Greater Shepparton City Council

Domestic Wastewater Management Plan

February 2008

The Domestic Wastewater Management Plan was adopted by the Greater Shepparton City Council at an ordinary meeting on the 1st April 2008

This Domestic Wastewater Management Plan was prepared on behalf of the Greater Shepparton City Council by the Infocus Management Group Pty Ltd with the assistance of WDMS Pty Ltd.

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Introduction

The City of Greater Shepparton has participated in a regional approach to domestic wastewater management which has been facilitated by the Australian Institute of Environmental Health North East Regional Group. This approach consisted of two stages. Stage 1 was concerned with the development and implementation of common approaches to domestic wastewater practices across the Region. This has resulted in the development of a regional policy context paper and the development of a set of common operating policies and procedures addressing domestic wastewater, specifically permitting, compliance monitoring, and information management activities. These initiatives now form part of the management action plan of council.

Stage 2 of the Regional Project is the development of the local component for participating councils which, together with the material developed from Stage 1, form Council's Domestic Wastewater Management Plan. This Stage 2 document describes the circumstances surrounding the management of domestic wastewater priorities within the City and contains a management action plan which addresses the identified domestic wastewater risks and priorities of unsewered towns in the municipality. The Paper outlines Council's policy context, a preliminary profile of septic tank systems and related issues, an analysis of domestic wastewater threats based on this information, and management strategies for these threats.

The Paper has been prepared also for the purposes of consultation within the community and stakeholders in local domestic wastewater management.

There is an ongoing need to collect data and other information that will provide the evidence base needed for further decision making. For this and other reasons the precautionary principle provides a guideline for the development of domestic wastewater management strategies. The precautionary principle is based on the understanding that:

1. If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

2. Decision making should be guided by—
   (a) a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and
   (b) an assessment of the risk-weighted consequences of various options.

(Environment Protection Act 1970)

1.0 Background

The State Government, in its ***Our Water Our Future Action Plan***, introduced the Country Towns Water Supply and Sewerage Program that is targeting critical public health and environment risks. As part of this $42 million program, $3 million has been set aside to help councils to prepare domestic wastewater management plans. This funding is administered by the Municipal Association of Victoria.

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

A description of the legislative and policy context for domestic wastewater management is contained in the Part 1 Regional Context Paper developed in Stage 1 of the Project.

There are an estimated 6,640 septic tank systems in the municipality and it important that these systems are effectively managed by their owners. The discharge of domestic wastewater has the potential to negatively impact on the natural environment and amenity, on human health as domestic wastewater contains disease producing microorganisms and chemicals, and on the economic environment. The reasons for these impacts are that:

> 'It is the type, concentration and location of the discharge that determines the degree of impact on human health and the health of the environment. Sewage can also pollute soils that are used for agriculture. Other evidence has revealed that many private systems are not managed or maintained properly, suggesting that consistent enforcement and monitoring of installation, maintenance and adherence to regulations is required to reduce contamination.
>
> Most waterborne disease risks arise when wastewater contaminates drinking water; waters used for recreational purposes, or if there is direct human contact with effluent. Bacteria and viruses (and other micro-organisms) in the wastewater may cause a range of diseases including Gastroenteritis, Shigellosis, Giardiasis, Cryptosporidiosis and Hepatitis' (James C Smith & Associates 2002 cited in Infocus Management Group 2004).

The risks associated with domestic wastewater management can be categorised as:

- *Public health*

    - Drinking water supplies becoming contaminated with chemicals and bacteria from effluent as a result of poorly drained soils; small lot sizes; high usage; ageing systems; and lack of proper maintenance of septic tank systems

    - Recreational water - statistically significant risk of illness if people come into contact with contaminated water used for recreational purposes.

- *Environmental*

    - Septic tanks systems contribute high rates of nitrogen and phosphorous to water catchments due to surface runoff
    - Septic tanks systems create direct bacterial contamination of the environment with ten times the amount of E coli (a disease producing bacteria found in animal/human waste) found in catchments near residential areas compared to catchments without residential areas;
    - The highest levels of faecal coliforms were found in catchments serving septic tanks compared to other disposal systems

- *Economic*

    - Trying to alleviate years of environmental contamination is costly and involves overcoming a host of practical issues. Prevention is cheaper.
    - In the event of a contamination incident there is the cost of advising residents and visitors to the area of the risk, managing community anxiety, and the indirect costs associated with the perception that the area is unsafe.

- *Legal*

    - Council has statutory duties under the Environment Protection Act 1970 and Health Act 1958
    - Council has a duty to exercise its enforcement powers where it knows there is a breach of the legislation and there is a likelihood of injury.
    - Two court cases have determined that a failure to act will be a breach of the duty of care owed by the Council and it will be liable in negligence for any damages caused by the breach of the duty of care

2.0 The Purpose and Aims of the Greater Shepparton Domestic Wastewater Management Plan (DWMP)

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

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

The key objectives are to:

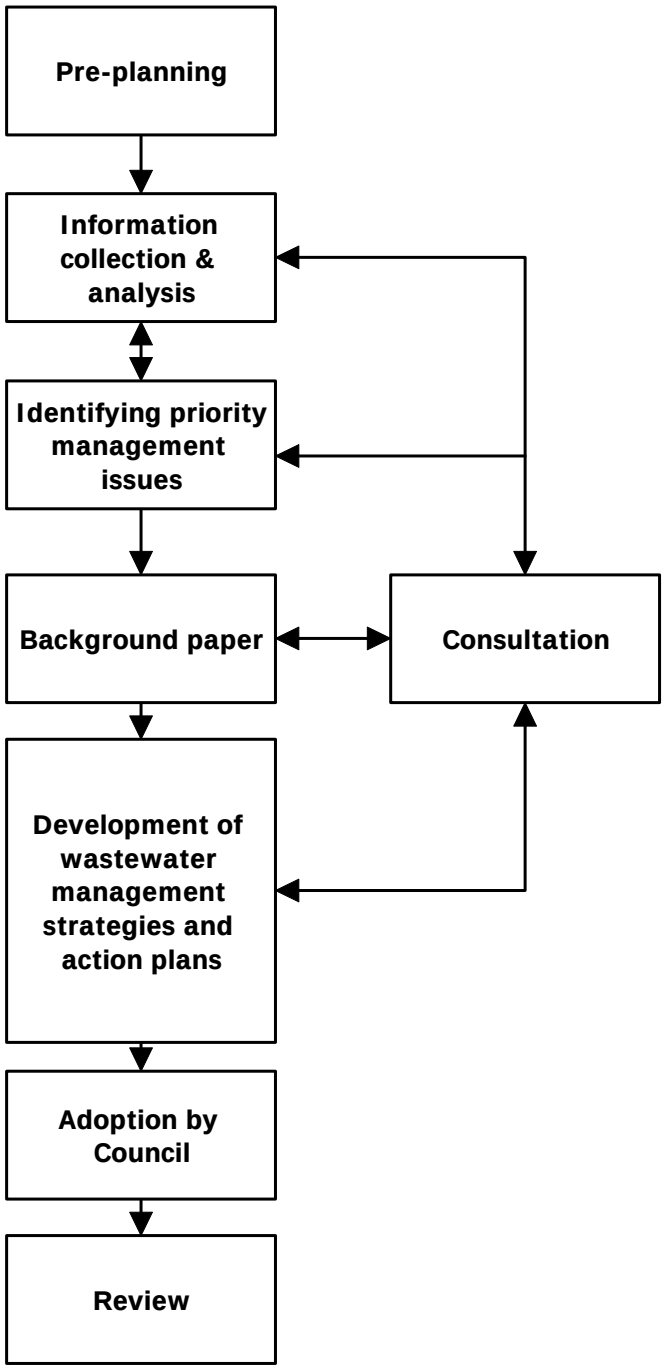
- develop Council's policy for the management of domestic wastewater;
- identify wastewater management priorities and develop short and long term strategies for the management of these priorities;
- provide a systematic approach for assessing the costs, impacts and barriers to managing domestic wastewater;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

The key outcomes expected from the plan are:

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

3.0 Development Process

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



4.0 Council Policy Context

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

4.1 Greater Shepparton City Council - 2030 Strategy Plan

The Greater Shepparton 2030 Strategy Plan is a visionary planning document that reflects Council's objectives and strategies for the development of municipality over the next 25-30 years.

The Plan examines the expected needs for settlement and housing, community life, the environment, economic development and infrastructure for continued growth in a sustainable and environmentally sensitive manner.

The strategies and objectives of the Plan are directly linked to the Municipal Strategic Statement of the Greater Shepparton Planning Scheme.

Attachment 1 ENVIRONMENT – Objectives & Strategies - Strategy 2.2 undertakes to:

> "Continue to ensure new developments are connected to reticulated services or have provision for adequate on-site disposal with no adverse impacts on nearby watercourses".

The Strategy Plan also undertakes to implement programs identified in the Wastewater Management Plan.

4.2 Greater Shepparton City Council - Council Plan 2006-2010

The Council Plan 2006-2010 articulates the City's strategic direction for the four years. The framework for this plan is the City's vision which is as follows:

Vision;

Greater Shepparton
As the Food Bowl of Australia,
a sustainable, innovative
and diverse community.

Greater Future

The Council Plan outlines 6 key strategic objectives adopted by Council:

- Settlement and Housing
- Community Life
- Environment
- Economic Development
- Infrastructure
- Council Organisation and Management

The strategic objectives of the Council Plan provide the policy framework for the Council's DWMP. The guiding principles under this objective include the engagement of all key interest groups in strong partnerships which include those organisations responsible for water and environment protection. Through these partnerships it will be ensured that projects and services are analysed and delivered with due regard to financial, environmental, social and cultural values. These objectives will be achieved by:

- Recognising, maximizing appropriate use of, and protect the value of, our river systems
- Engaging a range of partners in the pursuit of economic, environmental, social and cultural sustainability in all aspects of Council's services and projects
- Ensuring a proactive approach to environmental issues, encourage best practice land use and savings of energy and resources, and take a leadership role in the identification and implementation of sustainable development principles
- Advance community awareness of environmental issues
- Enhance and protect the natural environment through appropriate asset management strategies

Clearly the development of a DWMP will be an important implementation strategy for achieving Council's strategic objective in sustainability.

