Domestic Wastewater Management Plan

2016–2020

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Executive Summary

Our Water Our Future – Securing Our Water Future Together is a significant policy of the Victorian government relating to water and wastewater. This program provided state government funding to assist local government in developing Domestic Wastewater Management Plans (DWMP). The development of the DWMP by councils has been called for under the State Environment Protection Policy (Waters of Victoria).

Council is committed to responsible domestic wastewater management practices in unsewered areas throughout the municipality. Health and environmental issues associated with domestic wastewater are highlighted in numerous Council policies and initiatives including the Council Plan, Municipal Strategic Statement, Municipal Public Health Plan, Environment Strategy and Stormwater Management Plan. This has come from concerns about inappropriate development, contamination of ground water, and the associated risks to health and the receiving environment caused by off site discharges from failing septic tank systems.

The DWMP provides a management framework for stakeholders including policy makers, planners and regulatory and enforcement staff to implement management strategies for domestic wastewater systems on an integrated basis.

Council has been collecting data on Frankston's existing domestic wastewater profile. Currently there are 1,474 septic tank systems within the municipality with approximately 10 new applications for systems being received annually.

Key recommendations of the Plan will include the development of Council's Wastewater Management Policy, improvements to service delivery, and the development of specific strategies and actions to manage identified risks.

Introduction

The Frankston City Council Domestic Wastewater Management Plan aims to minimise the impact of domestic wastewater on human health and the local receiving environments within the municipality.

The preparation of the Domestic Wastewater Management Plan is based on the EPA/MAV Model Municipal Domestic Wastewater Management Plan.

Council is committed to responsible domestic wastewater management practices in unsewered areas throughout the municipality. Health and environmental issues associated with domestic wastewater are highlighted in numerous Council policies and initiatives including the Council Plan, Municipal Strategic Statement, Municipal Public Health Plan, Environment Strategy and Stormwater Management Plan. Council has already invested considerable time and resources into the development of a comprehensive data base of the existing septic systems within the municipality.

The DWMP provides Council with a:

- planning tool to enable long term strategies to be developed for septic tank management;
- framework for making decisions about individual installations including enforcement and compliance options, and
- a strategic framework for costing and funding septic management within the municipality.

The precautionary principle provides a guideline for the development of domestic waste water management strategies. The precautionary principle is based on the understanding that:

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

2. Decision making should be guided by—

   (a) a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and

   (b) an assessment of the risk-weighted consequences of various options.

(Environment Protection Act 1970)

In addition the principle of wastes hierarchy is also important and provides guidance on the range of strategies that should be incorporated into the plan. Wastes should be managed in accordance with the following order of preference:

(a) Avoidance
(b) Re-use
(c) Re-cycling
(d) Recovery of energy
(e) Treatment
(f) Containment
(g) Disposal

1.0 Domestic Wastewater and Risk Management

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

There are 1,474 septic tank systems in use within the Municipality, including a number of systems which are failing to deliver a satisfactory performance, resulting in threats to public health and pollution of local waterways. In some cases system failure is due to poor maintenance and management practices by property owners and occupiers. In other cases these systems do not comply with current legislative requirements as they were approved for use before legislation required all effluent to be treated and disposed of on-site. This means that only toilet waste is being disposed of via a septic tank and trenches with grey water either being discharged to the street or on the property untreated.

The environmental impacts associated with domestic wastewater are due to the many pollutants it contains. Bacteria, viruses, lint, food and human waste products, along with chemicals derived from detergents and other cleaning products can impact greatly on the environment. These pollutants can build up in the soil damaging the soil structure, altering soil pH balances and harming plant growth. Failed septic tank systems can result in effluent discharge at ground level resulting in odour nuisances and the potential for disease transmission. Microbial contaminants such as bacteria, viruses and algal blooms pose a significant public health risk.

The environmental impacts of domestic wastewater pollution may not be confined to the property where it originates. Septic tank systems that have failed, or systems that have been installed in inappropriate soils, may result in

effluent being discharged into storm water drains, rivers and streams, contributing to the pollution loads in these environments.

Wastewater poses a public health, environmental, legal and economic risk and Council has a primary responsibility to manage these risks including the enforcement of legislation.

2.0 The Purpose and Objectives of the Frankston City Domestic Wastewater Management Plan (DWMP)

The SEPP (Waters of Victoria) sets out requirements for managing domestic wastewater. Under this SEPP (Waters of Victoria), which came into effect on 15 March 1988, Councils are responsible for ensuring new residential subdivisions are provided with reticulated sewerage at the time of subdivision or that the allotments are capable of treating and containing all domestic wastewater within the boundaries of each allotment.

The SEPP also outlines the need for councils to:

- Assess the suitability of the land for an on-site system prior to approving a development (LCA);
- Ensure that sewerage is provided at the time of sub-division if the use of on-site systems would result in wastewater being discharged beyond allotment boundaries or would impact on groundwater beneficial uses;
- Ensure that permits are consistent with guidance provided by the EPA and the Septic Tank Code of Practice (Publication 891.4);
- Identify existing unsewered allotments incapable of preventing wastewater from being discharged beyond allotment boundaries and/or preventing impacts on groundwater beneficial uses; and
- Where relevant develop a Domestic Waste Water Management Plan.

The purpose of the Domestic Wastewater Management Plan then is to:

- Identify the main environmental values and wastewater threats in the municipality;
- Assist with long term planning and development of un-sewered areas in the municipality; and
- Improve public health and environment protection

The intended outcomes of the Domestic Wastewater Management Plan are:

- The development of Council Domestic Wastewater Management Policies;
- The development of management action plans that respond to current wastewater issues including the identification of opportunities for joint action with other stakeholders;
- The development of specific policies relating to inappropriate development in unsewered areas;
- The development of operating policies and procedures for the surveillance, monitoring, and enforcement of permit conditions for existing septic tank systems within the municipality.

The specific objectives of the DWMP are to:

- Develop Council's policy for the management of domestic wastewater and for consistent decision making for specific sites;
- Develop short and long term, reactive and proactive strategies for the management of septic tank systems and greywater re-use;
- Develop and implement options for the upgrade of existing systems and/or the installation of new wastewater technology;
- Develop a case for the connection of all unsewered properties to sewer where reticulated sewer is available;
- Develop a strategy for the management of domestic wastewater in areas of the municipality where the provision of sewer is not possible;
- Provide a systematic approach for assessing the costs, impacts and barriers to managing domestic wastewater; and
- Provide a framework for internal liaison between Council units, and external liaison with the public and relevant organisations.

An important part of the Domestic Wastewater Management Plan process is input from key stakeholders including the community throughout the project and occupiers of unsewered properties within the municipality.

In 2003 a Project Working Group (PWG) was established to develop Council's Domestic Wastewater Management Plan The Project Working Group initially comprised of Council's Amenity Services Manager, Environmental Health Officer, a newly appointed Wastewater Management Officer and Council's GPS/Mobile Computing Analyst. The terms of reference for the project management team were:

- To develop, implement, monitor and review the Domestic Wastewater Management Plan for Frankston City Council.
- To develop an electronic data base of septic tank systems using Graphical Information System (GIS) technology.
- To ensure that other relevant staff are aware of and participate in the implementation of the Domestic Wastewater Management Plan
- To identify relevant staff or organisations and their roles in implementing the Domestic Wastewater Management Plan
- To provide all relevant staff with regular updates on domestic wastewater management
- To provide leadership and direction for Council's domestic wastewater management
- To review and amend the Domestic Wastewater Management Plan as required

Through regular meetings of this group a GIS Septic Tank program was developed and mapping of all septic tank systems within the municipality has been completed.

Once this process was completed the PWG has been expanded to include Council representatives from the Planning and Environment Department, and representatives from the EPA and South East Water.

3.0 Legislation and government policies

The following outlines the pertinent legislative and State Government policy that relate to domestic wastewater and its management.

Environment Protection Act 1970

Under this legislation Council is responsible for approving the installation and use of septic tank systems designed to discharge up to 5,000 litres of effluent per day. Systems exceeding this volume are licensed by the EPA. Council's approval process includes the consideration of local factors that would impact the designed performance of the system such as allotment size and number of people using the system etc.

State Environment Protection Policies- Waters of Victoria June 2003

The Environment Protection Act provides for the formulation of State Environment Protection Policies (SEPPs). SEPPs are statements of government policy which provide direction for state government agencies, local government, the private sector and individuals in decision making.

SEPP (Waters of Victoria) which came into effect on 15 March 1988, identifies beneficial uses of the environment that must be protected. It also requires local government to ensuring new residential subdivisions are provided with reticulated sewerage at the time of subdivision, or that the allotments created are capable of treating and containing domestic wastewater within the boundaries of each allotment.

Ministerial Direction No 6 - Guidelines for Rural Residential Development

This Direction was issued under the Planning and Environment Act 1987 and must be implemented by all planning authorities. It requires Councils to undertake appropriate land assessment prior to rural residential subdivision. The Direction primarily addresses the subdivision and rezoning of areas into lots ranging from 0.4 hectare to 2 hectares.

EPA Code of Practice- Septic Tanks 2016

EPA has produced a Septic Tanks Code of Practice (detailed in EPA publication 891.4 of 2016) to guide in the design and installation of septic tank systems for the treatment and safe disposal of effluent in small wastewater systems (the reuse of effluent is detailed in other EPA publications).

Public Health and Wellbeing Act 2008

Section 24 states that it is the function of council to prevent disease and promote public health through organised programs which prevent or control environmental health dangers and disease. The Act requires Council's to remedy, as far as is reasonably possible, all nuisances in the municipal district. Nuisances are defined as something which is dangerous to health or offensive.

Water Industry Act 1994

Under Section 65 of the Water Industry Act 1994, property owners can be required to connect to sewerage if it is available, if the water or sewerage licensee is of the opinion that it is necessary for this to be done in the interests of health or the environment.

