system should be installed. Homeowners may get fixed on this system rather than considering other options.
- Assessments can be costly and sometimes give a result which is contrary to the view of the EHO. This places the Council and EHO in a difficult position. In some cases, the assessment may be positive but the EHO knows the site is not suitable. Refusing or modifying a planning permit or permit to install a septic tank system may be difficult and cause conflict. In other cases, the assessment may be negative but the EHO believes the site is suitable. It may be risky from an indemnity perspective for the EHO to issue the permit, even though he or she is satisfied the system will work.
- LCAs are sometimes undertaken when it is not considered necessary – e.g. in situations where the EHO, through knowledge and experience, is certain the system will not or will work.

These concerns could be addressed through the following actions:

- Introducing an accreditation system for assessors based on qualifications, knowledge and experience.
- Requiring assessors to become familiar with the wastewater management practices of the Councils in the areas where they work. This could be part of the accreditation processes – e.g. mandating that they spend a specified number of hours with the EHOs inspecting systems etc.
- Ensuring that the extent and scope of information provided in the assessment is consistent.
- Introducing a review system where the assessor's work is randomly scrutinized by their peers.
- Requiring assessors to be fully aware of the types of wastewater disposal systems that are available and their applications.
- Developing a protocol which specifies when assessments will be required and what contact the assessor should have with Council.

These are all reasonable actions which were supported by the private town planner consulted for this study. A consideration, however, is that they may make the LCA process expensive. Owners/builders/developers already pay considerable permit fees and increasing the cost of the LCA may not be well regarded.

*How can prospective purchasers be alerted to any septic tank issues relating to the lot/house they are interested in – e.g. development may be difficult on the lot, septic tank may need significant upgrade. Is it feasible to provide this advice, and what would be the mechanisms?*

Prospective purchasers need to know that the properties they are looking at are unsewered. Not knowing could be potentially costly and/or could impact on their plans for the property. The important reasons for knowing are as follows:

- In the case of vacant properties, some blocks may be difficult to develop (or even unable to be developed) because of wastewater disposal considerations. If able to be developed, the cost of the treatment system may be expensive and much higher than anticipated by the purchaser.
- The need to set aside land on the block for the septic tank systems may upset the purchaser's development vision for the block. They may have to rethink the location of the house, driveways, outdoor social areas, decks, swimming pool etc. They may even have to forgo some of these elements to accommodate the septic system. This same issue could apply to a purchaser of a developed block. They may wish to install a pool or a deck only to find out later that this is not possible or could be more costly to do because it will impact on the septic tank system.
- In the case of existing houses, the septic tank system may be failing and need upgrade. This could be costly. The septic tank systems may also be undersized for the new household and need substantial redesign.
- In the case of houses with treatment plants, there are conditions imposed on the use of the systems which could be costly and onerous (quarterly maintenance checks, annual effluent sampling etc).

The questions are what is the best way of informing purchasers and what should they be told? Obviously, the purchasers should be informed prior to signing the contract of sale so that they can defer the signing or sign subject to obtaining satisfactory wastewater advice.

What information does Council want to provide? Does it, like the water/sewerage certificate, want to supply a detailed plan of the system and/or an assessment of the condition of the system?

Council could not provide detailed plans without great expense. Council does not have plans of all systems and, where it has plans, some are not accurate. Council would have to inspect all properties and map the location of the septic systems – a costly exercise. Council does not know the condition of the septic tank systems. It could make a visual assessment but it would not be able to fully check without uncovering the system, taking effluent samples, measuring sludge levels etc. Also the check would indicate the condition and performance of the systems on the day of the inspection. Its condition a week later or 3 months later when the new owners move in may be different. This uncertainty makes it very risky for Council to provide information on the condition of the system. Therefore, it is recommended that Council take a more pragmatic approach and simply alert prospective purchasers prior to sale that the property is unsewered and recommend that they find out what the implications of this are. This places the responsibility on the purchaser.

What is the best way of informing prospective purchasers – in the information provided to purchasers or through an education program? The Sale of Land Act requires vendors to provide a range of information to prospective purchasers. This includes:

- Land information – zoning, restrictions on development etc.
- A building certificate.
- Information on the rates and charges affecting the property.
- A list of the services connected to the land. This will indicate whether the block is connected to the sewer.
- A warning to the effect that prospective purchasers should check with the appropriate authorities as to the availability of and the cost of providing and essential services not connected to the property.

A local legal firm were asked for their views on would be the best mechanism for prospective purchases. They suggested in the land information material provided by Council. The building certificate was suggested but was discounted because it is not provided for vacant blocks. A statement with the rates information may also be a good method as most purchasers will carefully read this area.

A more effective way of informing purchasers might be educate people involved in the sale process of the importance of providing or requesting information about the status of properties with respect wastewater disposal. A letter or information session with local solicitors, conveyancers and real estate agents could be beneficial.