4.3 Greater Shepparton City Council - Asset Management Strategy

The Greater Shepparton City Council understands the importance of managing their assets efficiently and effectively to ensure the needs of the community are serviced. The objective of the Asset Management Strategy is to describe how council will meet its commitment to asset management as documented in its Council Plan. The Asset Management Strategy has many subsidiary asset plans, such as; Waste Management, Recreation Facilities, Drainage and Parks/open spaces, all of which are of relevance to the development of a Domestic Wastewater Management Plan.

4.4 Greater Shepparton City Council - Stormwater Management Plan

The aim of the stormwater management policy is to protect urban stormwater quality throughout the City. The Goulburn and Broken Rivers are the major environmental feature of the municipality. The greatest environmental threats to the region are the loss of the remaining areas of natural vegetation, salinity and the loss of agricultural land, rising groundwater and urban encroachment, drainage problems, declining water quality, and pest plants and animals. The issues of natural vegetation, urban encroachment and rising groundwater may be significant factors when considering domestic wastewater issues.

The Stormwater Management Plan was limited to the major towns in the municipality i.e. Shepparton, Mooroopna and Tatura, so threats relating to domestic wastewater would not have been identified within smaller town or areas of the municipality. The significance of these threats needs to be identified as part of the DWMP.

5.0 Domestic Wastewater Profile

The City of Greater Shepparton, situated in the heart of the Goulburn Valley, covers an area of 2,421.9 sq. kilometres, and is the fourth largest provincial centre in Victoria. The major urban centre of Shepparton is located at the confluence of the Goulburn and Broken Rivers. Greater Shepparton has a well developed economy, largely due to its strong agricultural and irrigation base.

The Goulburn Valley is often referred to as the “Food Bowl of Australia” as around 25% of the total value of Victoria’s agricultural production is generated in this area. Dairying and fruit growing are the major primary industries, with the viticulture and tomato industries also showing huge growth.

The Goulburn and Broken River corridors are key natural features in Greater Shepparton. Together with roadside areas, they provide the most significant stands of remnant vegetation with associated habitat values and also have obvious functions in flood management. Flooding is an inevitable feature of the area, which poses fundamental constraints on development. Also, because of the reliance on irrigation, effective water management practices play a key role in the region’s development and sustainability.

The City of Greater Shepparton has an estimated population of around 59,000, 77% of which is concentrated in the main urban centres of Shepparton and Mooroopna. The balance of the population resides in the townships of Tatura, Murchison, Dookie, Merrigum, Congupna, Toolamba, Katandra West and Tallygaroopna, and in the surrounding rural areas.

Population projections suggest an average annual growth rate of 1.1% in the short term, stabilising at 0.9% for the longer term (to 2030). A key facet of Greater Shepparton's population is its diverse multicultural composition, with 15.7% of residents born overseas. A high number of residents have origins in Italy, Turkey, Macedonia, Greece, Albania, The Netherlands, United Kingdom, Germany, India, New Zealand and The Philippines. More recently, there have been large numbers of people with Middle Eastern background settling in the region. The area also has the largest Aboriginal population outside metropolitan Melbourne with approximately 10% of the population being of indigenous origin (Source: City of Greater Shepparton Council Plan 2004-2008).

5.1 Numbers of Septic Tank Systems

The City of Greater Shepparton has a number of unsewered areas encompassing some eight major townships and several villages and settlements. There are approximately 6,640 septic tank systems within the municipality. Of these systems it is estimated that over 50% of installations are older than 20 years based on annual permit issues and available age profiles.

An outcome of the DWMP's Information Strategy is to undertake more detailed profiling of the septic tank systems that are operating within the municipality to aid future management decision making.

Based on the age of systems and permit history the vast majority of septic systems are conventional type systems with sub-surface disposal. The conventional septic tank systems installed after 1980 provided for all waste treatment while before this time systems provided for diversion of grey water. These installations included provision for approved off-site discharge.

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

The number of septic tank system permits being issued is expected to remain reasonably constant at around 100 a year which compares with the average of 103 a year over the last 6 and a half years. The following table shows the number of septic system permits issued from 2001 to 2007. A total of 615 permits have been issued during this six and a half year period. On average approximately 65% are for new installations.

Table 1 Septic Tank System Permits Issued

YEAR	TOTAL
2007 (to June 30)	42
2006	107
2005	104
2004	121
2003	87
2002	109
2001	87
TOTAL	657
2001/2007 Average	101
2007 Projected	100
2004/2006 Average	94

5.2 Distribution of Septic Tank Systems

The Council has undertaken assessment of the areas within the municipality where septic tanks are established. These include a number of areas in or adjacent to sewered townships.

Table 2 below details the distribution of septic systems by Drainage Catchment within the municipality.

Table 2 Location of Septic Tanks

Locality	Septic Tanks	Group Total	Drainage Catchment
Coomboona	56		Coomboona
Mooroopna North	62		Ardmona
St Germains	40		Rodney
Undera	219	377	Rodney / Coomboona
Gillieston	23		Rodney
Lancaster	36		Wyuna
Mooroopna North West	35	94	Rodney
Byrneside	78		Mosquito / Rodney
Cooma	43		Mosquito
Kyabram	44		Mosquito
Kyabram East	0		Mosquito
Kyabram South	34		Mosquito
Merrigum	325	524	Mosquito
Ardmona	199		Ardmona
Mooroopna	167	366	Ardmona
Girgarre East	60		Deakin
Harston	91		Deakin
Stanhope South	4		Deakin
Waranga	6	161	Deakin
Tatura	387		Mosquito
Tatura East	50	437	Mosquito
Toolamba	300		Mosquito / Ardmona
Toolamba West	51	351	Mosquito
Dhurringle	100		Mosquito
Moorilim	22		Toolamba
Murchison	198		Mosquito / Toolamba
Murchison East	82		Toolamba
Murchison North	80	482	Toolamba
Bunbartha	125		Kaarimba / Tallygaroopna
Tallygaroopna	257		Tallygaroopna
Zeerust	65	447	Tallygaroopna
Katandra	71		Invergordon
Katandra West	190		Invergordon
Marionvale	48		Invergordon / Tallygaroopna
Marungi	17	326	Invergordon / Tallygaroopna
Congupna	225		Tallygaroopna
Grahamvale	271		Shepparton
Lemnos	119		Shepparton
Shepparton North	76	691	Shepparton

Orrvale	175		Shepparton
Shepparton East	394	569	Shepparton
Cosgrove	47		Tallygaroopna
Cosgrove South	43		Tallygaroopna
Pine Lodge	147	237	Tallygaroopna
Boxwood	10		Tallygaroopna
Dookie	222		Tallygaroopna
Major Plains	14		Tallygaroopna
Mt Major	20		Tallygaroopna
Nalinga	18		Tallygaroopna
Stewarton	18	302	Tallygaroopna
Caniambo	77		Sheep Pen Creek
Gowangardie	17		Sheep Pen Creek
Karramomus	44		Seven Creeks / Honey Suckle Creek
Kialla East	82		Kialla
Tamleugh North	20		Honey Suckle Creek
Violet Town	5	245	Honey Suckle Creek
Arcadia	112		Kialla
Kialla West	147	259	Kialla
Kialla	577	577	Kialla
Shepparton	195	195	Shepparton
Total		**6,640**	

5.3 Priority Localities

The Council identified some 25 priority areas that may require a reticulated sewer service or extensions to existing reticulated sewer that service adjacent or nearby areas. Table 3 below provides details of the service opportunity.

Table 3 Numbers of septic tank systems by locality

	Name of Town	Number of Properties	Population Est. Only
1	Dookie	179	270
2	Katandra West	150	280
3	Shepparton East	87	210
4	Tallygaroopna	111	330
5	Toolamba	116	260
6	Kialla Central	65	150
7	Robert Court/ Mildred Court	19	45
8	Kialla West	93	210
9	Congupna	56	130
10	Old Toolamba	72	120
11	Murchison East	96	110
12	Arcadia	23	45
13	Undera	41	70
14	Dobsons Estate	144	330
15	Arcadia Downs	104	250
16	Matilda Drive	45	110
17	Tatura – south, west & east fringe estates (3 areas)	Area 1 – 31 Area 2 – 115 Area 3 – 63	55 160 90
18	Orrvale – Davies Drv	21	50
19	Medland Estate	44	85
20	Orrvale – Mason Crt, Mammone & Konig Crt	44	100
21	Orrvale – Reynolds Crt/ Sunshine Drive	27	55
22	Murchison – Yarramundi Crt	27	46
23	Old Katandra	14	20
24	Bunbartha	61	20

Table 4 below contains the top five priority towns that have been identified by the municipality as part of the Country Towns Water Supply and Sewerage Program:
The criteria used to determine priority is detailed in Table 7.

Table 4 Priority towns

Township	No. of septic tanks
Dookie	131
Katandra West	100
Shepparton East	80
Tallygaroopna	112
Toolamba	104
Total	527

Note: The figures for the towns above are lower than those in Table 3 as they do not include the surrounding rural properties.

Table 5 below provides information pertaining to the features associated with the wastewater management with these priority towns.