4.0 Council Policies

4.1 Council Plan 2013-2017

The goal of the Council Plan is to partner with the community in preserving and enhancing the City's natural environment for current and future generations. Three specific objectives of the Council Plan that relate to wastewater management are conservation of water resources, reduction in the generation of waste, and sustainability. These objectives and the strategies designed to achieve these objectives are outlined in the following table:

Table 1 Council Plan objectives and strategies relating to Domestic Wastewater Management

Council Plan Objective	Related strategies
3.2 Build a local community culture of good stewardship of the environment	• Educate industry and residents to reduce energy and water use and waste to landfill • Protect and maintain Council assets • Determine a long term waste management solution, including a waste recycling centre

4.2 Municipal Strategic Statement 2015

The City housing development that relies on on-site waste disposal is concentrated in the eastern and southern parts of the Langwarrin urban area, on land zoned Low Density Residential. One of the purposes of that zone is to provide for low density residential development on lots which, in the absence of reticulated sewer, can treat and retain all wastewater.

Essentially land use criteria require that the area has soils that are suitable for on-site waste disposal. In Langwarrin, the bulk of the Low Density Residential Zone, is located outside the sewerage area catchment. Subdivision controls in the zone require a minimum lot size of 1 hectare so as to provide year round effective on-site waste disposal. The issue of on-site waste disposal is specifically addressed in the Strategies which states that an adequate waste water system must be provided for the maintenance of public health and the management of effluent in an environmentally friendly manner and must be consistent with an approved Domestic Wastewater Management Plan.

4.3 Frankston Environmental Strategy 1998

A major objective in Section 12 of the Environmental Strategy pertaining to the urban environment is the minimizing of pollution. Frankston Council recognises the urban environment has high environmental impacts and that there is great potential to reduce those impacts.

4.4 Frankston City Council Stormwater Management Plan

The Frankston City Council Stormwater Management Plan is a guide for Council to aid in improving the environmental management of stormwater throughout the municipality. The Plan identifies a number of potentially significant sources of stormwater pollutants in the municipality. Potential sources that are not specifically addressed in the Stormwater Management Plan include seepage from under-performing septic tank systems and illegal discharges of wastewater to stormwater from properties not connected to sewer.

The Wastewater Management Plan has made use of the information contained within the Stormwater Management Plan in defining the stormwater catchments and sub-catchments within the municipality.

4.5 Frankston City Council Integrated Water Action Plan 2016-2026

Frankston City Council's Integrated Water Action Plan (IWAP) is a ten year plan to facilitate a strategic and practical approach to integrated and sustainable water management. The IWAP will deliver economic, environmental and social benefits to Frankston City and the wider region. The IWAP builds on work previously undertaken by Council during the development and implementation of its Stormwater Management Plan (2001), Sustainable Water Use Plan (2006), as well as the completion of Frankston City's Integrated Water and Pollutant Balance Study (2014). The IWAP focuses on actions that Council can achieve and has control of to improve integrated water management outcomes for the municipality. There are 37 actions to be undertaken by Council to improve processes to enable efficient and effective integrated water management. Action 15 listed requires the Domestic Wastewater Management Plan to be developed and implemented.

4.5 Frankston City Council Sustainable Water Use Plan

The Frankston City Council Sustainable Water Use Plan was developed in 2006 to provide leadership and direction for water management in Frankston City. The Plan outlines strategies and actions Council and community can undertake to reduce our dependence on freshwater supplies, reuse what water we have, and utilise groundwater and recycled water where necessary. The Plan also highlights a series of water quality actions which will be undertaken by Council to improve wastewater management, including the development of a Wastewater Management Plan.

5.0 Municipal Characteristics and Septic Tank System Profile

5.1 Locality and Characteristics

Frankston City Council occupies an area of 130km² and has a population in excess of 130,000 people. The municipality is situated on the eastern edge of Port Phillip Bay and features approximately 10km of coastal foreshore. Over 50% of the municipality is developed, with progressive development of new residential and industrial areas occurring at Carrum Downs and Langwarrin.

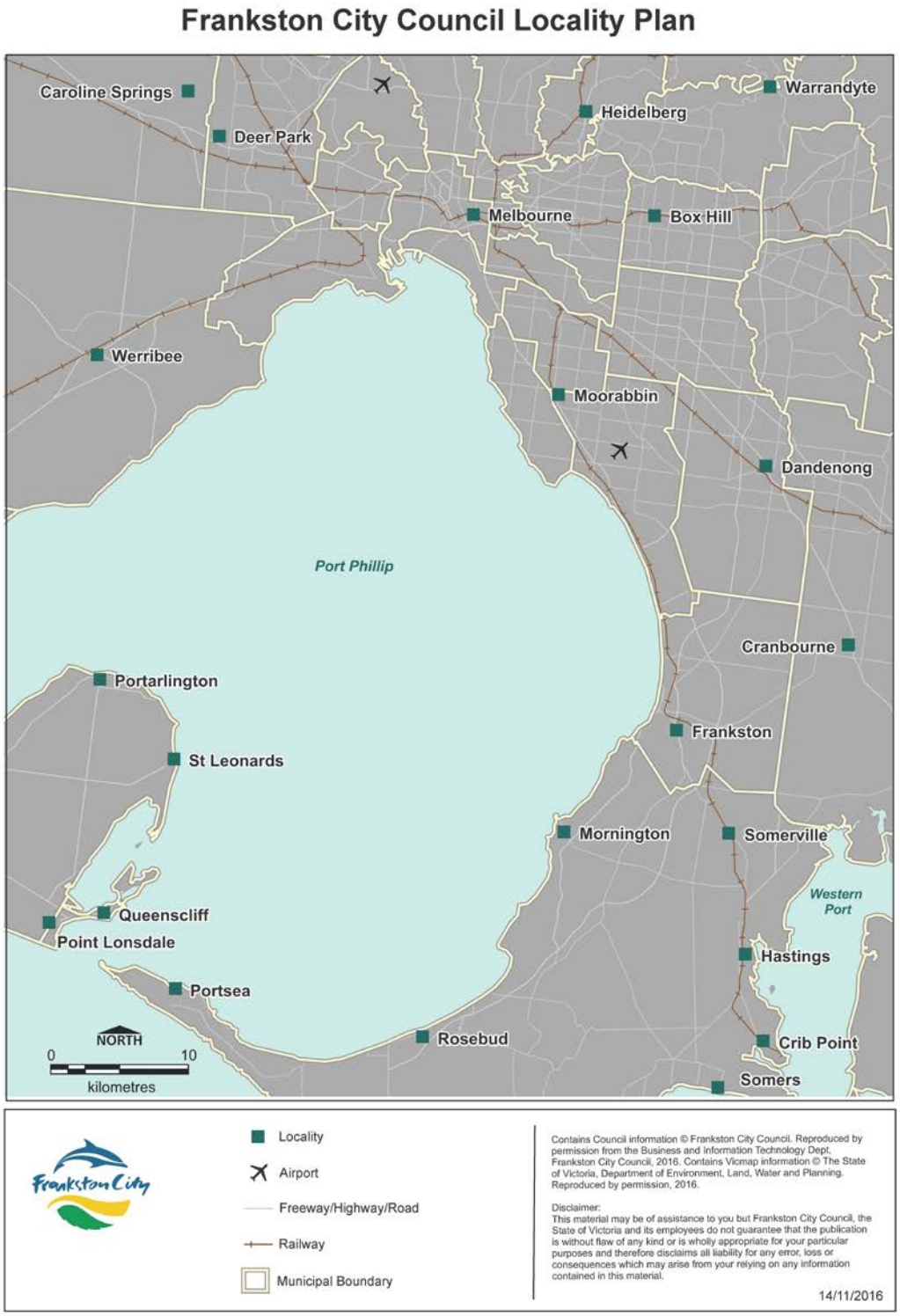
The municipality features a number of locally and regionally significant environments that provide ecological habitat, recreational and aesthetic amenity. These areas include Kananook Creek, Frankston foreshore (near the mouth of Kananook Creek), Seaford Wetlands, Frankston Reservoir, the Pines Flora and Fauna Reserve and Langwarrin Flora and Fauna Reserve.

Stormwater runoff from the municipality discharges into three major receiving environments as follows:

- Port Phillip Bay, via Sweetwater Creek, Kananook Creek and Boggy Creek. This includes over 70% of the municipality;
- Western Port, via Watsons Creek and various minor tributaries contained in the City of Casey and Mornington Peninsula Shire Council; and
- Patterson River Catchment in Greater Dandenong via the Eastern Contour Drain.

The majority of stormwater runoff from Frankston is generated within the municipality, with negligible inflows from areas outside the municipality. Figure No.1 shows key features within the municipality including major waterways and transport corridors. Relevant subsections that follow provide more details of land use and waterway characteristics.