It needs to be recognized that there will be workload implications for Council if purchasers become better informed and want to seek information about wastewater disposal implications. Vendors and purchasers will make enquiries to Council and may ask Council to locate and check the system. The Health Unit may then have to check their records for a plan of the systems and/or visit the properties. This will take time and could not be done within existing resources.

The above process should help to protect the purchaser. It could also have another positive outcome – it may help to identify failing systems and result in some being repaired or upgraded.

*How should the negative, general findings of the audit be addressed?*

The negative findings of the audit and strategies for addressing these findings are outlined in Table 5 on page 71. The recommended strategies can be grouped into the following categories:

- Education of owners about their responsibilities with respect to the operation and maintenance of their septic tanks systems.
- Education of owners about the proper management of their septic tanks systems.
- Actions relating to ensuring that systems are legally used.
- Actions relating to failing systems and the off-site discharge of grey water.
- Actions relating to treatment plants.

Table 5 – Audit findings and recommended actions

Finding	Comments/Recommended actions
Systems with broken lids, vents, distribution pits etc (including some Council properties)	Instruction in education kit to all owners of septic tanks systems advising them that their systems must be kept in a proper state of repair.
Systems that are being constantly driven over or parked on by vehicles	Instruction in education kit that this practice will damage septic tank system.
Systems that are virtually inaccessible and as a result have not been desludged for many years	Instruction in education kit requiring property owners to attempt identify the location of their septic tank systems including tank inspection openings, distribution pits, chlorination pit lids etc.
Systems which have not been desludged for many years	Instruction in education kit to property owners recommending that they desludge their tanks at least every five years; or Establish a centrally controlled program where properties are routinely desludged. The frequency would be determined by the design of the system and the size of the household.
Septic tank systems being modified without reference to Council. In some cases, the modifications have been successful; in others they have compounded the problems. In some cases, the modifications breach the code of practice with respect to setback distances from boundaries etc	Advise home owners and plumbers that septic tank systems are not to be altered without reference to Council. Enforcing this requirement if plumbers disregard instruction.
Houses, outbuildings, access roads etc being constructed without reference to Council and in a manner which has compromised the septic tank systems on the block	Advise homeowners, plumbers, builders, pool contractors etc of the need to consider the septic tank system when contemplating any building works on the property. Requiring building surveyors to submit a 'report and consent' request for any relevant building project (a project which might compromise the septic tank system) on an unsewered property.
WC effluent drains failing and water surfacing.	Advise homeowners how to identify failing systems. Recommend that they seek advice from Council about repairing system.
Small blocks discharging grey water off-site with little or no capacity to contain on-site.	No action may be needed if the discharge does not cause a health or environmental concerns. If it does, the following actions could be considered: <ul style="list-style-type: none"> <li>• Directing the kitchen water to the septic tank and attempting to reuse the grey water on-site</li> <li>• More effectively treating the grey water prior to discharge.</li> </ul>

*How can the problems identified in each township be addressed?*

The actions that Council should take to deal with issues identified in the audit of each township are listed below.

**Table 6 – Actions relating to townships**

Area	Actions
<b>Wangoom Rd</b>	<p>Letter to householders stressing the importance of maintaining their systems. Especially emphasise the importance of desludging the tanks and not building or driving over the effluent field</p> <p>Education kit to all householders on proper maintenance of systems. Include information on the types of trees to plant in effluent fields.</p> <p>Advice to householders with failing systems about what action to take.</p> <p>Advice to householders on what action to take when their systems exhibit signs of failure.</p> <p>Investigation of other grey water discharges and advice to owners on appropriate action – reuse, improved treatment, absorption on-site.</p> <p>Regular desludging of tanks and monitoring of systems in core township area.</p> <p>Conduct water sampling of tributary in winter when carrying water</p>
<b>Woodforde</b>	<p>Letter to householders stressing the importance of maintaining their systems. Especially emphasise the importance of desludging the tanks and not building or driving over the effluent field.</p> <p>Education kit to all householders on proper maintenance of systems. Include information on the types of trees to plant in effluent fields.</p> <p>Advice to householders on what action to take when their systems exhibit signs of failure.</p> <p>Conduct monitoring program in winter.</p> <p>Monitor treatment plants.</p> <p>Conduct water sampling of Merri River upstream and downstream of the houses.</p>
<b>Bushfield</b>	<p>Letter to householders stressing the importance of maintaining their systems. Especially emphasise the importance of desludging the tanks and not building or driving over the effluent field.</p> <p>Education kit to all householders on proper maintenance of systems. Include information on the types of trees to plant in effluent fields.</p> <p>Advice to householders on what action to take when their systems exhibit signs of failure.</p> <p>Conduct monitoring program in winter.</p>

*How can the concerns about treatment plants be addressed?*

It is clear that there are concerns about the operation of treatment plants. These concerns relate to the systems not being properly maintained and the quality of the effluent being discharged, particularly from systems that use surface irrigation.

The consultation with plant installers and maintenance contractors indicated that these concerns were justified. One local contractor recently conducted random check of the systems he has installed over the past five years. He found that a significant number were malfunctioning due to inadequate care by the owners – he described some of the systems as being ‘big septic tanks’, meaning that no aeration was occurring.