Table 5 Priority Town Wastewater Features

Priority	Town	population estimate	No. of Properties	Allotments < 1,000m^2	Allotments > 1,000m^2	No. of Houses	Age of Septic Tanks	% septics built after 1980	estimate % not contained on site	sample surveyed	annual rainfall (mm)
1	Dookie	270	150	72	78	108	1950's - present	5 - 10 %	50%	18	551
2	Katandra West	280	118	52	66	83	1950's - present	20%	50%	15	500Est
3	Shepparton East	210	85	38	47	70	1950's - present	25%	50%	9	563
4	Tallygaroopna	310	118	50	68	97	1950's - present	20%	50%	12	475Est
5	Toolamba	260	114	14	100	96	1970's - present	70%	20%	12	493

The following provides detailed descriptions of the wastewater circumstances in each of the identified priority towns.

Dookie

Dookie's population is estimated at 270, there are 150 properties in the township area, with 108 Houses and 21 other buildings, leaving 21 vacant properties, including 1 sub-divisional land (multi-lot). The average annual rainfall for Dookie is 551mm.

Council surveyed 18 houses and found that 50% (9) of the properties lot sizes were 2,000m^2 or less and all were serviced by some form of standard septic tank system. Over 80% (15) of properties surveyed were occupied by 2 persons or less. The majority of systems were over 15 years old and all properties were supplied with reticulated water, with 60% (11) also utilising a rainwater tank.

In determining sludge levels occupiers were asked when their septic tank had last been desludged and when possible the tank(s) were accessed to determine the sludge depth. Almost 40% (7) of properties had not had their septic tanks desludged since prior to 1997, this indicates that they probably can not recall the last time the tank was desludged and in these circumstances sludge levels were found to be over 40%.

67% (12) of the properties surveyed had only 1 small septic tank (1800L) servicing toilet waste only, of these 44% (5) of properties greywater disposal was connected directly to the street drain. The remaining had either absorption trench disposal (22%) (3) for greywater or pumped to polyline irrigation (22%) (3).

Katandra West

Katandra West's population is estimated at 280, there are 118 properties in the township area, with 83 Houses and 17 other buildings, leaving 18 vacant properties, including 2 sub-divisional land (multi-lot). The average annual rainfall for Katandra West is 449mm.

Council surveyed 15 houses and found that 86% (13) of the properties lot sizes were 2,000m^2 or less. Over 66% (10) of properties surveyed were occupied by 2 persons or less. The majority of systems were over 20 years old and all properties were supplied with reticulated water, with 33% (5) also utilising a rainwater tank.

In determining sludge levels occupiers were asked when their septic tank had last been desludged and when possible the tank(s) were accessed to determine the sludge depth. Almost 26% (4) of properties had not had their septic tanks desludged since prior to 1997, this indicates that they probably can not recall the last time the tank was desludged and in these circumstances sludge levels were found to be over 40%.

67% (10) of the properties surveyed had only 1 small septic tank (1800L) servicing toilet waste only and at all these properties greywater disposal was connected directly to the street drain. The remaining systems surveyed were 2 (13%) wastewater treatment plants and 3 (20%) all waste systems, all contained on site.

Shepparton East

Shepparton East's population is estimated at 210, there are 85 properties in the township area, with 70 Houses and 10 other buildings, leaving 5 vacant properties, including 2 sub-divisional land (multi-lot). The average annual rainfall for Shepparton East is 563mm.

Council surveyed 9 houses and found that 55% (5) of the properties lot sizes were 2,000m^2 or less and all were serviced by some form of standard septic tank system. Over 77% (7) of properties surveyed were occupied by 3 persons or less. The majority of systems were over 15 years old and all properties were supplied with reticulated water, with 44% (4) also utilising a rainwater tank.

In determining sludge levels occupiers were asked when their septic tank had last been desludged and when possible the tank(s) were accessed to determine the sludge depth. The majority (89%) (8) of properties septic tanks had been desludged since 2001, this indicates that either the owners have good knowledge of the requirements for desludge frequency or in some cases there may have been a need due to back flooding of the septic tank or pooling of effluent.

55% (5) of the properties surveyed had only 1 small septic tank (1800L) servicing toilet waste only, of these 22% (2) of properties greywater disposal was connected directly to the street drain. The remaining had either absorption trench disposal (11%) (1) for greywater or pumped to polyline irrigation (22%) (2). The remaining systems (44%) (4) were all waste septic tanks.

Tallygaroopna

Tallygaroopna's population is estimated at 310, there are 117 properties in the township area, with 97 Houses and 15 other buildings, leaving 5 vacant properties. The average annual rainfall for Tallygaroopna is between 400-500mm.

Council surveyed 12 houses and found that 91% (11) of the properties lot sizes were 2,000m^2 or less and all were serviced by some form of standard septic tank system. Over 75% (8) of properties surveyed were occupied by 4 persons or less. The majority of systems were over 20 years old and all properties were supplied with reticulated water, with 33% (4) also utilising a rainwater tank.

In determining sludge levels occupiers were asked when their septic tank had last been desludged and when possible the tank(s) were accessed to determine the sludge depth. The majority (83%) (10) of properties septic tanks had been desludged since 2001, this indicates that either the owners have good knowledge of the requirements for desludge frequency or in some cases there may have been a need due to back flooding of the septic tank or pooling of effluent.

45% (5) of the properties surveyed had only 1 small septic tank (1800L) servicing toilet waste only, of these 40% (2) of properties greywater disposal was connected directly to the street drain. The remaining had either absorption trench disposal (40%) (2) for greywater or pumped to polyline irrigation (20%) (1). The remaining systems were a mixture of all waste septic tanks 18% (2) (3,000L) and two separate 1,800L septic tanks (36%) (4) for each property.

Toolamba

Toolamba's population is estimated at 260, there are 114 properties in the township area, with 96 Houses and 8 other buildings, leaving 10 vacant properties, including 1 sub-divisional land (multi-lot). The average annual rainfall for Toolamba is 493mm.

Council surveyed 12 houses and found that 83% (10) of the properties lot sizes were 2,000m^2 or less and all were serviced by some form of standard septic tank system, including one aerated wastewater treatment plant. Over 75% (8) of properties surveyed were occupied by 3 persons or less. The majority of systems were over 20 years old and all properties were supplied with reticulated water, with 50% (6) also utilising a rainwater tank.

In determining sludge levels occupiers were asked when their septic tank had last been desludged and when possible the tank(s) were accessed to determine the sludge depth. Almost 50% (6) of properties had not had their septic tanks desludged since prior to 1997, this indicates that they probably can not recall the last time the tank was desludged and in these circumstances sludge levels were found to be over 40%.

25% (3) of the properties surveyed had only 1 small septic tank (1800L) servicing toilet waste only, all of these properties greywater disposal was connected directly to the street drain. The remaining had either absorption trench disposal (25%) (3) for greywater. The remaining systems were a mixture of all waste septic tanks 41% (5) (3,000L); two separate 1,800L septic tanks 25% (3) for each property and 1 wastewater treatment plant.

All towns are serviced by reticulated water supply (only Kialla West, Undera, Kialla Central, Old Toolamba, and Arcadia do not have a reticulated water supply). In the

absence of any plans for reticulated sewer there is an immediate need to continue monitoring existing septic systems as identified in the DWMP Action Plans to assess options for improvement in septic tank operations.

6.0 Community Consultation

An Advisory Committee was established to assist Council in the development of its Domestic Wastewater Management Plan. The Advisory Committee comprised of representatives from the community and relevant government stakeholders.

Section 223 of the Local Government Act 1989 sets out the processes to be followed by Council for exhibition of the Domestic Wastewater Management Plan and receipt of submissions.

This process will provide opportunity for the broader community to have input to the establishment of the Council's Domestic Wastewater Management Plan.

The proposed consultation timetable is outlined below.

- Tuesday 13th December 2007 Draft Domestic Wastewater Management Plan to Council
- Thursday 15th November 2007 Publish public notice calling for submissions
- Thursday 29th November 2007 Submissions Close
- Tuesday 4th December 2007 Council to consider submissions
- Thursday 6th December 2007 Submissions and Council comments referred to Advisory Committee
- Tuesday 5th February 2007 Submission of DWMP to Council for adoption

7.0 Values, Domestic Wastewater Threats, and Risk Assessment

7.1 Environmental values

Values reflect the perception of public health and the protection of beneficial uses of the receiving environment. Value categories include public health (infectious disease transmission and exposure to disease), environmental (surface water, land and groundwater quality), amenity (aesthetic values), economic (development potential, property value) location (density of systems and effluent), land capability (soil characteristics), indigenous values, and agricultural values.

The values for the unsewered population centres in the City of Greater Shepparton are seen to be good environmental amenity and aesthetics, high values relating to surface water quality, and health protection and are complementary to those values identified in the Stormwater Management Plan.

Wastewater poses a public health, environmental, legal and economic risk and the scientific literature establishes these risks including decisions made by the courts in relation to councils' responsibilities and their management of statutory duties.

Table 6 Receiving Environmental Values

Population Centres	Receiving Environmental Values
Dookie	• Health protection is highly valued – complaints have been received concerning amenity (odour and visual) of open street drains. There is a potential exposure to disease from contact with the contents of these drains, including the vast numbers of mosquito's breeding in these drains • Economic – Development potential cannot be realized and is constrained due to the lack of disposable waste infrastructure being present and allotment size. • High values relating to Surface Water quality • High values relating to Storm Water quality
Katandra West	• Health protection is highly valued – complaints have been received concerning amenity (odour and visual) of open street drains. There is a potential exposure to disease from contact with the contents of these drains. • Economic – Development potential cannot be realized and is constrained due to the lack of disposable waste infrastructure being present and allotment size. • High values relating to Surface Water quality • High values relating to Storm Water quality
Shepparton East	• Health protection is highly valued – complaints have been received concerning amenity (odour and visual) of open street drains. There is a potential exposure to disease from contact with the contents of these drains. • Economic – Development potential cannot be realized and is constrained due to the lack of disposable waste infrastructure being present and allotment size. • High values relating to Surface Water quality

	• High values relating to Storm Water quality
Tallygaroopna	• Health protection is highly valued – complaints have been received concerning amenity (odour and visual) of open street drains. There is a potential exposure to disease from contact with the contents of these drains. • Economic – Development potential cannot be realized and is constrained due to the lack of disposable waste infrastructure being present and allotment size. • High values relating to Surface Water quality • High values relating to Storm Water quality
Toolamba	• Health protection is highly valued – complaints have been received concerning amenity (odour and visual) of open street drains. There is a potential exposure to disease from contact with the contents of these drains. • Economic issues in relation to Flooding are of concern within the town of Toolamba • High values relating to Surface Water quality • High values relating to Storm Water quality

7.2 Domestic wastewater threats

The following table depicts the generic domestic wastewater threats which are associated with domestic wastewater. Each of these threats can be graded as Low, Medium, and High.