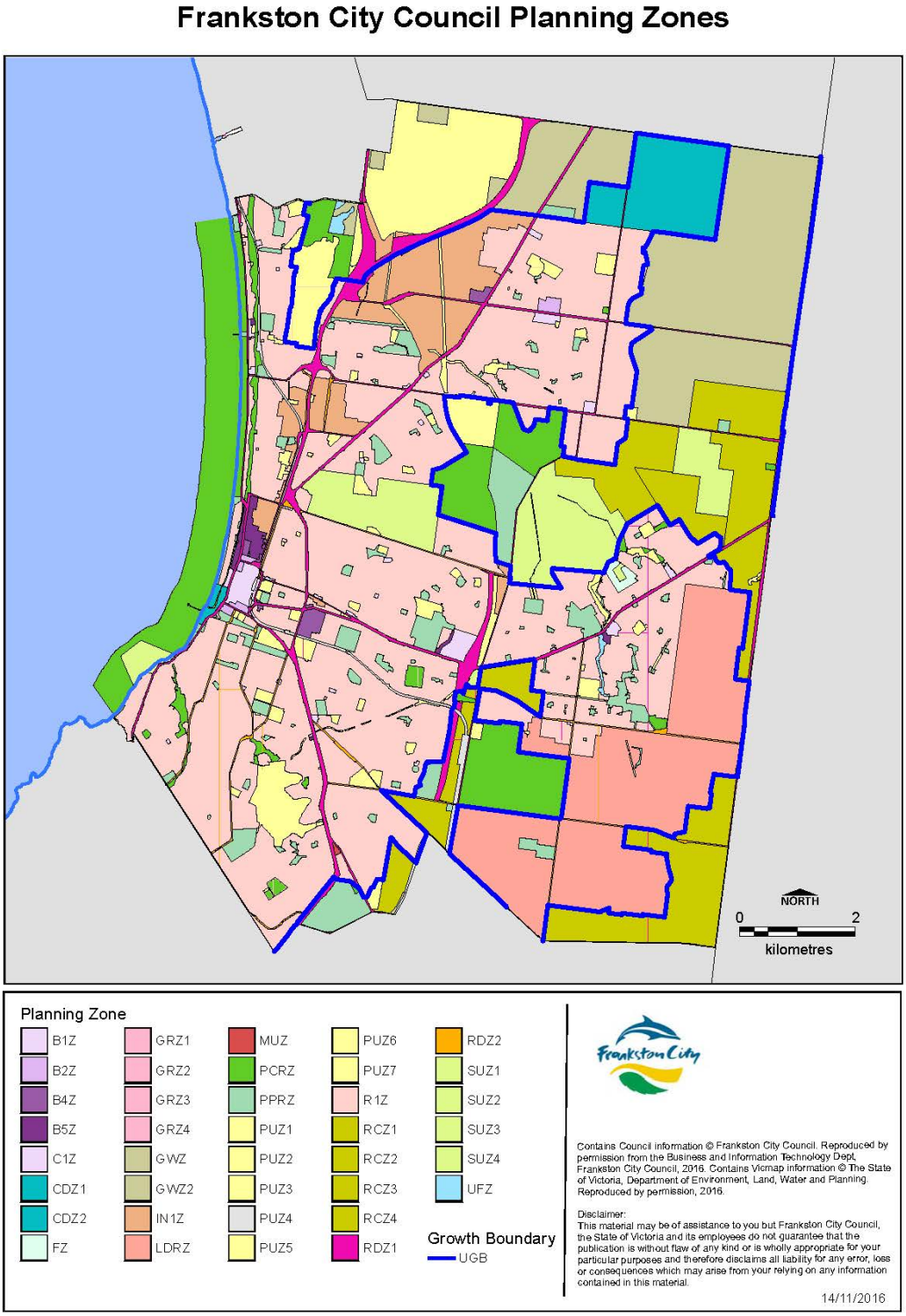
Figure 1 Frankston City Council Locality Plan



5.2 Land Use Characteristics

Figure 2 shows the distribution of land uses throughout the municipality. Established residential land use occupies approximately 50% of the municipality, with other major land uses including public open space (approximately 10%) and rural (approximately 32%). Designated growth areas are located in Carrum Downs and Langwarrin. Both areas support ongoing residential and semi-rural development, with significant areas in Carrum Downs designated for future industrial development.

Figure 2 Land Use



5.3 Sub Catchments within the Municipality

For the purposes of this DWMP the municipality has been separated into a series of sub-catchments, or reaches, to simplify assessments and provide a basis for developing management strategies. The breakdown of study sub-catchments has been based on hydrological catchment boundaries and major land use precincts. Eight (8) separate sub catchments have been defined as outlined below:

Table 2 Waterway Reaches (sub-catchments)

Reach Number	Reach Name	Waterway	Description
1	Sweetwater Creek	Sweetwater Creek	Entire Catchment
2	Lower Kananook Creek	Kananook Creek	Overton Road to Port Phillip Bay
3	Middle Kananook Creek		Morseby Avenue to Overton Road
4	Upper Kananook Creek		Mornington Peninsula Freeway to Morseby Avenue
5	Lower Boggy Creek	Boggy Creek	McClelland Drive to Mornington Peninsula Freeway
6	Upper Boggy Creek		Headwaters to McClelland Drive
7	Patterson River	Eastern Contour Drain	Entire catchment to Municipal Boundary
8	Westernport Catchments	Various	Entire catchment to Municipal Boundary

6.0 Domestic Wastewater Profile

6.1 Summary of Septic Tank Performance Within the Municipality

The total number of septic tank systems in the municipality is 1,474. The tables below provide a quantitative description of the distribution, allotment size, age and type of septic tank systems within the municipality.

Figure 3a Numbers of septic tanks systems across catchments

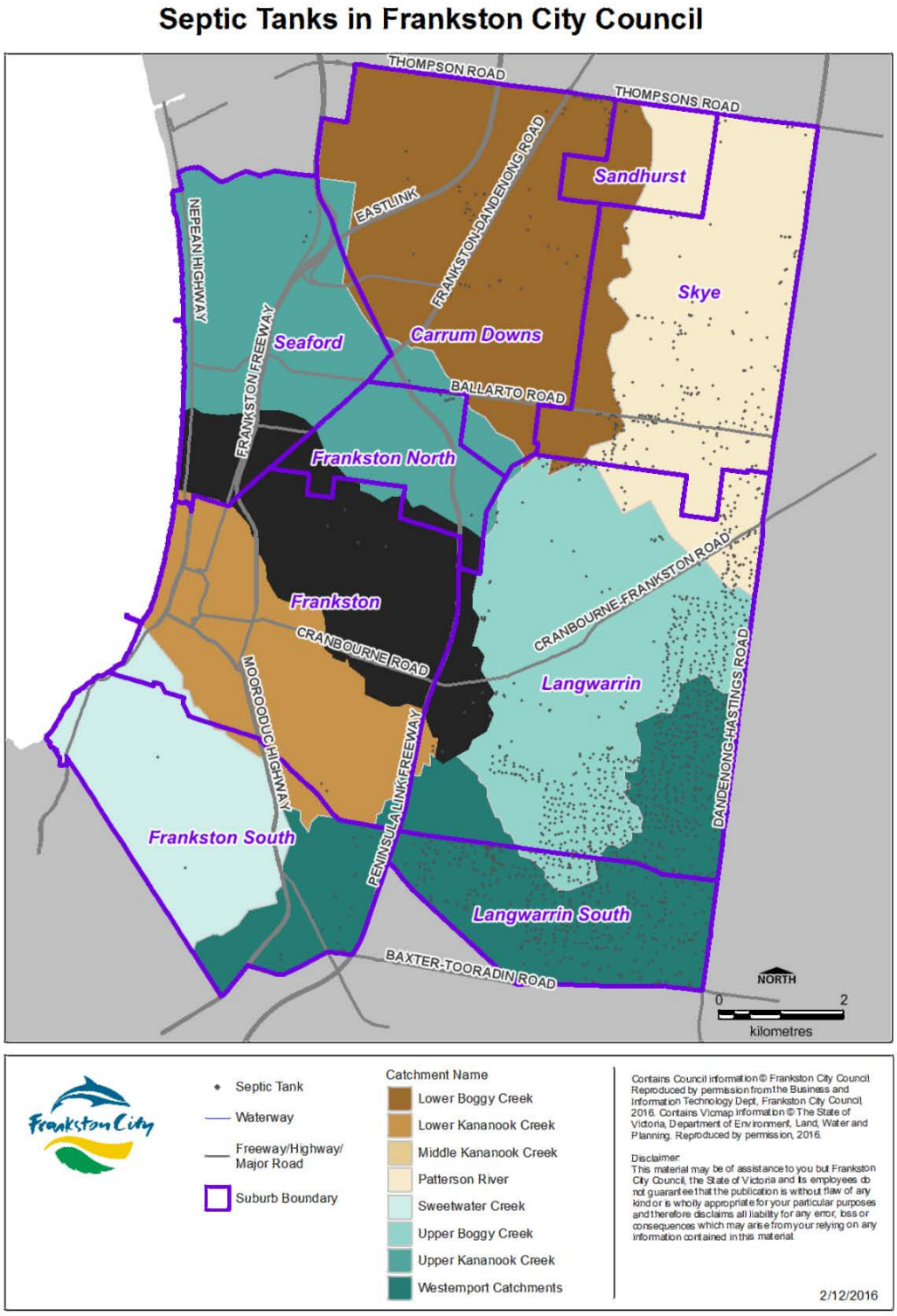


Table 3b Numbers of septic tanks systems in each catchment

Catchment	No. of Septic Systems	No. Offsite Discharges
Westernport	673	2
Patterson River	234	1
Upper Boggy Creek	455	6
Lower Boggy Creek	81	0
Middle Kanaook Creek	11	0
Lower Kananook Creek	4	0
Upper Kananook Creek	14	0
Sweetwater Creek	2	0

The total number of properties with septic tank systems is 1,474 with at least 90 properties having two septic tanks (Properties with two tanks may have more than one dwelling). Most of the systems are located in the Westernport Catchment and Upper Boggy Creek. The two catchments account for over 75% of the systems in the municipality.