The condition of use for treatment plants require that they be checked on a quarterly basis by maintenance contractors and that their effluent be sampled on an annual basis. This does not appear to be happening after the first year of operation of most systems. If these conditions were enforced, the incidence of malfunctioning would greatly reduce.

It has been suggested that the requirement to check on a quarterly basis and sample on an annual basis is too onerous and too costly, particularly for subsurface irrigation systems. It was contended that owners may be more inclined to have their systems checked on a 6 monthly or annual basis.

The feasibility of introducing a Council controlled program should be investigated. This would ensure that systems are inspected, maintained and sampled. Also economies of sale may reduce the cost.

*What education programs should be introduced?*

Consideration should be given to introducing a comprehensive education campaign. The suggested elements of the campaign are as follows:

**Homeowners**

- An education kit on the proper use and maintenance of septic tank systems. This should include statements/information on:
  - The importance of knowing the location of the septic system and making sure it is accessible and what type of septic tank system has been installed and how it functions.
  - The importance of not driving over the septic tanks system and of considering the septic tank when planning any extension to the house or other project which might impact on the septic tank system.
  - The vegetation that is suitable to plant around the systems.
  - The importance of water conservation practices.

- The importance of regularly desludging septic tanks and emptying grease traps.
- The things that could go wrong with the system and how the homeowner should respond. The things that do go wrong when owners attempt to repair or upgrade systems without reference to experienced drainers/ plumbers and Council.
- A notice indicating that systems cannot be altered without Council's consent and advice that they always contact Council before undertaking any major works on their systems.
- A suggestion that homeowners self regulate or take positive action. For example, advising owners that it is not acceptable to discharge wastewater onto neighbouring properties (unless there is agreement) and asking them to seek Council advice as to what to do to rectify the problem. Another example, would be ask homeowners that discharge grey water off-site to consult with Council about possible methods of disposal etc.

### **Plumbers/Drainers, Waste Removal Contractors, Land Capability Assessors, Building Surveyors**

The Health Unit should conduct annual forums with these contractors to share information and get feedback on concerns etc. In between the forums, any matters of concern or interest should be communicated.

*Suggestion by Southwest Water (now Wannon Water) that it take post installation responsibility for the monitoring of septic tank systems. Is a program needed? Is Wannon Water the appropriate authority? Is it feasible? Is there another option? Would the money allocated to the program be better spent on other activities?*

In 2005, South West Water prepared an internal discussion paper outlining a regional management program for septic tanks. The paper was developed by the Authority because of its concerns about current wastewater management practices in the region. Its concerns were:

- Many septic tanks in the region are not being deslugged when needed. This is contributing to effluent drains failing and tanks overflowing or backing up. These failures and overflows can cause health and environmental damage.
- The variations in monitoring activities undertaken by Councils in the region. There should be a consistent approach.
- Septic tank management resources are duplicated.

- Wannon Water is not involved in the management of septic systems and therefore is unable to plan for sludge receiving facilities.
- Wannon Water is concerned about the unlawful disposal of sludge.

The main elements of South West Water's proposed management programs were as follows:

- A regional program which is by a Committee comprising representatives from South West Water and the Councils in the South West Water region. The committee would be known as the South West Domestic Wastewater Association.
- Professional staff would be engaged to operate the program. Initially, there would be up to 10 full time staff involved in the program. This would decrease to 6 after the data gathering process concluded.
- The following activities would be performed by the Association and its staff:
  - Creation of a central electronic data base of septic tank systems which contains specific information on each relevant property – property plan, property owner details, location of septic tanks in GIS system and details of the system.
  - Inspection of each relevant property to collect the information for the database and additional information about important site conditions, check the performance of the system and assess compliance with the permit to use.
  - Development of a wastewater management plan for each property – vacant or developed. These plans would specify permit conditions for new systems and the maintenance practices for existing systems. The plans would be binding and enforceable.
  - A desludging schedule would be introduced where tanks were routinely desludged every 3 years. The removal contractors would be engaged and managed by the Association.
  - Random inspections covering 20% of systems would be carried out every year to check the condition of systems and ensure compliance with individual wastewater management plans.
- The cost of the program – staff, removal contractors and other operational costs - would be levied on the property owners. The levy would include a 'once only' fee and an annual fee.

With respect to the status of the Association, the report does not indicate whether it would be an independent organisation or be part of South West Water. It is assumed that it would be part of South West Water.

#### Feasibility and merits of proposal

Prior to examining the feasibility and merits of the proposal, it needs to be noted that the discussion paper was not meant to be an exhaustive analysis of the merits of the program or contain a complete list of all the activities that would be undertaken by the Association. Instead it was putting forward some principles for consideration – a regional management model, a comprehensive database of systems, a centrally controlled desludging program, the program totally funded by property owners and the program managed by a representative committee but essentially run on day to day basis by the Water Authority. The questions that require discussion are as follows:

- What does the Authority want to achieve and is the proposed model the most appropriate way of achieving this aim?
- If yes, are there other activities that should be considered for inclusion in the program. If no, is there an alternative program?
- Is Wannon Water the most appropriate body to run the program?
- What resources are needed to properly operate the wastewater management program? How can the program be equitably funded?
- What other issues relating to training, knowledge base, staffing etc need to be addressed?