Table 7 Generic Domestic Wastewater Threats

Threat	Cause	Key Impacts
Failed systems with offsite discharge	• Damaged effluent disposal drains/trenches • Increased loading from extensions to dwellings • Design criteria not complied with • Faulty installation • New works & activities impacting on disposal envelope • Age • Septic tank full	• Nutrients • Pathogens • Odour • Visual amenity • Oxygen depleting material • Local land degradation (erosion) • Pollution of water courses
Treated off site effluent discharge	• Permitted system	• Pollution of water courses • Local visual amenity
Treated on site effluent systems	• Permitted system	• Local visual amenity • Pollution of groundwater
Re-use of wastewater	• Allowed re-use • Low water supply • Poor management by individual residents	• Pathogens • Odour
Untreated off site sullage discharge	Poorly maintained system: • sand filter not functioning • sand filter bypassed to stormwater • septic tank full	• Nutrients & pathogens • Odour • Visual amenity • Oxygen depleting material • Local land degradation • Pollution of water courses
Ineffective regulation	• Failure to comply with permit conditions • Ineffective data base • Non-connection to sewer • Unclear regulatory responsibilities	• Liability • Increased incidence of preventable pollution and environmental degradation • Increased risk to public health

The assessment of comparative wastewater threats is dependent upon three particular variables:

- the number and density of septic systems within the sub-catchment area;
- the proportion of effectively operating septic systems; and
- the proportion of the types of systems installed.

However, the currently available data on the above variables is incomplete and a quantification of the potential threats could not be undertaken. This lack of data points to the immediate need for the systematic collection, analysis and verification of domestic wastewater data. Despite this lack of data a preliminary estimate of threats in each of the priority towns was conducted (the number of threats were counted and rated high, moderate, or low). The EPA Septic Tank Code of Practice and LCA Guidelines, survey data and local knowledge were used to identify the following as the assessment criteria for potential threats:

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

The results of these estimations are depicted in Table 8 below (On the collection and analysis of the required point source data, a further risk assessment will be conducted for all population centres using the risk assessment tools of the MAV Model Plan).

Table 8 Preliminary assessment of potential domestic wastewater threats in sub-catchments

Towns/urban centres	Threats	Threat assessment	Threat priority (High, Medium, Low)
Dookie	☒ No. of systems/density ☑ Proximity to watercourses ☒ Located in water catchment ☑ Allotment size ☑ Type (on-site v offsite) of systems ☑ Age of systems ☑ Retic water available ☒ Slope ☒ Water quality (rec. env) ☑ Soil characteristics ☒ Flood prone ☒ Rainfall ☑ Poor maintenance **7 of 13 confirmed threats**	• 131 septic tank systems with estimated 50% of waste not contained on site • 48% of allotments are < 1000 m^2 • 85-90% of systems built before 1980 • 40% (approx) of tanks not desludged since before 1997 • 67% of systems had 1800 litre tank & 44% disposed of grey water directly to street drain	High
Katandra West	☒ No. of systems/density ☑ Proximity to watercourses ☒ Located in water catchment ☑ Allotment size ☑ Type (on-site v offsite) of systems ☑ Age of systems ☑ Retic water available ☒ Slope ☒ Water quality (rec. env) ☑ Soil characteristics ☒ Flood prone ☒ Rainfall ☑ Poor maintenance **7 of 13 confirmed threats**	• 100 septic tank systems with estimated 50% of waste not contained on site • 44% of allotments < 1000 m^2 • 80% of systems built before 1980 • 89% (approx) of tanks have been desludged recently • 67% of systems had 1800 litre tank & 67% disposed of grey water directly to street drain	High

Towns/urban centres	Threats	Threat assessment	Threat priority (High, Medium, Low)
Shepparton East	☒ No. of systems/density ☑ Proximity to watercourses ☒ Located in water catchment ☑ Allotment size ☑ Type (on-site v offsite) of systems ☒ Age of systems ☑ Retic water available ☒ Slope ☒ Water quality (rec. env) ☑ Soil characteristics ☒ Flood prone ☒ Rainfall ☑ Poor maintenance **6 of 13 confirmed threats**	• 110 septic tank systems with 50% of waste not being contained on-site • 45% of allotments < 1000 m^2 • 75% of systems built before 1980 • 26% (approx) of tanks not desludged since before 1997 • 55% of systems had 1800 litre tank & 22% disposed of grey water directly to street drain	Medium
Tallygaroopna	☒ No. of systems/density ☑ Proximity to watercourses ☒ Located in water catchment ☑ Allotment size ☑ Type (on-site v offsite) of systems ☒ Age of systems ☑ Retic water available ☒ Slope ☒ Water quality (rec. env) ☑ Soil characteristics ☒ Flood prone ☒ Rainfall ☑ Poor maintenance **6 of 13 confirmed threats**	• 310 septic tank systems with 50% of waste not being contained on-site • 42% of allotments < 1000 m^2 • 80% of systems built before 1980 • 83% of tanks desludged recently • 45% of systems had 1800 litre tank & 36% disposed of grey water directly to street drain	Medium

Toolamba	☒ No. of systems/density ☑ Proximity to watercourses ☒ Located in water catchment ☑ Allotment size ☑ Type (on-site v offsite) of systems ☒ Age of systems ☑ Retic water available ☒ Slope ☒ Water quality (rec. env) ☒ Soil characteristics ☒ Flood prone ☒ Rainfall ☑ Poor maintenance **5 of 13 confirmed threats**	• 260 septic tank systems with 20% of waste not being contained on-site • 12% of allotments < 1000 m^2 • 30% of systems built before 1980 • 50% of tanks not desludged since 1997 • 25% of systems had 1800 litre tank & 25% disposed of grey water directly to street drain	Medium

Summary

In conclusion for all properties surveyed there appears to be a trend in these small towns with small lot sizes for separate toilet and grey water disposal. For all properties surveyed a total of 47 properties had separate grey water disposal and 27 of these had grey water disposal directly to the street drain which subsequently poses risks to the environment as well as health risks to humans and animals that may inadvertently come in contact with the polluted water. Sample results for the drains sampled in 2005 indicate a level of contamination by grey water and possibly failing septic tank systems. This is indicative of the results of the frequency of desludging of the septic tanks, the average for all properties surveyed indicates 29% of septic tanks had not been desludged since prior to 1997, this highlights a lack of community/user knowledge of septic tank systems.

The current data supports the priority rating for each of these towns. Data on other towns will need to be collected and analysed to provide a municipality wide perspective and comparison. This is an action required in the draft action plans.

The following table extrapolates the figures that were collected as a result of the survey from each of the priority towns across the total number of serviced properties within those towns.

Table 9 Survey results extrapolated over total serviced properties in 5 priority towns

Township	Total developed properties	Lot sizes less than 2000M2	Reticulated water	Not desludged Since 1997	Greywater to street	1800 ltr septic tanks
Dookie	129	64	Y	52	38	86
Katandra West	100	86	Y	26	67	67
Shepparton East	80	44	Y	71	18	44
Tallygaroopna	112	102	Y	93	20	50
Toolamba	104	85	Y	52	26	26
Totals	**525**	**381**		**294**	**169**	**273**

8.0 Key findings

The Background Paper has identified the following key issues in domestic wastewater management within the City of Greater Shepparton

- The Council's septic tank profile in terms of numbers, location and types of septic tank systems is incomplete and does not enable adequate quantification of the threats.

- The performance of septic tank systems and compliance with permit conditions by owners across the municipality is unknown. There is evidence that septic tank systems are not being maintained and points to the need for improved community knowledge of the effective management of septic tank systems.

- The receiving environment particularly watercourses are being negatively impacted on by domestic effluent, largely due to septic system failure capable of producing high levels of contamination. Poorly managed and maintained septic systems have been identified as a priority issue within the Stormwater Management Plan.

- Goulburn Valley Water's current five year Water Plan makes no provision for backlog sewer programs.

- Septic tank installations are required to retain and treat all wastewater on-site however prior to the early 1980's septic tank systems were permitted to allow for the discharge of grey water off-site. There are no policies in practice for the management of either the septic systems that do not comply or the grey water from systems with approved off-site discharges.

- Council issues permits for installation of systems but has no organised compliance management services to ensure permit conditions are complied with by owners or information on the performance of these systems.

- At least two full time employees will be needed to implement this strategy – the costs of this employment to be recouped from property owners with septic tanks.

- The total actions recommended to be undertaken at a total cost of $70000 over three years not including the employment of persons included in the key finding above.

9.0 Management strategies and actions

This section outlines Council's approach to the management of domestic wastewater issues that have been identified through the development of the DWMP, the major strategies and the specific action planned to implement these strategies over the next three years.

9.1 Management approach

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

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

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

- ensure that strategic and statutory planning tools are consistent with the SEPP;
- improve the management of urban stormwater and domestic wastewater (waste from septic tanks);
- consider the capability of land, in unsewered areas, to contain wastes when making land use planning decisions and that such use is sustainable;
- assess compliance of septic tank performance with permit conditions; and
- develop a Domestic Wastewater Management Plan

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

- monitoring of system performance and general environmental monitoring (particularly in identified high risk areas);
- compliance audits of septic tank system permit conditions; and
- community information services relating to septic tank systems.