Figure 4a Number and size of allotments with septic tank systems

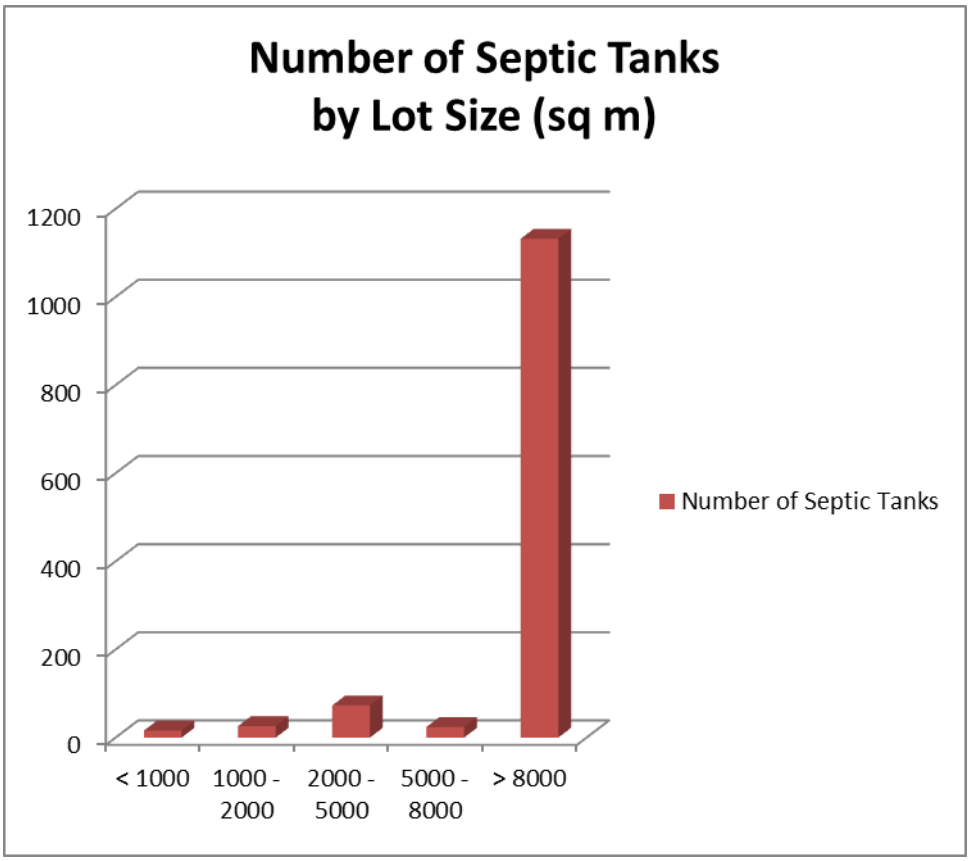


Table 4b Number and size of allotments with septic tank systems

Area	Number of systems
Under 1000m	**16**
1000m^2 to 2000m^2	**26**
2000m^2 to 5000m^2	**73**
5000m^2 to 8000m^2	**24**
Greater then 8000m^2	**1132**
Unclassified	**203**
Total	**1474**

The majority of systems are located on allotments greater than 8000m^2.

Figure 5a Age of septic tank systems

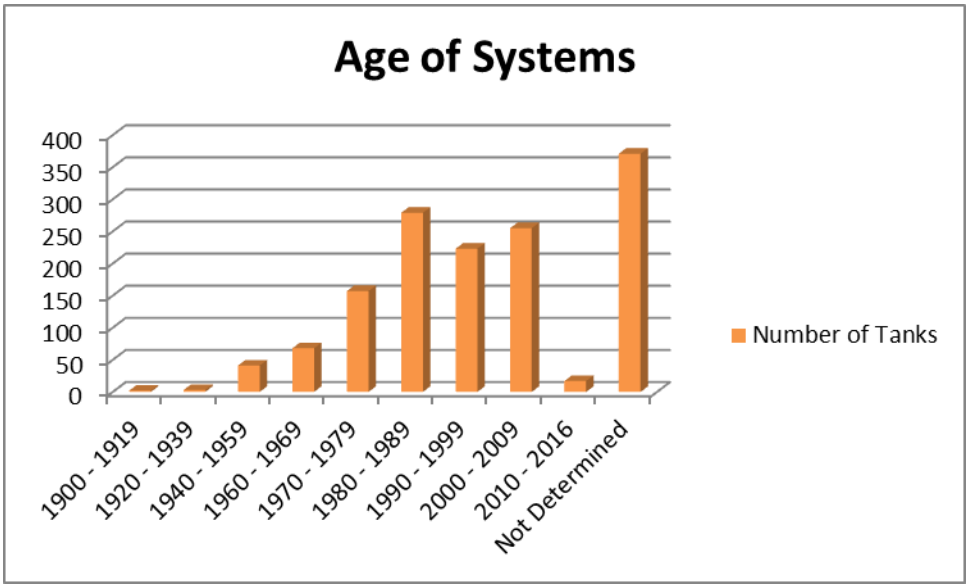


Table 5b Age of septic tank systems

Age of System	Number
1900-1919	2
1920-1939	3
1940-1959	41
1960-1969	68
1970-1979	157
1980-1989	279
1990-1999	223
2000-2009	255
2010-2016	17
Not Determined	429
Total	**1474**

Table 6 Types of septic tank systems in each Catchment

Catchment Name	Minor Description	Count
Lower Boggy Creek	1800 Lt All Purpose Septic Tank	35
Lower Boggy Creek	3200 Lt All Purpose Septic Tank	33
Lower Boggy Creek	Aqua Nova Sewage Treatment System	1
Lower Boggy Creek	Not Determined	6
Lower Boggy Creek	Ozzi Klean Treatment System	1
Lower Boggy Creek	Septech 2000 Sewage Treatment System	1
Lower Boggy Creek	Taylex Sewage Treatment Plant	1
Lower Boggy Creek	Worm Farm	3
Lower Kananook Creek	3200 Lt All Purpose Septic Tank	2
Lower Kananook Creek	Biocycle Sewage Treatment System	2
Middle Kananook Creek	1800 Lt All Purpose Septic Tank	6
Middle Kananook Creek	3200 Lt All Purpose Septic Tank	4
Middle Kananook Creek	Not Determined	1
Patterson River	1800 Lt All Purpose Septic Tank	88
Patterson River	3200 Lt All Purpose Septic Tank	105
Patterson River	Aqua Nova Sewage Treatment System	1
Patterson River	Biocycle Sewage Treatment System	3
Patterson River	Biolytix Treatment System	1
Patterson River	Composting Toilet	1
Patterson River	Not Determined	15
Patterson River	Ozzi Klean Treatment System	2
Patterson River	Septech 2000 Sewage Treatment System	6
Patterson River	ST Envirosep Treatment System	1
Patterson River	ST Worm Farm	1
Patterson River	Taylex Sewage Treatment Plant	5
Sweetwater Creek	1800 Lt All Purpose Septic Tank	1
Sweetwater Creek	3200 Lt All Purpose Septic Tank	1
Upper Boggy Creek	1800 Lt All Purpose Septic Tank	72
Upper Boggy Creek	3200 Lt All Purpose Septic Tank	303
Upper Boggy Creek	Aqua Nova Sewage Treatment System	7
Upper Boggy Creek	Biocycle Sewage Treatment System	13
Upper Boggy Creek	Composting Toilet	1
Upper Boggy Creek	Moderate Priority	1
Upper Boggy Creek	Not Determined	14
Upper Boggy Creek	Septech 2000 Sewage Treatment System	17
Upper Boggy Creek	ST Envirosep Treatment System	1

Upper Boggy Creek	ST Worm Farm	1
Upper Boggy Creek	Taylex Sewage Treatment Plant	21
Upper Boggy Creek	Worm Farm	3
Upper Kananook Creek	3200 Lt All Purpose Septic Tank	11
Upper Kananook Creek	Not Determined	2
Upper Kananook Creek	Septech 2000 Sewage Treatment System	1
Westernport Catchments	1800 Lt All Purpose Septic Tank	103
Westernport Catchments	3200 Lt All Purpose Septic Tank	282
Westernport Catchments	Aqua Nova Sewage Treatment System	39
Westernport Catchments	Biocycle Sewage Treatment System	25
Westernport Catchments	Biolytix Treatment System	2
Westernport Catchments	Composting Toilet	4
Westernport Catchments	Moderate Priority	1
Westernport Catchments	Not Determined	39
Westernport Catchments	Ozzi Klean Treatment System	3
Westernport Catchments	Septech 2000 Sewage Treatment System	82
Westernport Catchments	ST Envirosep Treatment System	7
Westernport Catchments	ST Worm Farm	1
Westernport Catchments	Taylex Sewage Treatment Plant	71
Westernport Catchments	Worm Farm	9

The majority of systems are all waste systems, followed by split systems and treatment plants.

6.2 Receiving 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.

Table 7 Receiving Environmental Values (unsewered areas)

Sweetwater Creek	Sweetwater Creek supports a number of locally and regionally significant values associated with its complex geomorphology, riparian habitat and recreational amenity values. These values reflect the relatively natural state of the main waterway corridor. High groundwater values exist within this subcatchment, reflecting the beneficial uses for potable water identified in the State Environment Protection Policy (SEPP) (Groundwaters of Victoria). The Local and Regional Receiving Environments also have *High* values associated with the Frankston foreshore and Port Phillip Bay.
Westernport Catchment	The Westernport Catchment Includes the areas along the south and eastern periphery of the municipality that ultimately drain to Westernport. The potable water use objectives defined in the SEPP (Groundwaters of Victoria) result in high groundwater values. The local receiving environment of Westernport is considered to have significant environmental values associated with estuarine and coastal environments at the lower end of Watsons Creek. Values of Public Health (Infectious Disease Transmission) and Amenity (odour/mosquito breeding/visual) are of concern due to the number of septic tank systems within this catchment.