The notion of Water Authorities being responsible for post installation monitoring of septic tanks has merit. The core business of Authorities is water supply and wastewater management. The program will require significant resources and Water Authorities may have a better ability to raise funds than Councils. A critical issue though is whether it would be practical to have one body supervise installation and another supervise maintenance.

Wannon Water, the Water Authority that has been recently created out of an amalgamation South West Water, Portland Coast Water and South West Water, advises that it is not in an operational position at this time to take on the management of a regional program. However, the notion of a regional program overseen by a regional body should be explored. It is recommended that the proposal be discussed at the State level by the MAV, DSE, the peak body for Water Authorities and the Australian Institute of Environment Health (AIEH).

## **PART D – STRATEGY PLAN**

## Section Ten - Domestic Wastewater Management Plan

### 10.1 Introduction

This section outlines the goals and objectives of the wastewater management plan, describes Council role in wastewater management and outlines the actions that Council should undertake to achieve sustainable wastewater management in the City.

### 10.2 Goals

Council's goals with respect to domestic wastewater management are as follows:

- The minimisation of damage to the environment resulting from the treatment and disposal of domestic wastewater.
- The minimisation of public health risks associated with the treatment and disposal of domestic wastewater.
- The promotion of environmentally responsible development.
- The encouragement of the conservation and reuse of water.

### 10.3 Objectives

Council's specific objectives in relation to domestic wastewater management are to

- Ensure that all septic tank systems approved for installation in the municipality meet the relevant legislative requirements, standards and codes of practice.
- Ensure that all systems are installed in accordance with the approved plans, legislation and codes of practice.
- Ensure that all new and existing systems operate effectively and in a manner that does not cause nuisance conditions or environmental damage.
- Take appropriate action to rectify any problems which arise from defective systems.
- Seek community involvement and support in achieving these objectives.

## 10.4 Functions of Council

The specific functions of Council with respect to wastewater management are to:

- Enforce legislation, standards, plans and codes of practice.
- Coordinate the approval and inspection process for septic tank systems.
- Educate property owners in the proper operation and care of septic tank systems.
- Monitor the performance of septic tank systems and take action to rectify any problems.
- Coordinate regular forums for exchanging information amongst all persons involved in on-site wastewater management and servicing.

## 10.5 Cooperation with Other Agencies

Council recognises that other local and regional agencies have an important role to play in the protection and conservation of the environment (Wannon Water, Corangamite Catchment Authority, Western Coastal Board etc). Council will work closely with these bodies and keep them fully informed of any actions it is taking which may have relevance to their operations.

## 10.6 Action Plan

A detailed action plan is provided in Table 7. It lists the actions that Council should undertake in response to the findings of this study and gives priority to these actions. The priorities are described as short, medium and long. Short is defined as within the next 2 years; medium is 3-5 and long is 6+ years.

Council's Health Unit will have primary responsibility for the coordination and implementation of the recommendations. Council's planning, engineering infrastructure, building and GIS staff will assist them. Other external agencies such as Wannon Water, MAV and the EPA will be involved in the implementation of the recommendations.

Many of the actions are currently not performed by Council and will require additional resources. These include the monitoring activities and education program. Costs are provided in the table. The costs are indicative only and include staff time, production of materials, hire of contractors, distribution, water sampling etc. They include both recurrent and 'once only' costs. It is estimated

that the implementation of the recommendations will cost \$14000 'once only' and \$51000 per annum recurrent (or \$145 per septic system). Council could give consideration to introducing a special charge to fund these activities

The plan contains actions that should be undertaken at the City level and others that may be best undertaken at a regional level (with Moyne and Southern Grampians Shires). The actions are split into these categories in tables 8 and 9.

### **10.7 Evaluation and Review Process**

It is strongly recommended that the action plans be regularly reviewed and evaluated. This process should involve the following:

- Formal adoption of the action plan by Council.
- 6 monthly report to Council on the progress of implementation.
- Annual report to Council on the status of each recommendation.