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

- the collection of appropriate data at the point source through an ongoing monitoring program, development of a domestic wastewater information management system, and analysis of this information
- review and development of operating policies and procedures

- the development of, and access to, a range of information by owners of septic tank systems and other stakeholders

As part of its approach to delivering improved domestic wastewater management, the Greater Shepparton City Council has agreed to participate as a member of the Local Government Domestic Wastewater Special Interest Group ("the LGDWSIG").

The LGDWSIG has made a commitment to continue the development and assessment of management approaches and standard operating policies that will improve domestic wastewater compliance management.

The LGDWSIG has initiated a Domestic Wastewater Compliance Management Project. A Project Management Committee has been established for the Project and the Project has received written support from a number of water authorities and catchment management authorities.

The Project will develop management strategies and practices relating to key domestic wastewater management areas of:

- Land use planning and wastewater management,
- Post-installation monitoring of septic systems, and
- Innovation in domestic wastewater management

9.2 Domestic Wastewater Management Priorities

The key findings identify a number of management actions that need to be implemented so as to improve the effectiveness of septic tank systems:

1. *Capacity development – information management*

   There is a need to develop an accurate and complete septic tank system profile of the municipality that is integrated with Council's Geographic Information System (GIS).

2. *Capacity development – policies and procedures*

   There is a need to develop policies to improve the management of domestic wastewater consistent with the legislation and Council's environmental and other policies. The continued growth of the municipality will result in issues:

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

- Review the requirements of the planning scheme.
- Develop inter-departmental protocols relating to building and town planning permits and the issuing of approvals for septic tank systems.

3. *Compliance auditing and monitoring of septic tank systems*

- As the permitting authority Council needs to develop activities to ensure compliance with conditions on permits and other requirements on applicants/owners after the system has been installed. This is particularly critical in identified high risk areas.
- This consideration will need to include the options available for resourcing these activities, and legislative constraints.
- These compliance activities need to be risk based.

4. *Community development and compliance*

Although owners of septic tank systems have a legal responsibility under the Environment Protection Act 1970 to comply with permit conditions, there is evidence that there is a need for ongoing education of owners.

5. *Environmental monitoring and protection*

Together with inspections of individual septic tank systems/installations, there is a need to investigate, with other agencies, the overall impact that systems have collectively on the receiving environment. Current information suggests that there is septic tank effluent infiltrating into water courses. Information derived from these investigations will assist in refining the preliminary risk/threat assessment that has been undertaken for the DWMP and in developing specific permit conditions for septic tank approvals.

6. *Review*

There is a need for a review of the DWMP management actions within 12 months as the development of a complete septic tank profile will need to be analysed together with any State government policy and legislative changes.

7. *Commitment to Local Government Domestic Wastewater Special Interest Group*

Continue as an active participant in accordance with the Regional Action Plan

9.3 Management Action Plans

Management Action Plan

Year 1	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
1. Strategy: ***Development of a septic tank maintenance and management information and education program.*** **Objectives :** • To reduce loading on septic tank systems and reach the designed age for system • To increase owners' awareness of the importance of managing septic tank systems • To improve compliance with permit conditions • To prevent alterations exceeding the design capacity of existing approved systems	1a) Develop a communication strategy • Consultation with internal staff (customer service, communications) • Develop information material using Smart Septics resource • Dissemination via dedicated website and hard copy materials	EH Team & LGDWSIG	Manager Sustainability & Environment	3/08	Completion of communication strategy
	1b) Evaluate strategy	EHO & LGDWSIG	Manager Sustainability & Environment	6/08	Completion of a community survey
	1c) Revise and continue implementation of strategy	EHO & LGDWSIG	Manager Sustainability & Environment	Commence 07/08 & 6 monthly reviews	Compliance Audits conducted

Management Action Plan

Year 1	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
2. Strategy: ***Development of a septic tank system monitoring program for council owned properties*** **Objectives:** • To ensure that council septic tank systems are operating effectively and meet permit and licensing requirements	2a) Identify all unsewered council properties	EHO & GV Water	EHO	3/08	Register established Septic System Condition Assessment conducted
	2b) Develop and implement a monitoring regime for sites not EPA licensed	Responsible Managers & consultant	Manager Sustainability & Environment	2/08	Risk based monitoring program in place
	2c) Review and revise monitoring program	Responsible Managers	Manager Sustainability & Environment	2/09 then annually	Septic system performance reviewed Monitoring program modified if required

Management Action Plan

Year 1	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
3.* Strategy:** ***Establish a funded permitting system for septic tank systems **Operational objectives:** • Develop a cost sustainable permitting system reflecting the costs of providing the service	3a) Establish full operating costs for the provision of permitting services	EH Team	Manager Sustainability & Environment	2/08	Define service to be provided and cost of service Permit fee structure agreed by management
	3b) Review current system of charging fees and benchmark against other councils	EHO, LGDWSIG & Consultant	Manager Sustainability & Environment	2/08	Production of comparative report for inclusion in (a) above
	3c) Advise Minister and EPA for the need to change current legislation with government set maximum fees	Council	Manager Sustainability & Environment	2/08	Council approval Request sent to Minister and EPA Legislation amended
	3d) Communicate to stakeholders, rate payers and service providers	EHO	Manager Sustainability & Environment	7/08	New fees & charges advertised in Council Newsletter

Management Action Plan

Year 1	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
4. **Strategy:** ***Review Domestic Wastewater Information Management System*** **Operational objectives:** • To develop a system matching the requirements of both current and future services in domestic wastewater management using the MAV information management model • Identification of properties retaining wastewater on-site or otherwise • Identification of trends in wastewater technology and its application, receiving environment impacts, servicing levels	4a) Review/Upgrade existing information management systems to store the additional data requirements as detailed in Table A (MAV Information Management Specification)	EH Team & IT	EHO	3/08	Needs Assessment Analysis completed Requirements identified
	4b) Modify the existing information management systems to meet the reporting needs identified in Table A	Septic Tank Management System (STEMS) Provider & IT	EHO	4/08	Installation of updated STEMS Software
	4c) Verify existing database of location of septic tank systems within the municipality and incorporate on Geographical information system (GIS)	EHO, GIS Officer & Consultant	EHO	6/08	STEMS database established as an overlay on GIS Confirmation by random sample
	4d) Develop a profile of all septic tank systems within the municipality	EH Team & Consultant	EHO	6/08	Random sample of properties conducted
	4e) Implement a system for collection and recording of permit compliance and audit information	EH Team & SIG	EHO	4/08 commence with treatment plants	Production of compliance reports

Management Action Plan

Year 1 - 2	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
5.* Strategy:** ***Development and review of operational policies and procedures **Objectives:** • To develop a range of operating and other policies relating to domestic wastewater and its management (based on draft regional policies and procedures) • To manage Council's exposure and statutory duties in wastewater management • To improve the effectiveness of service provision	5a) Establish a scope of policies and procedures relating to the following areas: • Permitting (new and alteration) policies and procedures (Assessment criteria, LCAs, fees, permit conditions, site inspections) • Joint operating procedures with internal service units (planning, building) on planning permits (sub-divisions, infill development, grey water reuse) • Joint operating procedures with external agencies on information exchange (sewer availability, connections, priority areas for sewerage) • Exploration of common protocols and benchmarks with neighbouring councils	EH Team & LGDWSIG	Manager Sustainability & Environment	6/08	Action Plan prepared Data sharing protocols agreed to with other agencies
	5b) Draft policies and procedures and consult with internal and external stakeholders	EHO & Consultant	Manager Sustainability & Environment	5/08	Agreement to draft by stakeholders
	5c) Develop a procedure and policy manual based on regional model	EHO & Consultant	Manager Sustainability & Environment	6/08	Septic Tank Policy and Procedures Manual approved

Management Action Plan

Year 1 - 2	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
5.* Strategy (Continued):** ***Development and review of operational policies and procedures	5d) Develop a grey-water re-use policy, in consultation with stakeholders, to be adopted by council with DWMP	EH Team & LGDWSIG	Manager Sustainability & Environment	6/08	Grey-water re-use policy approved by Council
	5e) Review and amend local planning controls, in consultation with stakeholders to address domestic management	Manager Planning, EHO & LGDWSIG	Manager Sustainability & Environment	9/08	Planning Scheme amended
	5f) Promote policies to the community and service providers (jointly with communication strategy)	EH Team	EHO	7/08 ongoing	Awareness survey conducted

Management Action Plan

Year 1 - 2	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
6.* Strategy:** ***Development of a compliance auditing regime **Operational objectives:** • To manage council's statutory duty in relation to enforcement activities • To minimise the impacts from domestic wastewater on the environment and protect public health • To comply with legislative expectations of government	6a) Assess current legislative options/tools, identify gaps and lobby government for improved enforcement powers	LGDWSIG	Manager Sustainability & Environment	2/08	Requirements identified and Report prepared
	6b) Develop compliance auditing policies and procedures	EH Team & LGDWSIG	EHO	2/08	Policies and Procedures Manual updated with approved auditing requirements
	6c) Implement a program for auditing owner/occupier compliance with permit conditions	EH Team	EHO	7/09	Compliance Audit Program implemented
	6d) Implement a program for auditing septic tank system performance	EH Team & LGDWSIG	EHO	7/09	Performance Audit Program implemented
	6e) Implement a system of periodic reporting of auditing results to stakeholders	EH Team	EHO	7/09	Audit Reporting Program implemented
	6f) Investigate the implementation of a charging system to recover the cost of auditing	LGDWSIG & Consultant	Manager Sustainability & Environment	2/08	Charging regime approved by management