Patterson River	The Patterson River subcatchment is located in the North East portion of the municipality and discharges to Eumemmering Creek, which ultimately flows to the Patterson River. The waterways of the subcatchment are characterised by a network of constructed open channels and informal floodplains, flowing through predominantly cleared rural lands. In accordance with this, environmental values, associated with in-stream habitat and riparian condition, tend to be low due to the extensive modification that has occurred. In accordance with the potable water use objective identified in the SEPP (Groundwaters of Victoria), groundwater values are considered to be high.
Lower Boggy Creek	Lower Boggy Creek consists of a series of heavily modified urban waterways that discharge to the upper end of Eel Race Drain and into Upper Kananook Creek. Areas of remnant vegetation upstream of Ballarto Road have been identified as being of State biological and zoological significance. Recreational opportunities associated with Pines Flora and Fauna Reserve contribute to moderate recreational values. The local receiving environment for this subcatchment is Upper Kananook Creek, which has very high environmental values associated with the Seaford Wetlands.
Upper Boggy Creek	Upper Boggy Creek contains significant areas of remnant native vegetation within and adjacent to the waterway corridor. The creek itself is identified as being of Regional Botanical and Zoological significance and is identified within the Environment Significance Overlay of the Frankston Planning Scheme. The Creek's role in providing recreational and visual amenity is somewhat less significant due to limitations in accessibility. However, the intact native flora is considered to present passive recreational opportunities, with recreational amenity being rated as moderate accordingly. The local receiving environment for this subcatchment is Upper Kananook Creek, which has very high values associated with the Seaford Wetlands. Values of Public Health (Infectious Disease Transmission) and Amenity (odour/mosquito breeding/visual) are of concern due to the number of septic tank systems within this catchment.

6.3 Domestic Waste Water Threats

The DWMP needs to assess the potential threats from domestic wastewater, the values of the receiving environments and the final risk assessment, having regard to both. All wastewater generation and/or discharges are seen to be a threat with potential harm to human health or damage to the receiving environment. The table below depicts the generic threats posed by domestic wastewater:

Table 10 Generic Wastewater Threats

Threat	Cause	Key Impacts
Failed systems with off-site Discharge **LOW**	• 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 of the system • Septic tank full • Poor maintenance	• Nutrients • Pathogens • Odour • Visual amenity • Oxygen depleting material • Local land degradation • Pollution of water courses • Pooling of water causing mosquito breeding
Treated off-site effluent Discharge **LOW**	• Permitted system	• Pollution of water courses • Local visual amenity
Treated on-site effluent Discharge **HIGH**	• Permitted system	• Local visual amenity • Pollution of groundwater
Untreated off-site sullage (grey water) discharge **LOW**	• Poorly maintained system with sand filter not functioning, sand filter bypassed to stormwater, septic tank full	• Nutrients & pathogens • Odour • Visual amenity • Oxygen depleting material

	• Permitted system	• Local land degradation • Pollution of water courses
Ineffective regulation **HIGH**	• Failure to comply with permit conditions • Ineffective database • Non-connection to sewer • Unclear regulatory responsibilities	• Liability • Increased incidence of preventable pollution and environmental degradation • Increased risk to public health

For the purposes of this DWMP the values outlined in the Urban Stormwater Management Plan have been adopted.

7.0 Key findings

The major risk posed by septic tanks in Frankston City is failing or poorly maintained on-site systems located in the Westernport, Upper Boggy Creek, Lower Boggy Creek and Patterson River catchments.

- Over 95% of systems within the municipality are located within the Westernport, Patterson River, Upper Boggy Creek and Lower Boggy Creek catchment areas. Priority must be given to the monitoring of septic tank systems within these catchments.

- It is estimated that at least 25% of the systems within the municipality have already reached or exceeded their designed life. Significant numbers of systems may fail in the coming years, and a domestic waste water maintenance program is essential if failed septic systems are to be detected and rectified in a timely manner.

- The majority of systems are located on allotments greater than 8,000m2. This indicates that the systems that exist within the municipality are here to stay for the long term as the provision of reticulated sewer to these properties is unlikely.

- It is evident that a very low rate of compliance with permit conditions for system maintenance is achieved without Council intervention and monitoring. Very few properties are complying with the quarterly maintenance and desludging of their septic tank systems.

- A major cause of inadequate maintenance is the owner's lack of knowledge on how to care for and maintain their septic tank system. The provision of information is critical in achieving improved maintenance of existing septic tank systems.

8.0 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 continue to develop an accurate and complete septic tank system profile of the municipality integrated with Council's Graphical Information System (GIS).

2. *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.

3. *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.

4. *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.

5. *Review*

   An annual review of the DWMP management actions will be required to ensure they remain consistent with any State Government Policy and/or legislative changes.

9.0 Management Strategies and Actions Plans

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 risk posed by ineffective septic tanks systems

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

- ensure that strategic and statutory planning tools are consistent with the SEPP;
- improve the management of urban stormwater and domestic wastewater (waste from septic tanks);
- consider the capability of land, 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 through a maintenance program

Current wastewater management within Frankston City indicates that Council is undertaking a monitoring role of septic tank systems in addition to conducting permitting activities and complaint investigation.

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

- the ongoing collection of appropriate data through a monitoring program, maintenance of its current information management system, and analysis of this information
- review and development of operating policies and procedures
- the development of and access to information by owners of septic tank systems and other stakeholders

The major risk posed by septic tanks in the municipality is failing or poorly maintained on-site systems located in the Westernport, Upper Boggy Creek, Lower Boggy Creek and Patterson River catchments.

Management Action Plans

Action	Action Steps	Team/Partners	Responsible Person	Due Date:
1. Strategy: ***Community information and education on septic tank maintenance and management*** **Objectives:** • to reduce loading on septic tank systems • to increase owners' awareness of the importance of managing septic tank systems • to improve compliance with permit conditions • minimise the volume of wastewater generated from septic tank systems	a) Provide information to owners/occupiers of unsewered properties on water saving devices	Environmental Health Unit	Coordinator Environmental Health	30 June 2017
	b) Provide all septic tank owners with a Permit to Use the Septic Tank System including all conditions of the system and its use.	Environmental Health Unit	Coordinator Environmental Health	30 June 2017
	c) Provide all septic tank owners with a Septic Tank Fact sheet outlining the maintenance requirements and facts that will ensure the efficient use of the system.	Environmental Health Unit	Coordinator Environmental Health	30 June 2017
2. Strategy: ***Information and Data Collection on the Environmental Impacts of Septic Tank Systems on Receiving Environments*** **Objectives:** • To monitor and analyse the effectiveness of wastewater management strategies • To develop a profile of current values of ground water quality and surface water quality within the municipality • To minimise the impact of septic tank systems on the receiving environment	a) Initiate discussions with other authorities (Melbourne Water, EPA, South East Water) on testing for human pollution in Watsons Creek and Kananook Creek	Environmental Health Unit	Coordinator Environmental Health	30 June 2018
	b) To undertake (with others) the collection and collation of surface water and ground water quality data	Environmental Health Unit	Coordinator Environmental Health	30 June 2018
	c) Maintain a data base of nuisance complaints resulting from wastewater systems within the municipality	Environmental Health Unit	Coordinator Environmental Health	Ongoing
	d) Continue to develop and maintain Council's Pathway and GIS data base of septic tank systems within the municipality	Environmental Health Unit	Coordinator Environmental Health	Ongoing

3. Strategy*:* ***Development and review of operational policies and procedure*** **Objectives:** • To ensure Council is meeting its Statutory obligations in the process of issuing Septic Tank Permits • To ensure consistency in the application of assessment criteria and enforcement of permit conditions	a) Review operating procedures with internal service units (planning, building) on planning permits (sub-divisions, infill development) b) Exploration of common protocols with neighbouring councils c) Review the Unit's operational procedures in RIAMS	Environmental Health Unit Environmental Health Unit Environmental Health Unit	Coordinator Environmental Health Coordinator Environmental Health Coordinator Environmental Health	30 June 2017 30 June 2017 30 June 2017
4. Strategy: ***Development a domestic waste water maintenance program for non-sewered areas of the municipality*** **Objectives:** • To manage council's statutory duty in relation to enforcement activities • To minimise the impacts from domestic waste water on the environment and protect public health • To comply with legislative expectations of government	a) Develop a domestic waste water maintenance program for all septic tank properties, including enforcement tools/options for those who do not comply. b) Implement the domestic waste water maintenance program and follow up all non-complying un-sewered properties.	Environmental Health Unit IT Department Environmental Health Unit	Coordinator Environmental Health Senior Environmental Health Officer Environmental Health Officers Business Support Officers	30 June 2017 1 July 2017

Appendices

Appendix 1

Terms of Reference

The Advisory Committee for the municipality's Domestic Wastewater Management Plan will consist of representatives from the Frankston City Council and other agencies including:

Committee Members

Leonie Reints	Manager Community Safety
Claire Benzie	Coordinator Environmental Health
Sandra Macleod	Senior Environmental Health Officer
Sam Hannon	EPA – Manager Operations Strategy
Emma James	GIS Mobility Officer
Rachael Weaver	Coordinator Resource Efficiency
Noel Skehan	Senior Drainage Engineer
Vanessa Herde	Subdivisions Officer

The committee will advise and assist in the implementation and review the plan.