Table 7 – Recommended Actions (note cost with asterisks are once only costs. The others are recurrent)

ACTION	PRIORITY	COUNCIL DEPT	SUPPORT AGENCIES	EST. COST \$
<b>Legislation/Codes of Practice</b>				
Discuss with the EPA the merits of giving Council the power to remedy septic tank systems that are operating in accord with their permits but do not satisfy current standards	Short	Health	EPA MAV	1000*
Discuss with the EPA the feasibility of introducing a legislative provision to allow Council to stipulate a minimum life span for septic tank systems in the permit to use	Short	Health	EPA MAV	
Discuss with the EPA the merits of giving Councils the same power as Water Authorities to repair septic tank systems and retrieve the costs from homeowners	Short	Health	EPA MAV	
Discuss with the EPA the concerns expressed in this study about the inflexibility of the code with respect to setback distances for properties with good vertical drainage and/or that are installing treatment systems which can achieve better than 20/30 effluent	Short	Health	EPA MAV Land assessors	
Recommend to the EPA that land capability assessors be accredited.	Medium	Health	EPA MAV Local land assessors	
Stipulate the information that should be included in assessments	Short	Health	EPA MAV Local land assessors	
<b>Permits and Records Systems</b>				
Reaffirm to Building Surveyors that a certificate of occupancy cannot be issued until a permit to use the septic tank is issued. Request Building Surveyors to advise their clients that their house should not be occupied or the septic tank system used until a permit to use is issued	Short	Health Building		200
Store plans and inspection notes on the electronic register of septic tank systems	Medium	Health IT		3000*

ACTION	PRIORITY	COUNCIL DEPT	SUPPORT AGENCIES	EST. COST \$
<b>Education Program</b>				
<p>Introduce a wastewater management community education program. The components of the program should be as follows:</p> <ul style="list-style-type: none"> <li>• An education kit for homeowners on the proper use and maintenance of septic tank systems. This should include statements/information on: <ul style="list-style-type: none"> <li>– The importance of knowing the location of the septic system and making sure it is accessible and what type of septic tank system has been installed and how it functions</li> <li>– The importance of not driving over the septic tanks system and of considering the septic tank when planning any extension to the house or other project which might impact on the septic tank system</li> <li>– The vegetation that is suitable to plant around septic tank systems</li> <li>– The importance of and advice on water conservation practices</li> <li>– The importance of regularly desludging septic tanks and emptying grease traps</li> <li>– The things that could typically go wrong with the system and how the homeowner should respond.</li> <li>– The things that do go wrong when owners attempt to repair or upgrade systems without reference to experienced drainers/ plumbers and Council</li> <li>– A notice indicating that systems cannot be altered without Council's consent and a suggestion that they always contact Council before undertaking any works other than basic repairs on their systems</li> <li>– Advice to owners of treatment plants that they must comply with the conditions of the permit to use with respect to maintenance tests and annual effluent tests</li> </ul> </li> </ul>	Short	Health Public Relations		4000* 500
<ul style="list-style-type: none"> <li>– A suggestion that homeowners self regulate or take positive action. For example, advising owners that it is not acceptable to discharge wastewater onto neighbouring properties and asking them to seek Council advice as to what to do to rectify the problem. Another example, would be ask homeowners that discharge grey water off-site to consult with Council about possible methods of disposal etc</li> </ul>				
<ul style="list-style-type: none"> <li>• Meeting owners on-site to explain the operation of and how to best maintain their systems</li> </ul>	Short	Health		3000
<p>Develop an education kit for new homeowners which provides the same information as above. Give consideration to meeting each owner to explain kit</p>	Short	Health Public relations		In above

ACTION	PRIORITY	COUNCIL DEPT	SUPPORT AGENCIES	EST. COST \$						
Conducting annual forums with plumbers, treatment plant installers, maintenance contractors, liquid waste removal contractors etc to discuss relevant waste management issues	Medium	Health	Plumbers Maintenance contractors Liquid waste removal contractors	1000						
Investigate the best mechanism of advising prospective purchasers of unsewered properties of the implications of the property not being seweraged – eg maintenance of septic tank system, potential restriction on development etc. Introduce the process	Short	Health Rates	Wannon Water Local solicitors Real estate agencies Conveyancing firms	2000						
<b>Monitoring and maintenance</b>										
<p>Introduce a monitoring program of septic tanks systems. This monitoring program should involve the following:</p> <ul style="list-style-type: none"> <li>• Regular and random measurement of septic tank sludge levels</li> <li>• Inspection of a sample of systems to ensure that tanks, pits, pumps etc are in good working order</li> <li>• Inspection of a sample of systems to ensure to identify that they are operating properly and in accordance with their permits to use.</li> <li>• Ensuring owners of treatment plants submit their quarterly maintenance reports and undertake annual tests of effluent quality. Carefully reviewing these reports and taking action where appropriate</li> <li>• Random testing of the sandfilter effluent. Carefully reviewing the test results and taking appropriate action</li> <li>• Sampling water in the Merri River upstream and downstream of houses in Woodford</li> </ul>	Short	Health	Wannon Water	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">1000</td></tr> <tr><td style="text-align: center;">3000</td></tr> <tr><td style="text-align: center;">3000</td></tr> <tr><td style="text-align: center;">800</td></tr> <tr><td style="text-align: center;">1000</td></tr> <tr><td style="text-align: center;">800</td></tr> </table>	1000	3000	3000	800	1000	800
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Adopt the recommendations as listed in table 5 of this report to address the specific problems relating to wastewater management identified by this study	Short/ medium/long	Health	Wannon Water	1000						
Give consideration to introducing a centrally run compulsory desludging program.	Short	Health Finance	Wannon Water	12600						
Explore the feasibility of introducing centrally run maintenance program for treatment plants		Health IT	Maintenance contractors	10000						