Management Action Plan

Year 1 - 3	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
7. Strategy: **Review of Action Plan** **Objectives:** • To report progress to management, stakeholders and community • To ensure any changes in government policy and community expectations are assessed and reflected in the Action Plan • To update Action Plan	7a) Identify any changes to government policies through discussion with stakeholders	EHO & LGDWSIG	Manager Sustainability & Environment	7/08 and then ongoing	Council policies reviewed and amended as needed
	7b) Assess any feedback received from the community through implementation	EH Team & Stakeholders & consultant	Manager Sustainability & Environment	9/08 and then annually	Survey conducted
	7c) Review operational policies as appropriate	EH Team & Stakeholders	Manager Sustainability & Environment	12/08 and then annually	Policies & Procedures Manual updated
	7d) Draft report for management and community on progress in domestic wastewater management	Manager Sustainability & Environment	Manager Sustainability & Environment	7/08 first report then as needed	Timely reports submitted

Management Action Plan

Year 2 - 3	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
8. Strategy: ***Development of a septic tank system monitoring program for high risk catchment area/localities*** **Objectives:** • To develop a complete septic tank system profile on each high risk sub-catchment area • To ascertain specific systems' performance (point source) • To assess surface water and ground water quality • To monitor and assess the impact of wastewater management strategies	8a) Assess legislative options to address monitoring and monitoring limitations. determine council obligations and explore solutions	Manager Sustainability & Environment & LGDWSIG	Manager Sustainability & Environment	3/09	Review conducted and requirements identified
	8b) Develop & implement a risk based program for monitoring septic tank systems.	Consultant & LGDWSIG	Manager Sustainability & Environment	7/09	Program developed and costed
	8c) Determine base-line ground water / surface water quality.	Goulburn Murray Water	Manager Sustainability & Environment	7/09	Data obtained from GMW & overlayed on GIS
	8d) Implement a system for periodic reporting of monitoring results to stakeholders	Consultant & LGDWSIG	Manager Sustainability & Environment	7/09	Periodic reporting to stakeholders implemented
	8e) Investigate the implementation of a charging system to recover the cost of monitoring	Consultant & LGDWSIG	Manager Sustainability & Environment	2/09	Assess options and determine action required

Management Action Plan

Year 3	Action Steps	Team/ Partners	Responsible person	Due date:	Monitoring & performance indicators
9. Strategy: **Evaluation of Domestic Wastewater Management Plan** **Objectives:** • To assess implementation of strategies and progress towards objectives • To identify successes and constraints to implementing strategies • To report progress to management, stakeholders and community • To re-develop the Plan	9a) Develop evaluation objectives and design evaluation process in consultation with stakeholders	LGDWSIG Consultant &	Manager Sustainability & Environment	2/09	Evaluation Assessment Tool produced
	9b) Undertake evaluation and analyse results	LGDWSIG & Consultant	Manager Sustainability & Environment	3/09	Report on findings and recommended actions completed
	9c) Draft report for management and community on progress in domestic wastewater management	LGDWSIG & Consultant	Manager Sustainability & Environment	4/09	Report submitted for approval
	9d) Re-develop DWMP	LGDWSIG & Consultant	Manager Sustainability & Environment	6/09 and then annually	Revised DWMP approved by Council

Management Action Plan Cost Estimate Summary

Year(s)	Activity	Budget Estimate
1 - 2	Development of a septic tank maintenance and management information and education program. Development of a septic tank system monitoring program for council owned properties Establish a funded permitting system for septic tank systems Review Domestic Wastewater Information Management System Development and review of operational policies and procedures Development of a compliance auditing regime Review of Action Plan	$ 35,000
2 -3	Development of a septic tank system monitoring program for high risk catchment area/localities Review of Action Plan	$ 25,000
3	Review of Action Plan Evaluation of Domestic Wastewater Management Plan	$ 10,000

TOWN / LOCALITY SPECIFIC ACTION PLAN

Township	Specific Strategies	Action Steps	Team/ Partners	Responsible Person	Due Date/ Timeframe	Monitoring & Performance Indicators
Dookie	To develop a complete septic tank system profile	Research permit history	EH Team	Manager Sustainability & Environment	3/08	Random Audit
		Conduct survey & inspections as required & update database	EH Team & consultants		6/08	
	Conduct monitoring program	Develop & implement program	GVW & GMW		9/08	Compliance
Katandra West	To develop a complete septic tank system profile	Research permit history	EH Team	Manager Sustainability & Environment	3/08	Random Audit
		Conduct survey & inspections as required & update database	EH Team & consultants		6/08	
	Conduct monitoring program	Develop & implement program	GVW & GMW		3/09	Compliance
Shepparton East	To develop a complete septic tank system profile	Research permit history	EH Team	Manager Sustainability & Environment	3/08	Random Audit
		Conduct survey & inspections as required & update database	EH Team & consultants		6/08	
	Conduct monitoring program	Develop & implement program	GVW & GMW		3/09	Compliance
Tallygaroopna	To develop a complete septic tank system profile	Research permit history	EH Team	Manager Sustainability & Environment	3/08	Random Audit
		Conduct survey & inspections as required & update database	EH Team & consultants		6/08	
	Conduct monitoring	Develop & implement program	GVW & GMW		3/09	Compliance

Toolamba	To develop a complete septic tank system profile	Research permit history	EH Team	Manager Sustainability & Environment	3/08	Random Audit
		Conduct survey & inspections as required & update database	EH Team & consultants		6/08	
	Conduct monitoring program	Develop & implement program	GVW & GMW		3/09	Compliance

Regional Action Plan in conjunction with the LGDWSIG

Specific Strategies	Action Steps	Team/ Partners	Responsible Person	Due Date/ Timeframe	Monitoring & Performance Indicators
1. Preparation of a proposal for government funding for the development, piloting and evaluation of (regionally based) risk based compliance monitoring model	• Develop a preliminary proposal to ascertain feasibility for funding of model development and piloting of model • Obtain support for proposal from local and regional stakeholders • Presentation to government (DSE) *(Further actions to be developed if successful in funding bid <u>otherwise</u> an action plan will be developed to proceed on a smaller scale pilot)*	Participating councils and authorities	Consultants	July 2006 March 2007	Development and presentation of proposal

2. Development of a non-compliance management policy	• Preparation and conduct workshops/forums to scope non-compliance issues and develop criteria for management and resolution • Develop draft policy operating procedures through continued consultation • Develop draft policy for adoption by participating councils	Participating councils and authorities	Consultants	October 2007	Development of draft policy
Specific Strategies	**Action Steps**	**Team/ Partners**	**Responsible Person**	**Due Date/ Timeframe**	**Monitoring & Performance Indicators**
3. Review of draft policies and procedures	• Undertake systematic review of policies and procedures • Redraft policies and procedures as appropriate • Publish revised policy and procedures manual	Participating councils and authorities	Consultants	November 2007	Re-issue of policy and procedures manual

4. Review of DWMP's	• Undertake review of DWMP's through workshop(s) and informed by: o the collective & individual experiences in implementing plans o changes to septic tank system profiles changes to legislation and/or policy	Participating councils and consultants	Council managers	February - March 2008	Reviews undertaken, DWMP revised, and report to council

Appendices

Appendix 1-DWMP Project Management Group Members

Greg McKenzie	Manager Sustainability & Environment
Lisa Eade	Team Leader, Co-ordinator Environmental Health
Samantha Crowe	Team Leader, Co-ordinator Environmental Health
Jim Smith	Infocus Management
Simon Berton	Infocus Management Group
Neil Dunbar	WDMS

Appendix 2 CTWS&SP Preliminary Assessment of Sewerage Needs

Summary of Assessments

Location	Page
Arcadia	55
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Bunbartha	59
Bunbartha - Medland Estate	61
Congupna	63
Dookie	65
Grahamvale - Dobsons Estate	67
- Robert & Mildred Courts	69
Katandra West	71
Kialla Central	73
Kialla West	75
Murchison East	77
Old Katandra	79
Old Toolamba	81
Orrvale - Davies Drive	83
- Mason, Mammone & Konig Courts	85
- Reynolds Crt/Sunshine Drive	87
Shepparton - Matilda Drive	89
Shepparton East	91
Tallygaroopna	93

Preliminary Assessment of Sewerage Needs	
Town:	**Arcadia**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	23
Number of Allotments <1000? m^2	5
Number of Allotments > than1000? m^2	18
Number of Houses	21
Age of septic tanks	1950 – present
% Septic tanks built after 1980 (approximate)	5%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	Yes – proximity to the Goulburn River
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Small satellite district with community hall and tennis club
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	Approx. 40% of houses with sullage/ greywater water entering the street drain
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available)	~~High / Medium/ Low~~/ Not known

comments	
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Sullage water in street drain is a risk due to potential contact with children and animals
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Small satellite district with community hall and tennis club
Level of waste generated from commercial/Industrial premises	None
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ ~~Need further investigation~~
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Arcadia Downs**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	104
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	104
Number of Houses	97
Age of septic tanks	1987 – present
% Septic tanks built after 1980 (approximate)	100%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	Yes – proximity to the Goulburn River
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Satellite residential sub-division standard 1 Acre allotments provided with reticulated town water, there are no commercial businesses
Visual Assessment	
Smell/colour/Quality	There have been some complaints received regarding failing septic tank systems
Evidence that septic effluent is not being contained on site	No
% of houses where there is evidence that effluent is not contained on site	~~Substantial/ Some~~/ Not known
Comments	There have been some complaints of some systems not performing as expected due to poor absorption properties of the soil
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	

Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known Needs investigation
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Mixture - Clay soils – poor absorption and – Sandy soils – good absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months in clay areas
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town is a small satellite settlement , there are no commercial businesses
Level of waste generated from commercial/Industrial premises	none
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	No, although due to the size of allotments any further building extensions may be difficult depending on the suitability of disposal
Councils Ranking of Priority Needs	
General Comments	All septic tank systems were designed to be contained on-site at the time of installation; this requires closer/improved management by Council. An investigation should be undertaken of the impacts to groundwater and the Goulburn River due to the sandhills part of the sub-division.