Functions

The objectives and responsibilities of the Committee are:

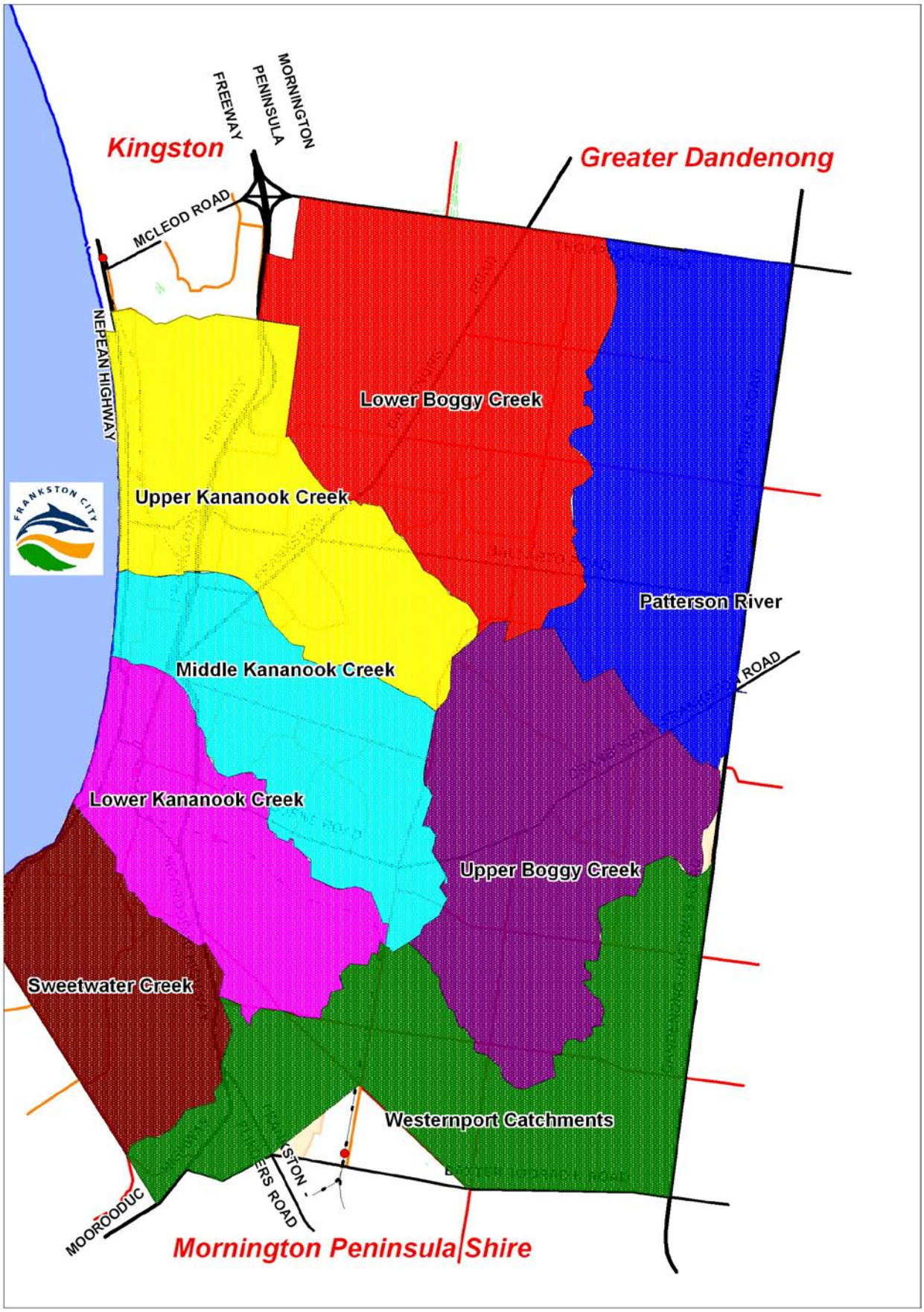
1. To provide information and data relevant to the development of the DWMP;

