



1. Executive summary



1.1 About sewerage and backlog management

In Victoria, sewage is treated either through reticulated systems or individual on-site (non-reticulated) systems. A reticulated system comprises a network of collection pipes, sewer mains and pumping stations that transports wastewater to a treatment plant. On-site systems stand alone, and all waste should be treated and contained on-site, within the property boundaries. The septic tank is the most common type of on-site system.

Septic tanks have been extensively used since the 1950s, when they were an approved method of sewage disposal for domestic properties. In 1973, a planning directive from the then Melbourne and Metropolitan Board of Works, required all new subdivisions and developments to contain their waste on-site or connect to sewer. At this time, the number of backlog¹ properties in Melbourne peaked at 173 000. Across Victoria, around 250 000 septic tanks are currently in use.

Septic tanks are an acceptable sewage solution provided the wastewater is contained and disposed of effectively on-site. If it seeps from the property it can pollute surrounding soils, waterways or groundwater, exposing the community to environmental, public health and amenity risks.

Since the 1970s, successive governments have established backlog sewerage programs to address these risks by providing affected properties with access to a reticulated sewerage or other appropriate wastewater system. Today, 2 such programs are in place: one for metropolitan Melbourne and the other for regional Victoria. The metropolitan program is managed by South East Water Ltd (SEW) and Yarra Valley Water Ltd (YVW). City West Water Ltd (CWW) does not have a program as its backlog was completed in 1998. The Department of Sustainability and Environment (DSE) manages the regional program. The first regional program, the New Towns Initiative, was established in July 2000. This program was replaced by the Country Towns Water Supply and Sewerage Program, which commenced in July 2005.

¹ At this time, a backlog property was defined as being zoned “residential C” under the planning scheme and could not contain its waste on-site, i.e. the traditional quarter acre block.

In addition to regulating the installation and operation of septic tanks, local government, in consultation with the Environment Protection Authority (EPA), is responsible for identifying areas where septic tanks are failing. These areas should be highlighted in a domestic wastewater management plan. If the preferred sewage treatment option is reticulated sewerage, the relevant water companies (water authorities² in rural areas), must prepare a sewerage management plan. The water company or authority is then responsible for providing and managing sewerage infrastructure. It should be noted that a reticulated sewerage system can range from augmentation of an existing reticulated system, to construction of a stand-alone sewerage system, for example in small, isolated rural towns, to connecting up the septic tanks of a few allotments and having sewage treated collectively.

For priority areas, the new sewerage infrastructure is funded by borrowings serviced by customer tariffs. Property owners also pay a capped contribution to the infrastructure costs. This contribution represents anywhere from 3 to 10 per cent of infrastructure costs depending on the cost of the scheme. They also have to meet the cost of connecting their property to the new system. The government contributes to the cost of the new infrastructure (around 24 per cent), but only for rural properties.

In October 2002, the government committed to substantially reducing the time frames for providing reticulated sewerage to metropolitan backlog areas. In 2003, the government gazetted the revised State environment protection policy, *Waters of Victoria*, which outlined the various responsibilities of different agencies in relation to on-site domestic wastewater management and sewerage infrastructure planning. A further commitment was given in June 2004 to bring reticulated sewerage to metropolitan and rural backlog areas and improve on-site treatment technology.

Currently, an estimated 42 000 properties are included in the metropolitan backlog program, with cost estimates in the order of \$550 million for the provision of new infrastructure and a 40-year³ time frame. The equivalent numbers, costs and time frames for rural properties is unknown.

² Water authorities refer to all regional urban water authorities, plus those rural water authorities with urban responsibilities.

³ In August 2005, the minister requested that SEW prepare a business case to complete its backlog program within 20 years, and to include this proposal in its 2008 water plan.

1.2 Are sewerage backlog programs effective?

It has not been possible to conclude on the extent to which the metropolitan and regional sewerage backlog programs have been effective in reducing the environmental, public health and amenity risks caused by failing septic tanks. As the number of properties with failing septic tanks has not been accurately determined, it is not possible to identify whether, over time, backlog numbers (and therefore risks) are decreasing or increasing. At best, backlog numbers (and risks) might be reducing, but over an extended time frame. At worst, the size of the backlog (and risks) could be larger than estimated.