Preliminary Assessment of Sewerage Needs	
Town:	**Bunbartha**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	61
Number of Allotments <1000? m^2	10
Number of Allotments > than1000? m^2	51
Number of Houses	15
Age of septic tanks	1950 – present
% Septic tanks built after 1980 (approximate)	10-15%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	Yes – proximity to the Goulburn River
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Small satellite district with general store and community hall/tennis club, several vacant allotments potential for future development
Visual Assessment	
Smell/colour/Quality	
Evidence that septic effluent is not being contained on site	No
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ ~~Some~~/ Not Known
Comments	Due to the age of the septic tank systems there is anecdotal evidence that some effluent may not be contained on-site
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available)	~~High / Medium/ Low~~/ Not known

comments	
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Small satellite district with general store and community hall/tennis club, several vacant allotments potential for future development
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the septic tank systems there is anecdotal evidence that some effluent may not be contained on-site and the size of properties restricts the upgrade of systems. There is several vacant allotments with potential for future development

Preliminary Assessment of Sewerage Needs	
Town:	**Medland Estate, Bunbartha**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	44
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	44
Number of Houses	39
Age of septic tanks	1983 – present
% Septic tanks built after 1980 (approximate)	100%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	Yes – proximity to the Goulburn River
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Satellite residential sub-division standard 1 Acre allotments with no commercial/industrial businesses
Visual Assessment	
Smell/colour/Quality	There have been some complaints received regarding failing septic tank systems. There is some concern regarding the mixed soil types and impact on ground water
Evidence that septic effluent is not being contained on site	No
% of houses where there is evidence that effluent is not contained on site	~~Substantial/ Some~~/ Not known
Comments	There have been some complaints of some systems not performing as expected due to poor absorption properties of the soil
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known Needs investigation

Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Mixture - Clay soils – poor absorption and – Sandy soils – good absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months in clay areas
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town is a small satellite settlement , there are no commercial businesses
Level of waste generated from commercial/Industrial premises	none
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	No, although due to the size of allotments any further building extensions may be difficult depending on the suitability of disposal
Councils Ranking of Priority Needs	
General Comments	All septic tank systems were designed to be contained on-site at the time of installation; this requires closer/improved management by Council. An investigation should be undertaken of the impacts to groundwater and the Goulburn River due to the sandhills part of the sub-division.

Preliminary Assessment of Sewerage Needs	
Town:	**Congupna**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	56
Number of Allotments <1000? m^2	10
Number of Allotments > than1000? m^2	46
Number of Houses	56
Age of septic tanks	1950 – present
% Septic tanks built after 1980 (approximate)	40%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Town has a general store, primary school, recreation reserve/oval/tennis courts, Fertiliser Depot and Caravan Park
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	Approx. 20-30% of houses with sullage/ greywater water entering the street drain and some failing systems
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	Sample of stormwater taken in April 2004 (results attached)
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	

Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Sullage water in street drain is a risk due to potential contact with children and animals
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town has a general store, primary school, recreation reserve/oval/tennis courts, Fertiliser Depot and Caravan Park
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ Need further investigation
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Dookie**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	150
Number of Allotments <1000? m^2	72
Number of Allotments > than1000? m^2	78
Number of Houses	108
Age of septic tanks	1950 – present
% Septic tanks built after 1980 (approximate)	5 - 10%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Town has a general store, primary school, pre-school, recreation reserve/oval/tennis courts, Engineering business and Pub/Hotel
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	Approx. 50% of houses with sullage/ greywater water entering the street drain
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	Sample of stormwater taken in April 2004 (results attached)
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	

Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Sullage water in street drain is a risk due to potential contact with children and animals
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town has a general store, primary school, pre-school, recreation reserve/oval/tennis courts, Engineering business and Pub/Hotel
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ ~~Need further investigation~~
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Dobsons Estate, Grahamvale**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	144
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	144
Number of Houses	142
Age of septic tanks	1970 – present
% Septic tanks built after 1980 (approximate)	85%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Large residential sub-division standard 1 Acre allotments, provided with town water on the fringe of Shepparton township, there are no commercial businesses
Visual Assessment	
Smell/colour/Quality	There have been some complaints received regarding failing septic tank systems.
Evidence that septic effluent is not being contained on site	No
% of houses where there is evidence that effluent is not contained on site	~~Substantial/~~ Some/ ~~Not known~~
Comments	There have been some complaints (approx 20%) of some systems not performing as expected due to poor absorption properties of the soil
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	

What are the risks of:	
Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Large residential sub-divisions standard 1 Acre allotments, provided with town water on the fringe of Shepparton township, there are no commercial businesses
Level of waste generated from commercial/Industrial premises	none
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	No, although due to the size of allotments any further building extensions may be difficult depending on the suitability of disposal and land capability
Councils Ranking of Priority Needs	
General Comments All septic tank systems were designed to be contained on-site at the time of installation; this requires closer/improved management by Council. Then future planning needs can be addressed, the possibility of connection to reticulated sewerage should also be investigated.	

Preliminary Assessment of Sewerage Needs	
Town:	**Robert & Mildred Court, Grahamvale**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	19
Number of Allotments <1000? m^2	18
Number of Allotments > than1000? m^2	1
Number of Houses	18
Age of septic tanks	1970 – present
% Septic tanks built after 1980 (approximate)	50%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Small satellite sub-division with small allotments
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	Substantial/ ~~Some/~~ ~~Not Known~~
Comments	Approx. 90% of houses with sullage/ greywater water entering the street drain
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	Sample of stormwater taken in April 2004 (results attached)
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known Complaints about odour from sullage water by residents in the late 1980's early 1990's lead to direct pipe connection of sullage disposal to the underground stormwater pipework.
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known

Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / ~~Medium~~/ Low/ ~~Not known~~ Sullage water is now directed to open stormwater drain in New Dookie Road, less potential for human contact.
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Small satellite sub-division with small allotments
Level of waste generated from commercial/Industrial premises	none
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ ~~Need further investigation~~
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	Applications for dwelling additions are difficult to approve on the grounds that the septic can not be upgraded and contained on-site
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Katandra West**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	118
Number of Allotments <1000? m^2	52
Number of Allotments > than1000? m^2	66
Number of Houses	83
Age of septic tanks	1950 - present
% Septic tanks built after 1980 (approximate)	20%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Town has a general store, Tatura Milk Hardware store, primary school, pre-school, recreation reserve/oval/tennis courts.
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	Approx. 50% of houses with sullage/ greywater water entering the street drain
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	Sample of stormwater taken in April 2004 (results attached)
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	

Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Sullage water in street drain is a risk due to potential contact with children and animals, odour is offensive to residents
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town has a general store, Tatura Milk Hardware store, primary school, pre-school, recreation reserve/oval/tennis courts.
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ ~~Need further investigation~~
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	Future subdivisions planned for to the west of the town, progress has been halted by Land Capability.
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	Applications for new dwellings on existing titles of less than 1,000m^2 have been rejected based on house size and area needed for effluent disposal
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Kialla Central**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	65
Number of Allotments <1000? m^2	1
Number of Allotments > than1000? m^2	64
Number of Houses	63
Age of septic tanks	1960 – present
% Septic tanks built after 1980 (approximate)	5%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Small satellite district with a primary school and community hall
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	Approx. 40% of houses with sullage/ greywater water entering the street drain
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	Sample of stormwater taken in April 2004 (results attached)
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	

Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Sullage water in street drain is a risk due to potential contact with children and animals
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Small satellite district with a school and community hall
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ ~~Need further investigation~~
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Kialla West**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	93
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	93
Number of Houses	90
Age of septic tanks	1960 – present
% Septic tanks built after 1980 (approximate)	60%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Small satellite district with a primary school
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	Approx. 20% of houses with sullage/ greywater water entering the street drain and some failing systems
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available)	~~High / Medium/ Low~~/ Not known

comments	
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Sullage water in street drain is a risk due to potential contact with children and animals
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Primary School had recently upgraded system to WWTP
Level of waste generated from commercial/Industrial premises	See relevant permit
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	~~Yes~~ / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	Proposed subdivision to the west of the town in the initial planning stages – lot sizes all about 4,000m^2 – concern about containment, density and soil capability
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Murchison East**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	96
Number of Allotments <1000? m^2	13
Number of Allotments > than1000? m^2	83
Number of Houses	43
Age of septic tanks	1950 – present
% Septic tanks built after 1980 (approximate)	10-15%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	Yes – proximity to the Goulburn River
Subject to substantial seasonal increase in population (%change in population)	Yes – Caravan Parks influx in fruit picking season (approx. 10-15%)
Comments	Town has a service station, 2 Caravan Parks, 1 Motel and 2 Pub/Hotels
Visual Assessment	
Smell/colour/Quality	There have been some complaints received regarding failing septic tank systems
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	History of some systems (approx. 20%) failing due to the age of systems and limiting block sizes
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known

Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Exposure to wastewater is a risk due to potential contact with children and animals
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town has a service station, 2 Caravan Parks, 1 Motel and 2 Pub/Hotels
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ Need further investigation
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	Yes, initial discussions with GV Water regarding re-development of 1 Pub/Hotel
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	Planning permit not yet issued for proposed Hotel re-development due to wastewater management issues and land capability
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Old Katandra**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	14
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	14
Number of Houses	9
Age of septic tanks	1950 – present
% Septic tanks built after 1980 (approximate)	10-15%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Small satellite district with community hall/tennis club
Visual Assessment	
Smell/colour/Quality	
Evidence that septic effluent is not being contained on site	No
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ ~~Some/~~ Not Known
Comments	Due to the age of the septic tank systems there is anecdotal evidence that some effluent may not be contained on-site
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known

Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Small satellite district with community hall/tennis club
Level of waste generated from commercial/Industrial premises	None
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the septic tank systems there is anecdotal evidence that some effluent may not be contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Old Toolamba**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	72
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	72
Number of Houses	62
Age of septic tanks	1950 – present
% Septic tanks built after 1980 (approximate)	50%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	Yes – proximity to the Goulburn River
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Town is a small satellite settlement
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with some failing septic tank systems, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	History of some failing systems, estimate 10-20% of systems
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available)	~~High / Medium/ Low~~/ Not known

comments	
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town is a small satellite settlement , there are no commercial businesses
Level of waste generated from commercial/Industrial premises	none
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	~~Yes~~ / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Davies Drive, Orrvale**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	21
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	21
Number of Houses	19
Age of septic tanks	1980 – present
% Septic tanks built after 1980 (approximate)	100%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Residential sub-division standard 1 Acre allotments, provided with town water on the fringe of Shepparton township, there are no commercial businesses, recent adjoining sub-division provided with reticulated sewerage connection.
Visual Assessment	
Smell/colour/Quality	
Evidence that septic effluent is not being contained on site	No
% of houses where there is evidence that effluent is not contained on site	~~Substantial/ Some~~/ Not known
Comments	There is anecdotal evidence that there may be problems with some systems due to the poor absorption properties of the soils.
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available)	~~High / Medium/ Low~~/ Not known

comments	
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Residential sub-division standard 1 Acre allotments, provided with town water on the fringe of Shepparton township, there are no commercial businesses, recent adjoining sub-division provided with reticulated sewerage connection.
Level of waste generated from commercial/Industrial premises	none
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	No, although due to the size of allotments any further building extensions may be difficult depending on the suitability of disposal and land capability
Councils Ranking of Priority Needs	
General Comments All septic tank systems were designed to be contained on-site at the time of installation; this requires closer/improved management by Council. Then future planning needs can be addressed, the possibility of connection to reticulated sewerage should also be investigated.	

Preliminary Assessment of Sewerage Needs

Town:	**Orrvale – Mason, Mammone & Konig Courts**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	44
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	44
Number of Houses	41
Age of septic tanks	(existing system for caravan park) remaining 1982 – present
% Septic tanks built after 1980 (approximate)	95%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	Yes – Caravan Park influx in fruit picking season (approx. 10-15%)
Comments	Satellite residential sub-divisions standard 1 Acre allotments with adjoining Caravan Park (EPA managed system)
Visual Assessment	
Smell/colour/Quality	There have been some complaints received regarding failing septic tank systems.
Evidence that septic effluent is not being contained on site	No
% of houses where there is evidence that effluent is not contained on site	~~Substantial/ Some~~/ Not known
Comments	There have been some complaints of some systems not performing as expected due to poor absorption properties of the soil
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *Comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known

Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Satellite residential sub-divisions standard 1 Acre allotments with adjoining Caravan Park (EPA managed system)
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	No, although due to the size of allotments any further building extensions may be difficult depending on the suitability of disposal and land capability
Councils Ranking of Priority Needs	
General Comments	All septic tank systems were designed to be contained on-site at the time of installation; this requires closer/improved management by Council.

Preliminary Assessment of Sewerage Needs	
Town:	**Orrvale – Reynolds Crt/ Sunshine Drive**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	27
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	27
Number of Houses	23
Age of septic tanks	(one existing house 1960) remaining 1989 – present
% Septic tanks built after 1980 (approximate)	95%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Satellite residential sub-division standard 1 Acre allotments with no commercial/industrial businesses
Visual Assessment	
Smell/colour/Quality	There have been some complaints received regarding failing septic tank systems.
Evidence that septic effluent is not being contained on site	No
% of houses where there is evidence that effluent is not contained on site	~~Substantial/ Some~~/ Not known
Comments	There have been some complaints of some systems not performing as expected due to poor absorption properties of the soil
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	

Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town is a small satellite settlement , there are no commercial businesses
Level of waste generated from commercial/Industrial premises	none
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	No, although due to the size of allotments any further building extensions may be difficult depending on the suitability of disposal and land capability
Councils Ranking of Priority Needs	
General Comments	All septic tank systems were designed to be contained on-site at the time of installation; this requires closer/improved management by Council.

Preliminary Assessment of Sewerage Needs	
Town:	**Matilda Drive Estate, Shepparton**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	45
Number of Allotments <1000? m^2	0
Number of Allotments > than1000? m^2	45
Number of Houses	43
Age of septic tanks	1989 – present
% Septic tanks built after 1980 (approximate)	100%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Residential sub-division standard 1 Acre allotments, provided with town water on the fringe of Shepparton township, there are no commercial businesses
Visual Assessment	
Smell/colour/Quality	There have been some complaints received regarding failing septic tank systems.
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial/~~ Some~~/ Not known~~
Comments	There have been some complaints (approx 5-10%) of some systems not performing as expected due to poor absorption properties of the soil
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available)	~~High / Medium/ Low~~/ Not known

comments	
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Large residential sub-divisions standard 1 Acre allotments, provided with town water on the fringe of Shepparton township, there are no commercial businesses
Level of waste generated from commercial/Industrial premises	none
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / ~~No~~/ Need further investigation
Can above issues be addressed through improved septic tank management	Yes / ~~No~~/ Need further investigation
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	No, although due to the size of allotments any further building extensions may be difficult depending on the suitability of disposal and land capability
Councils Ranking of Priority Needs	
General Comments All septic tank systems were designed to be contained on-site at the time of installation; this requires closer/improved management by Council. Then future planning needs can be addressed, the possibility of connection to reticulated sewerage should also be investigated.	

Preliminary Assessment of Sewerage Needs	
Town:	**Shepparton East**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	85
Number of Allotments <1000? m^2	38
Number of Allotments > than1000? m^2	47
Number of Houses	70
Age of septic tanks	1950 – present
% Septic tanks built after 1980 (approximate)	25%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Town has a general store, primary school, community hall, car yard and plumbing supply store
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	Approx. 50% of houses with sullage/ greywater water entering the street drain
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	Sample of stormwater taken in April 2004 (results attached)
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	

Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Sullage water in street drain is a risk due to potential contact with children and animals
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town has a general store, primary school, community hall, car yard and plumbing supply store
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ ~~Need further investigation~~
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	Proposed 15 lot subdivision – lot sizes all about 4,000m^2 – concern about containment, applicant appealed to VCAT
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	Recent VCAT hearing 15 lot sub-div decision not in Council's favour
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

Preliminary Assessment of Sewerage Needs	
Town:	**Tallygaroopna**
Council:	**Greater Shepparton City Council**
Water Authority:	Goulburn Valley Water
Regional EPA Office:	Wangaratta
Number of Allotments	118
Number of Allotments <1000? m^2	50
Number of Allotments > than1000? m^2	68
Number of Houses	97
Age of septic tanks	1950 - present
% Septic tanks built after 1980 (approximate)	20%
Town Characteristics	
Is the town:	
In a designated water supply catchment	No
Adjacent to a natural environment of significance	No
Subject to substantial seasonal increase in population (%change in population)	No
Comments	Town has a general store, primary school, pre-school, recreation reserve/oval/tennis courts and Pub/Hotel
Visual Assessment	
Smell/colour/Quality	There is odour problems associated with greywater/sullage in street drains, which is offensive to residents
Evidence that septic effluent is not being contained on site	Yes
% of houses where there is evidence that effluent is not contained on site	~~Substantial~~/ Some/ ~~Not Known~~
Comments	Approx. 50% of houses with sullage/ greywater water entering the street drain
Health and Environmental Impacts	
Is there evidence of:	
Groundwater contamination (if available) *comments*	~~Substantial/ Some~~/ Not known
Storm water Quality information (if available) *comments*	
Stream contamination (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation - flora and fauna (if available) *comments*	
Impacts on aquatic environment (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High / Medium/ Low~~/ Not known
Risk Assessment of Public Health and Environmental Impacts	
What are the risks of:	
Ground water contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known

Stream contamination Information (if available) *comments*	~~High / Medium/ Low~~/ Not known
Impacts on native vegetation (if available) *comments*	~~High / Medium/ Low~~/ Not known
Public Health impacts (if available) *comments*	~~High~~ / Medium/ Low/ ~~Not known~~ Sullage water in street drain is a risk due to potential contact with children and animals
Microbiological water quality information (if available) *comments*	
Presence of Blue Green algae (if available) *comments*	
Predictors of adverse Public Health and Environmental Impacts	
Soil type - impact on effectiveness of septic tank	Clay soils – low percolation rates/ poor absorption
Geological features (if available) *comments*	
Rain fall - impact on effectiveness of septic tank	Water logging in the winter months
Ground water level (if available) *comments*	
Number and scale of commercial premises	Town has a general store, primary school, pre-school, recreation reserve/oval/tennis courts and Pub/Hotel
Level of waste generated from commercial/Industrial premises	Data not available
Existing Public Health and Envi. Considerations	
Can above issues be addressed through septic tank upgrade	~~Yes~~ / No/ ~~Need further investigation~~
Can above issues be addressed through improved septic tank management	~~Yes~~ / No/ ~~Need further investigation~~
EPA comments (if available) *comments*	n/a
CMA/Regional DSE comments (if available) *comments*	n/a
Have you had discussions with DHS? (if available) *comments*	No
Have you had discussions with the water authority? (if available) *comments*	No
Future Development	
Future needs related to development within the town *comments*	
Estimated time at which the provision of services be required	
Growth rate of the town	
Number of Planning permits rejected	
Councils Ranking of Priority Needs	
General Comments	Due to the age of the houses and septic systems sullage water is not contained on-site and the size of properties restricts the upgrade of systems

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