ACTION	PRIORITY	COUNCIL DEPT	SUPPORT AGENCIES	EST. COST \$
<b>Townships</b>				
Adopt the recommendations listed in table 6 of this report relating to each township	Short/ medium/long	Health		2000
Identify and map the vacant blocks in each township which could be unsuitable for development. Give consideration as to what action should be taken with respect to these blocks – advising the owners, requiring consolidation with adjacent vacant blocks prior to development, changing the zoning of the blocks.	Short	Health Planning GIS		3000 500
Produce a map for each township which shows the following information – geology, topography, soil type, watercourses, other important topographical and environmental features.  <b>Note: These mapping exercises should be undertaken concurrently and involve health planning, engineering and GIS staff. A local consultant involved in performing soil test should also be involved</b>	Short	Health Planning GIS	Local soil consultant	
Investigate the merits of advising owners of developed properties blocks that would be difficult to further develop from a wastewater perspective of the limitations of their properties	Medium	Health Planning GIS		500*
Meet with Wannon Water to discuss the feasibility of providing sewer to the Wangoom Rd community	Medium	Health Planning	Wannon Water	
<b>Responsibility/Funding</b>				
Investigate the feasibility of introducing a special charge to fund the activities recommended in this plan	Short	Health Rates Finance		2000*
Request the MAV, DSE and AIEH to investigate the merits of Water Authorities taking on the responsibility of post installation monitoring of septic tank systems.	Short	Health Rates Finance	MAV DSE Peak Body Water Authorities AIEH	2000*

Table 8 – Recommended Actions: Regional Action Plan (Actions in red will, if considered feasible, require significant resources)

ACTION
Discuss with the EPA the merits of giving Council the power to remedy septic tank systems that are operating in accord with their permits but do not satisfy current standards
Discuss with the EPA the feasibility of introducing a legislative provision to allow Council to stipulate a minimum life span for septic tank systems in the permit to use
Discuss with the EPA the merits of giving Councils the same power as Water Authorities to repair septic tank systems and retrieve the costs from homeowners
Discuss with the EPA the concerns expressed in this study about the inflexibility of the code with respect to setback distances for properties with good vertical drainage and/or that are installing treatment systems which can achieve better than 20/30 effluent
Recommend to the EPA that land capability assessors be accredited. Encourage the EPA to stipulate the information that should be included in assessments
Investigate the best mechanism of advising prospective purchasers of unsewered properties of the implications of the property not being seweraged – eg maintenance of septic tank system, potential restriction on development etc. Introduce the process
Request the MAV, DSE and AIEH to investigate the merits of Water Authorities taking on the responsibility of post installation monitoring of septic tank systems.
Explore the feasibility of introducing a centrally run compulsory desludging program.
Explore the feasibility of introducing centrally run maintenance program for treatment plants
<p>Introduce a regional wastewater management community education program. The components of the program should be as follows:</p> <ul style="list-style-type: none"> <li>- An education kit for homeowners on the proper use and maintenance of septic tank systems. This should include statements/information on: <ul style="list-style-type: none"> <li>♣ The importance of knowing the location of the septic system and making sure it is accessible and what type of septic tank system has been installed and how it functions</li> <li>♣ The importance of not driving over the septic tank system and of considering the septic tank when planning any extension to the house or other project which might impact on the septic tank system</li> <li>♣ The vegetation that is suitable to plant around septic tank systems</li> <li>♣ The importance of and advice on water conservation practices</li> <li>♣ The importance of regularly desludging septic tanks and emptying grease traps</li> <li>♣ The things that could typically go wrong with the system and how the homeowner should respond.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>♣ The things that do go wrong when owners attempt to repair or upgrade systems without reference to experienced drainers/ plumbers and Council</li> <li>♣ A notice indicating that systems cannot be altered without Council's consent and a suggestion that they always contact Council before undertaking any</li> </ul>

ACTION
<p>works other than basics repairs on their systems</p> <ul style="list-style-type: none"><li>♣ A suggestion that homeowners self regulate or take positive action. For example, advising owners that it is not acceptable to discharge wastewater onto neighbouring properties and asking them to seek Council advice as to what to do to rectify the problem. Another example, would be ask homeowners that discharge grey water off-site to consult with Council about possible methods of disposal etc</li><li>♣ Advice to owners of treatment plants that they must comply with the conditions of the permit to use with respect to quarterly maintenance tests and annual effluent tests</li></ul>
Develop an education kit for new homeowners which provides the same information as above. Give consideration to meeting each new owner to explain kit

Table 9 – Warrnambool City Action Plan (Actions in red will require significant resources)