Nevertheless, it was clear that the government's commitment in October 2002 to substantially reduce the time lines for providing sewerage reticulation systems in metropolitan areas will still take some time to achieve. In rural areas, no time lines have been established. Thus, across metropolitan Melbourne and rural Victoria, parts of the community continue to be exposed to environmental, public health and amenity risks caused by failing septic tanks. Some communities may be exposed for up to 40 years (subject to adoption of SEW's 2008 water plan) and, except for priority country towns, for regional Victoria an unknown period of time.

There are a number of aspects relating to the management of the backlog programs that adversely impact on their effectiveness, namely:

- As most local governments had incomplete and/or inaccurate records of the location, age and condition of septic tanks in use, backlog numbers were mostly best guesses or estimated, but without a reliable basis.
- Statewide data sets, with land capability and catchment health information, which can help to identify high risk areas for septic tanks, are not used by DSE, EPA or most local governments.
- Since 2003, SEPP required local governments to prepare domestic wastewater management plans. To date, 47 draft plans have been submitted, albeit the plans were expected to improve the identification of septic tank risks.
- Local government use visual assessment to monitor the impact of septic tanks. However, it is not necessarily cost-effective to then undertake further chemical and biological monitoring.

- The risks associated with failing septic tanks are well documented. However, different criteria and weightings were used by DSE, DHS, EPA, water companies and authorities, and local government to prioritise backlog properties. The highest risk backlog properties are not always treated first. Water companies and authorities sometimes take an economically pragmatic approach and tend to sewer areas in logical sequence as infrastructure is progressively built. In the interim, no attempt is made to mitigate the risks posed by failing septic tanks.
- The potential risks of failing septic tanks are not always adequately managed by local government. Local government did not always fulfil its legislative responsibilities to ensure that tanks were properly installed, used and maintained. Failings within the current septic tank legislative framework, and its interpretation, have compounded this problem. Local governments were reactive rather than proactive in requiring property owners to address failing septic tanks. Many old (pre-1988) septic tank permits do not have relevant permit conditions, which has prevented local government officers from taking enforcement action.
- The inconsistent application of planning controls by local governments has resulted in a number of property developments being approved even though it is likely the septic tanks will fail and increase the size of the backlog.

Elimination of the backlog, and the time frame for this, is dependent on the level of investment in the backlog programs. It also depends on the financial viability of water companies and water authorities to meet the costs of constructing a reticulated system (when this is the preferred solution) and then the willingness of property owners to connect. Similarly, alternative sewerage solutions and their management also need to be financially viable for the water companies and authorities. However, DSE does not set targets or have plans or guidelines for backlog reduction, nor for the required amount of investment for backlog across the state.

Over the past 10 years, the metropolitan water companies have consistently spent less on eliminating the metropolitan backlog than they had committed, while at the same time the backlog has grown. If this trend and expenditure levels continue, it will take YVW and SEW more than 40 years to each eliminate their backlogs.

In regional Victoria, both the size of the backlog and the amount that was actually spent on it by water authorities are not readily identifiable. Thus, the level of investment required to eliminate backlog, and the time frame, is not known across the state.

The extent to which the estimated time frame for eliminating the backlog meets community expectations has not been determined by DSE, water companies or water authorities. Our survey of 600 backlog property owners identified that they were generally not satisfied with the time frames for providing reticulated sewerage to their properties.

Even where a reticulated system has been made available, in metropolitan areas it can take up to 10 years until a high proportion of property owners connect. Over the 10-year period to June 2005, neither water company had a 100 per cent result (YVW, 47 per cent; SEW, 76 per cent). Connection rates for regional areas are unknown. Our survey identified cost as the main barrier for connection, but this barrier was not being actively addressed. DSE, through DHS, allocated \$5.6 million between July 2000 and October 2005 to assist property owners connect to sewerage.