2. To advise on the development, implementation and review stages of the DWMP;

3. To assist and liaise with the appointed consultants and provide specialist advice; and

4. To identify relevant agencies and their roles in implementing the Domestic Wastewater Management Plan.

Appendix 2- Catchment Maps



Sweetwater Creek Catchment

Frankston City

Septic Tank

Waterway

Freeway/Highway/Major Road

Catchment Boundary

2/12/2016

Upper Kananook Creek Catchment

Septic Tank

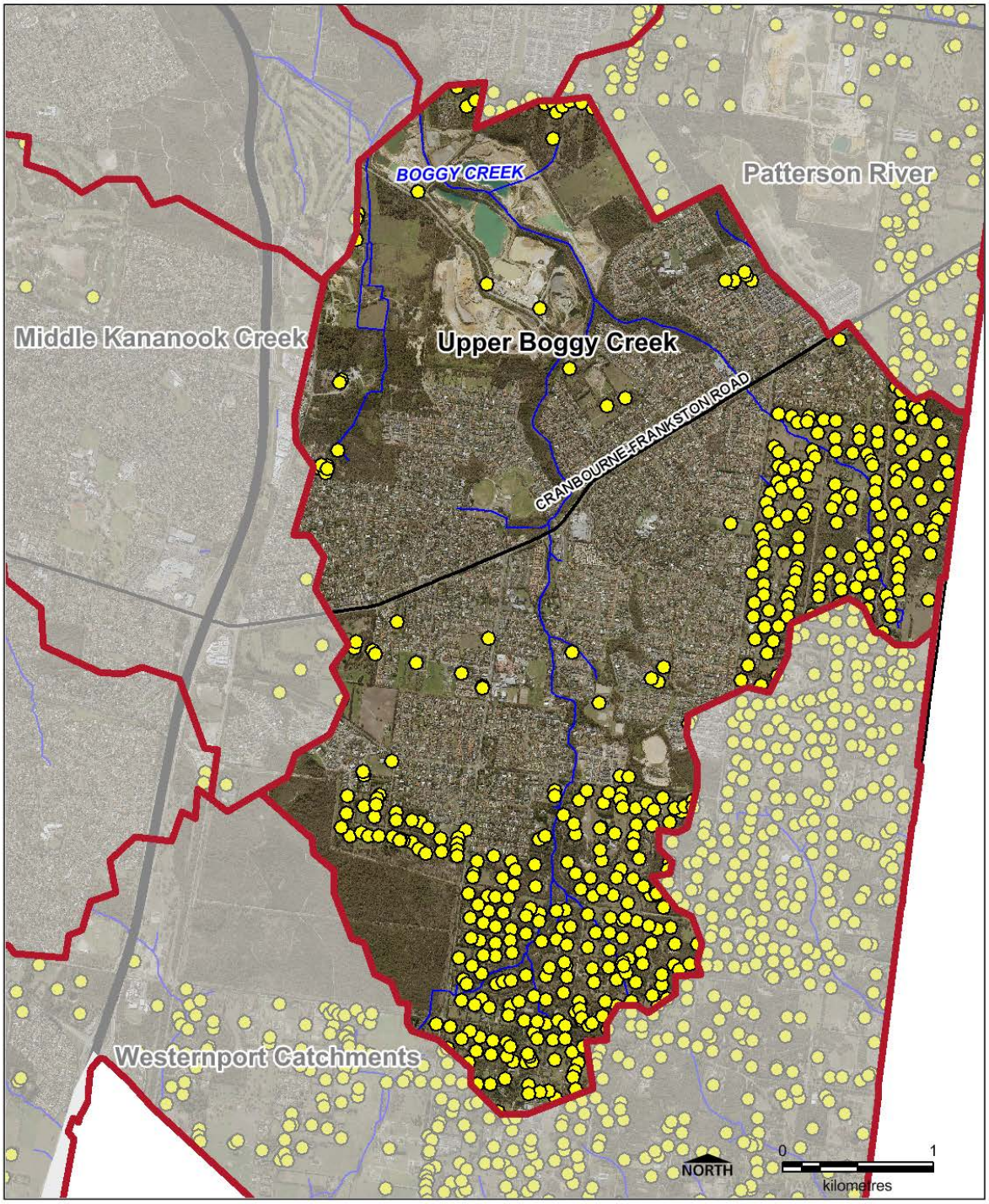
Waterway

Freeway/Highway/Major Road

Catchment Boundary

21/11/2016

Upper Boggy Creek Catchment



Septic Tank

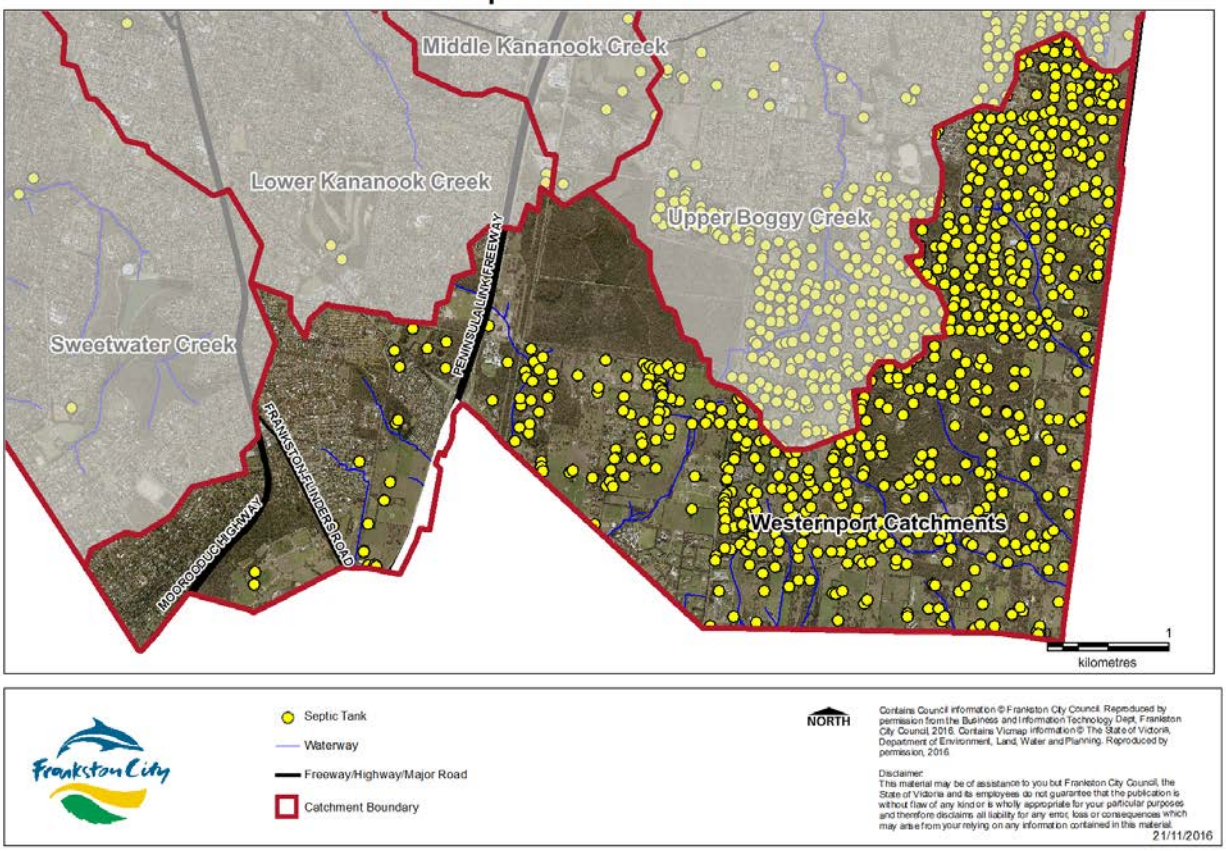
Waterway

Freeway/Highway/Major Road

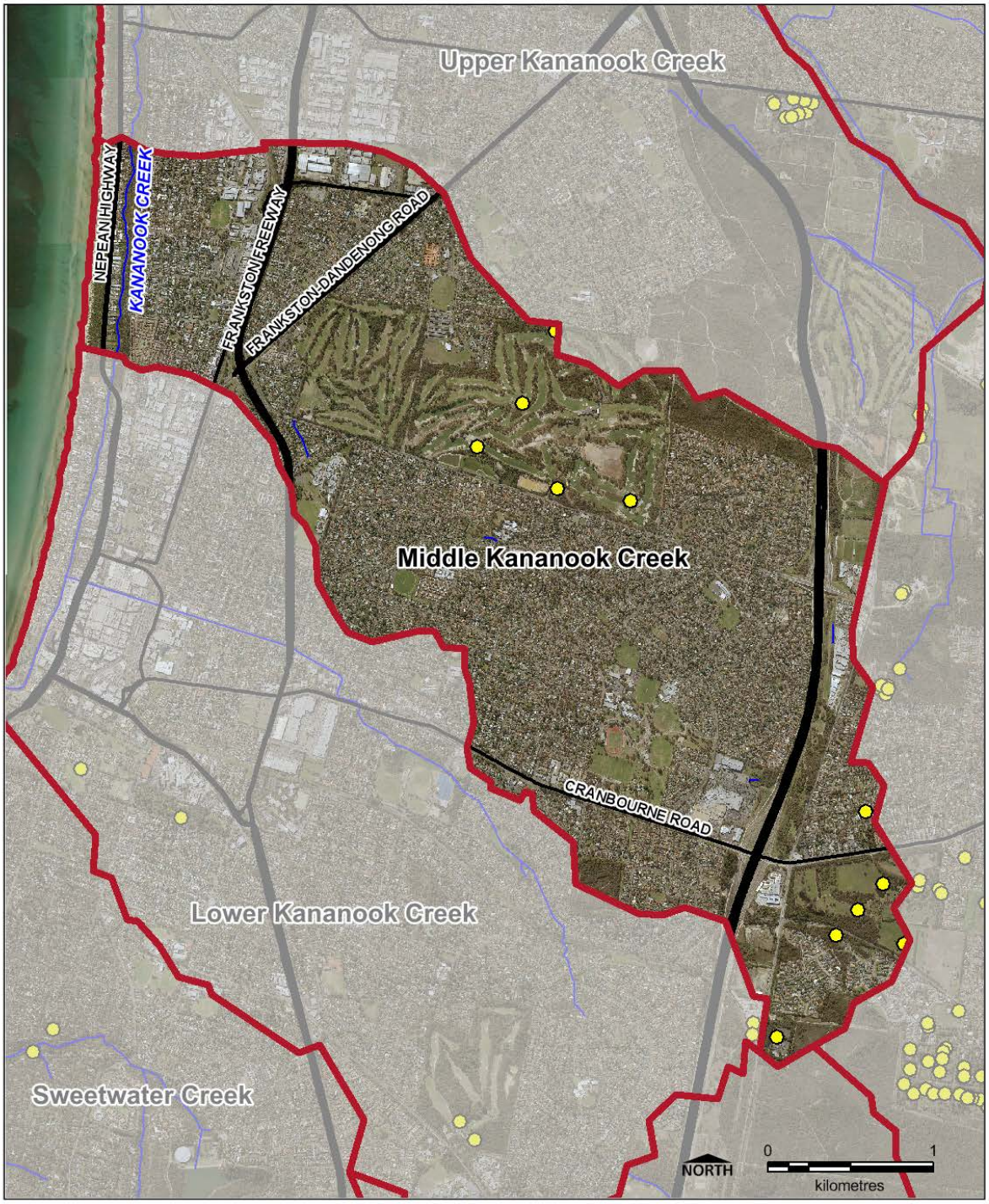
Catchment Boundary

21/11/2016

Westernport Catchment



Middle Kananook Creek Catchment



Septic Tank

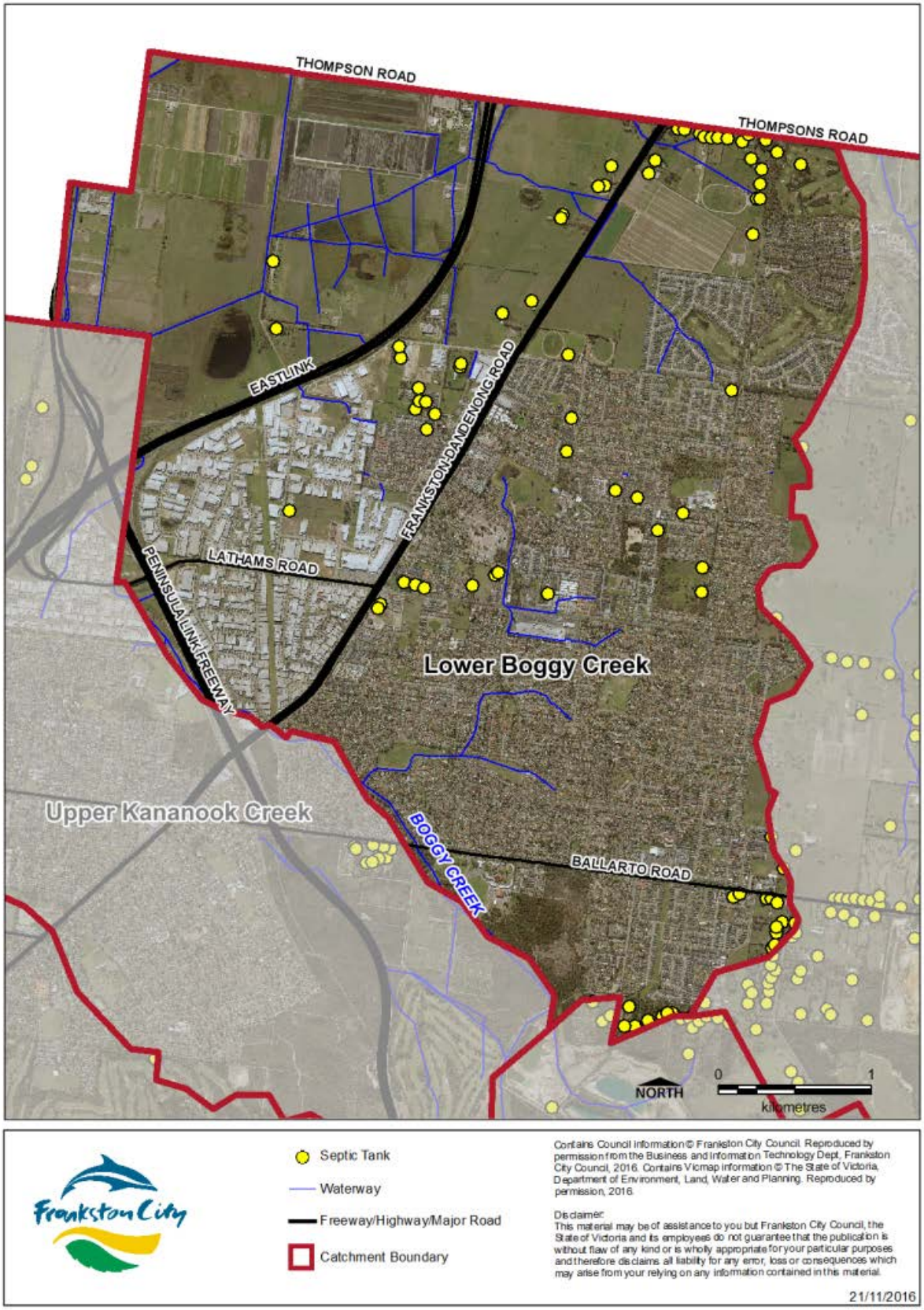
Waterway

Freeway/Highway/Major Road

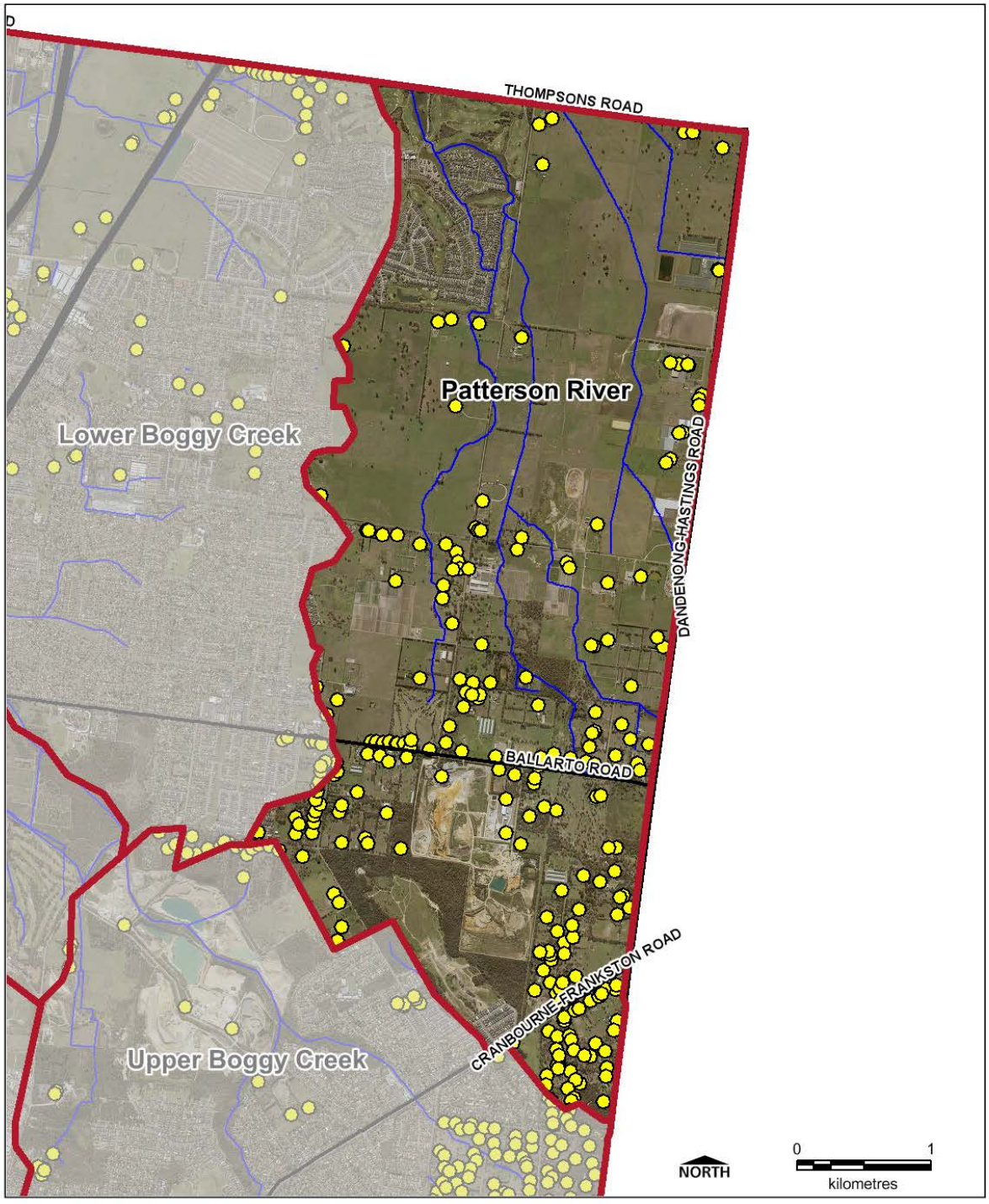
Catchment Boundary

21/11/2016

Lower Boggy Creek Catchment



Patterson River Catchment



Septic Tank

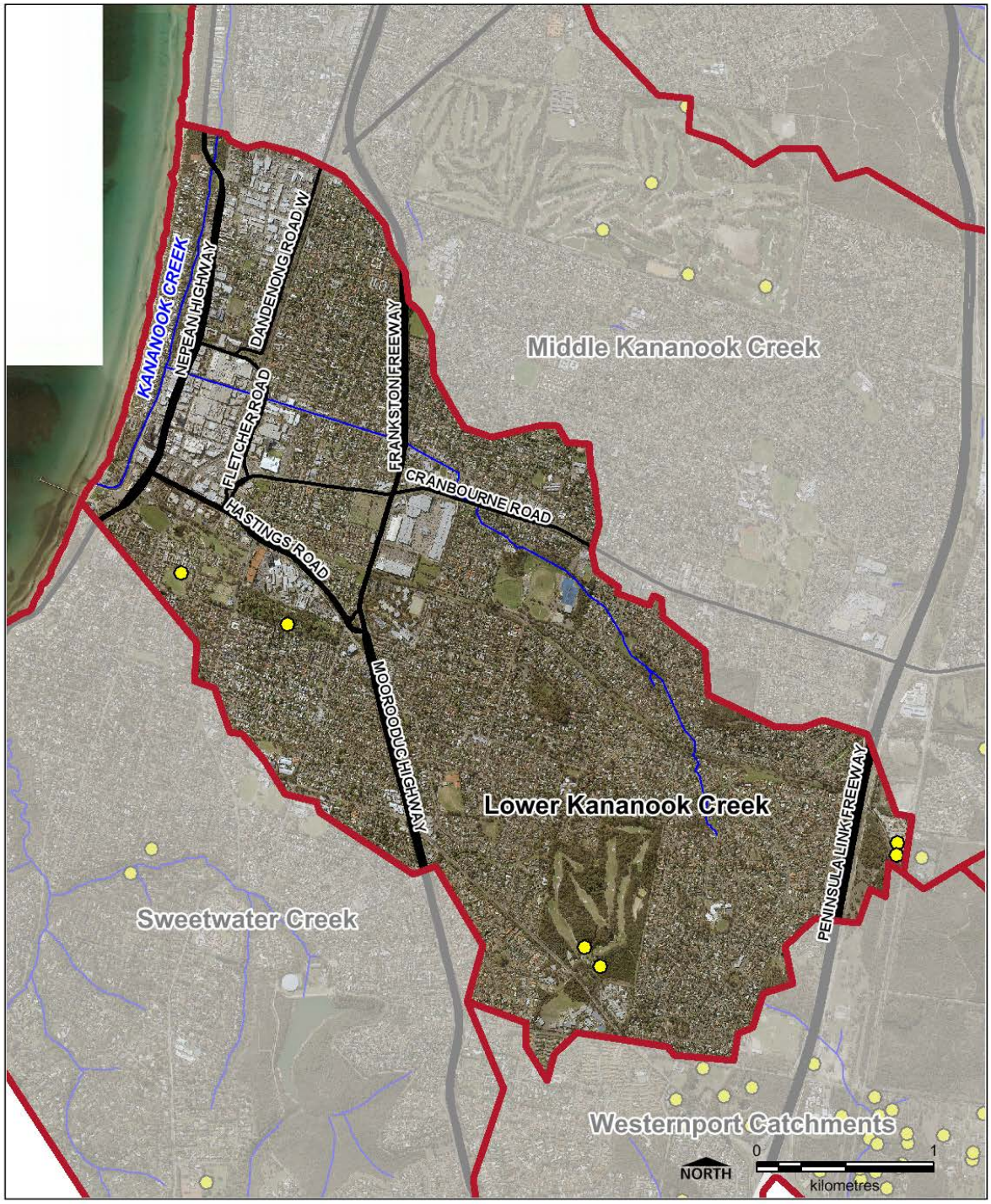
Waterway

Freeway/Highway/Major Road

Catchment Boundary

21/11/2016

Lower Kananook Creek Catchment



Septic Tank

Waterway

Freeway/Highway/Major Road

Catchment Boundary

21/11/2016

Glossary

Desludging: The removal of sludge and sediment from the wastewater treatment system

Domestic Wastewater: wastewater arising from a domestic dwelling Domestic wastewater can comprise of blackwater (toilet waste) or greywater (sullage waste from bathrooms, laundry and kitchen appliances), or a combination of both

DWMP: Domestic Wastewater Management Plan

Effluent: Organic waste products produced from a domestic residence and within the wastewater going to and coming from the septic tank

EPA: Environment Protection Authority

GIS: Geographic Information System

Greywater: Domestic wastewater that does not contain toilet waste. Also known as sullage. Nillumbik Shire Council Domestic Wastewater Management Plan 40