ACTION
Reaffirm to Building Surveyors that a certificate of occupancy cannot be issued until a permit to use the septic tank is issued. Request Building Surveyors to advise their clients that their house should not be occupied or the septic tank system used until a permit to use is issued
Store plans and inspection notes on the electronic register of septic tank systems
Meeting owners on-site to explain the operation of and how to best maintain their systems
Conducting annual forums with plumbers, treatment plant installers, maintenance contractors, liquid waste removal contractors etc to discuss relevant waste management issues
Investigate the merits of advising owners of developed properties blocks that would be difficult to further develop from a wastewater perspective of the limitations of their properties
Ensure that Councils' planning processes – MSS, planning scheme, local structure plans, neighbourhood character studies – take into consideration the relevant findings of this plan.
Investigate the feasibility of introducing a special charge to fund the activities recommended in this plan (the cost of regional activities should also be included in this charge)
Meet with Wannon Water to discuss the feasibility of providing sewer to the Wangoom Rd community
<p data-bbox="213 1357 1023 1393">Introduce a monitoring program of septic tanks systems. This monitoring program should involve the following:</p> <ul data-bbox="213 1402 1374 1751" style="list-style-type: none"> <li data-bbox="213 1402 683 1438">• Regular and random measurement of septic tank sludge levels</li> <li data-bbox="213 1447 935 1482">• Inspection of a sample of systems to ensure that tanks, pits, pumps etc are in good working order</li> <li data-bbox="213 1491 1374 1572">• Inspection of a sample of systems to ensure to identify that they are operating properly and in accordance with their permits to use. Mapping of systems using GPS</li> <li data-bbox="213 1581 1329 1662">• Ensuring owners of treatment plants submit their quarterly maintenance reports and undertake annual tests of effluent quality. Carefully reviewing these reports and taking action where appropriate</li> <li data-bbox="213 1671 999 1706">• Random testing of the sandfilter effluent. Carefully reviewing the test results and taking appropriate action</li> <li data-bbox="213 1715 850 1751">• Sampling water in the Merri River upstream and downstream of houses in Woodford</li> </ul>
Adopt the recommendations as listed in table 5 of this report to address the specific problems relating to wastewater management identified by this study

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ACTION
Adopt the recommendations listed in table 6 of this report relating to each township
Identify and map the vacant blocks in each township which could be unsuitable for development. Give consideration as to what action should be taken with respect to these blocks – advising the owners, requiring consolidation with adjacent vacant blocks prior to development, changing the zoning of the blocks.
Produce a map for each township which shows the following information – geology, topography, soil type, watercourses, other important topographical and environmental features.
Attempt to capture the EHO's knowledge of each township re wastewater in map form

# APPENDICES

## Appendix A - Study Methodology

STEPS	PROCESS
<b>Task 1 - Document Current Waste Water Management Issues/Arrangements/Practices/Problems/Potential New Systems</b>	
Step 1 - Review of existing research/ plans/ roles	<ul style="list-style-type: none"> <li>— Review of all previous research, plans, files, investigations etc that have been undertaken by Council relating to wastewater management</li> <li>— Discussion with Council/water authorities/catchment authorities on what they consider to be the key issues/problems that should be addressed by the wastewater management strategy</li> <li>— Discussion with Council and authorities about their roles in wastewater management and the implementation of the wastewater management strategy</li> </ul>
Step 2 - Map existing systems	<ul style="list-style-type: none"> <li>— Review of existing septic tank permits and property records, files and plans</li> <li>— Review of information already collected by Council which may not yet have been included in the records</li> <li>— Discussion with Council officers about the accuracy of these records</li> <li>— Identification of properties for which records do not exist or accuracy of records are questionable</li> <li>— Discussion with Environmental Health Staff about the extent of the mapping process – does Council want all systems mapped or just those in priority townships and other nominated risk areas</li> <li>— Inspection of these properties to map wastewater systems (the condition of the system will also be noted at this time - See step 3)</li> <li>— Transfer of above information to appropriate property records system (e.g. GIS)</li> </ul>
Step 3 - Audit the condition of existing systems	<ul style="list-style-type: none"> <li>— Discussion with Environmental Health Staff to settle on the scope of and process for the proposed inspection program for wastewater systems e.g. how many and what mix of properties should be inspected in the townships listed in the brief; how should the process be introduced to householders; and what information should be collected and how</li> <li>— Send letter to properties advising of proposed inspection regime and asking them to locate septic tank systems if they can. Include a questionnaire with letter asking a few questions about monitoring and maintenance</li> <li>— Inspect the properties. Note the type of system, check consistency with plan, note any problems – odour, effluent surfacing, damaged pipes, system being built over, disturbance to effluent field, illegal discharge off-site, problem with discharge etc</li> </ul>
Step 4 - Analyse records/inspections	<ul style="list-style-type: none"> <li>— Analysis of audit to provide breakdown of systems by age, location, type of building, type of system, property size, condition, type of problems, monitoring and maintenance undertaken. This analysis will be both written and illustrative (on maps of townships)</li> </ul>

STEPS	PROCESS
Step 5 - Review Council's planning processes for unsewered areas	<ul style="list-style-type: none"> <li>— Discussions with Council' planning and environmental health staff about the processes used to consider wastewater management issues when approving development plans such as local structure plans, outline development plans, rezoning, new subdivisions, permits for construction of buildings, permits for renovation/extension of buildings etc</li> <li>— Review of the information/material provided to developers/owners relating to wastewater management in unsewered areas</li> <li>— Discussion with Council staff, developers/property owners, key Government and Statutory Authorities to review the above processes and information and identify any concerns/problems from their perspectives</li> </ul>
Step 6 - Review of Council's application, permit and inspection processes for wastewater systems	<ul style="list-style-type: none"> <li>— Discussion with Council's Environmental Health Staff to map the approval process from the initial contact through to final approval</li> <li>— Discussion with Council Environmental Health Staff, property owners, plumbers/drainers and key Government and Statutory Authorities to review the process and identify any concerns/problems from their perspectives</li> </ul>
Step 7 - Review monitoring/maintenance processes	<ul style="list-style-type: none"> <li>— Discussion with Council's Environmental Health staff about the instructions (verbal or written) given to owners/tenants at completion of installation re how to monitor and maintain their systems</li> <li>— Review of any monitoring processes undertaken by Council</li> <li>— Review of monitoring and maintenance activities undertaken by householders (this will undertaken through a survey of sample of householders and though discussions during inspection of systems)</li> </ul>
Step 8 - Identify potential new systems	<ul style="list-style-type: none"> <li>— Listing of the properties which are yet undeveloped but where applications for development have been approved and the type of wastewater management system has been identified</li> <li>— Listing of the properties where development has been refused or deferred due to wastewater management considerations</li> <li>— Listing of other vacant properties in approved subdivisions. Review their planning/ development status with respect to wastewater disposal (e.g. can they be developed, what system would be required)</li> <li>— Review of other potential development areas where approval for development has not yet occurred. Identify Council's position on the future development of these areas from a wastewater disposal perspective</li> </ul>

STEPS	PROCESS
<b>Task 2 - Conduct a detailed assessment of risk/problem areas and identify potential solutions</b>	
Step 1 - Identify minor/isolated problems with systems	<ul style="list-style-type: none"> <li>— Using the information obtained from Task 1, list the areas and properties where minor problems are occurring (minor is defined as defects/problems with the wastewater management systems that are not creating an environmental or health risk but pose a risk to the proper functioning of the system and should be rectified)</li> <li>— Discussion with Council staff about how these problems should be addressed</li> </ul>
Step 2 - Identify/investigate significant problem areas	<ul style="list-style-type: none"> <li>— Review of the information collected in Step 1 and the preliminary risk assessment already undertaken by Council</li> <li>— Discussion with Council staff and authorities about the information and assessments and determination of the townships/areas which are to be the subject of more detailed investigation</li> <li>— Discussion with Council and authorities about the current status of these investigation areas with respect to sewer (i.e. have any investigations been undertaken before, have any schemes been considered etc)</li> <li>— Conduct of the following actions with respect to the investigation areas:               <ul style="list-style-type: none"> <li>➤ Collate information about condition of systems (from task 1)</li> <li>➤ Identify health/environment risks in problem areas – failing systems, water ponding in street drains and on roads, water discharging into waterway or neighbouring properties, odour problems etc</li> <li>➤ Collect other relevant information about areas – land capability, geology, climate, groundwater etc</li> </ul> </li> </ul>
Step 3 - Identify potential solutions for investigation areas	<ul style="list-style-type: none"> <li>— Discussion of findings of Step 2 with Council and authorities</li> <li>— Identification of potential solutions including costs and agreement on a preferred course of action</li> <li>— Development of detailed reports for the priority townships which draw together all the information collected during this task</li> </ul>

STEPS	PROCESS
<b>Task 3 – Development of Wastewater Management Strategy for each Municipality</b>	
Step 1 – Development of Draft Strategy Plan	<ul style="list-style-type: none"> <li>— Compilation of a summary of the findings/outcomes of the previous steps</li> <li>— Developments of a wastewater management strategy plan. Plan to include:               <ul style="list-style-type: none"> <li>➤ Goals and objectives of Council</li> <li>➤ Role of Council</li> <li>➤ Roles of other key authorities</li> <li>➤ Action plans (could cover the following area – will include timelines and costs)                   <ul style="list-style-type: none"> <li>◆ Database and mapping of systems</li> <li>◆ Planning and approval processes</li> <li>◆ Monitoring processes</li> <li>◆ Education of owners/tenants</li> <li>◆ Recommended actions for isolated problems</li> <li>◆ Detailed strategies for investigation (inc funding sources, responsible authorities etc)</li> </ul> </li> <li>➤ Resources required to implement strategy</li> <li>➤ Recommended funding approach</li> <li>➤ Implementation schedule</li> <li>➤ Monitoring and evaluation</li> </ul> </li> </ul>
Step 2 – Review of Draft Plan and production of final strategy	<ul style="list-style-type: none"> <li>— Review of strategy by Councils and authorities. More detailed discussion on action plans, funding sources, implementation and monitoring and evaluation. Completion of plan</li> </ul>