Land Capability Assessment: A method used to assess the capability of land to manage on-site wastewater disposal, which recommends whether effluent can be adequately treated and retained on site. The process is outlined in detail in EPA publication 746

MAV: Municipal Association of Victoria

MWC: Melbourne Water Corporation

Percolation: The filtration of liquid through soil

Permeability: The rate at which water moves through a soil profile. Fast permeability rates will not allow for adequate remediation, slow rates may give rise to soil waterlogging

SEPP: State Environment Protection Policy

Septic System: A system for the bacterial, biological, chemical or physical treatment of sewage, includes all tanks, beds, sewers, drains, pipes, fittings, appliances and land used in the connection with the system

Sewage: Any waste containing human excreta or domestic wastewater. Also called blackwater

Sewerage: The infrastructure system (drains etc) used to carry, treat and dispose of sewage

SMP: Stormwater Management Plan

Sullage: See greywater. Household greywater that does not contain toilet waste, but may still contain many of the harmful pathogens, nutrients and other chemicals contained in blackwater waste, presenting a similar hazard

YVW: Yarra Valley Water

WISS: Water Industry System Solutions

References

MAV Model Municipal Domestic Wastewater Management Plan, October 2001

MAV Municipal Domestic Wastewater Management Planning, Issues & Options Paper, February 2002

MAV Domestic Wastewater Management, a planning guide for Local Government

Nillumbik Stormwater Management Plan, January 2002

Colac Otway Shire Wastewater Management Strategy, February 2002

EPA Publication 812, Re-use Options for Household Wastewater

Septic Tank Code of Practice 1996

Septic Tank Code of Practice 2003

EPA Publication 629, Development Approvals in Sewered & Unsewered Areas 1998

SEPP (Waters of Victoria), amended June 2003

Nillumbik Shire Council Domestic Wastewater Management Plan 39

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Project Officer – Simon Berton, Infocus Management Group