Therefore, much needs to be done by DSE, local government, water companies and water authorities to improve the effectiveness of backlog sewerage programs. In addition to improving the management of existing risks caused by septic tanks, the government's policy commitments need to be supported with a statewide plan, including targets and investment levels that match time lines for eliminating backlog. Similarly, property owners have an obligation to manage their septic tanks. The plan also needs to be balanced against community expectations. Water companies and water authorities, through the Essential Services Commission (ESC), also need to be more accountable for meeting these commitments.

Water companies and authorities need to provide more information to property owners about alternatives to large-scale reticulated sewerage systems. In particular, they need to promote the environmental and financial benefits of adopting alternate sewage solutions, such as upgrading and replacing failing septic tanks.

While we acknowledge that governments face competing priorities for resources, the progress of backlog programs to date needs to be balanced against the community's tolerance to being exposed to the risks of failing septic tanks.

Recommendations

The audit identified a clear need to improve backlog planning and prioritisation processes, the legislation regulating septic tank management, and reporting and accountability mechanisms. The recommendations are grouped to reflect these 3 themes which have been covered throughout the audit report.

Backlog planning and prioritisation

- That DSE, in conjunction with all relevant stakeholders - including local government, catchment management authorities (CMAs), water companies and water authorities - develop and implement a statewide backlog plan, which articulates with other relevant environmental planning processes (see Part 4, Recommendation 10).
- That DSE, the EPA and local government use available technical data sets such as land capability assessments, environmental monitoring and cadastre (lot size) information to identify and monitor the impact of failing septic tanks across the state (see Part 3, Recommendation 1).
- That DSE, in consultation with CMAs, the EPA, DHS, local government, water companies and water authorities, establishes a mechanism to allow all stakeholders ready access to technical information, such as land capability and environmental monitoring data, to improve risk identification and monitoring (see Part 3, Recommendation 2).
- That DSE, in consultation with the EPA, local government, CMAs, water companies, water authorities and DHS, develop an agreed method (risk criteria, level of consultation, data sources) for prioritising backlog schemes consistently across the state (see Part 3, Recommendation 3).

Legislative reform

- That DSE, in conjunction with the EPA and DHS, and in consultation with local government, review the current septic tank regulatory framework, including related legislation, policy and guidance, to clarify roles and responsibilities and enforcement powers for local government, water authorities and water companies (see Part 3, Recommendation 4).
- That the EPA, in consultation with local government and DSE, develop a standard set of septic tank permit conditions, ensure that they are applied consistently across the state and that enforcement powers exist to address non-compliance issues (see Part 3, Recommendation 5).
- That local governments ensure that property owners and/or tenants understand that they have an existing septic tank system and that the owner has specific maintenance responsibilities for this system (see Part 3, Recommendation 6).

- That DSE, in consultation with the Department for Victorian Communities, seek a definitive interpretation of whether local government is empowered under the *Local Government Act 1989* to collect levies for septic tank management (see Part 3, Recommendation 7).
- That the EPA, in consultation with local government, strengthens statutory requirements for local government to complete domestic wastewater management plans by including an approval mechanism, periodic reviews and penalties for non-compliance (see Part 3, Recommendation 8).
- That local governments reassesses the resourcing levels needed to fulfil their legislative responsibilities for septic tanks (see Part 3, Recommendation 9).
- That the EPA seeks to establish a suitable mechanism to assure the quality of land capability assessments (see Part 4, Recommendation 11).
- That DSE reviews the *Water Act 1989* and the *Water Industry Act 1994* to ensure that this legislation provides a consistent operating environment for backlog sewerage provision across metropolitan and regional areas (see Part 4, Recommendation 12).
- That water companies and water authorities ensure that in all but exceptional cases property owners are connected to new sewerage infrastructure as required by the State environment protection policy, *Waters of Victoria* (see Part 4, Recommendation 13).

Reporting and monitoring

- That DSE, in consultation with the EPA, DHS, local government, water companies and water authorities, develop a statewide approach for the collection of information about septic tanks so that future backlog planning and monitoring is based on reliable information (see Part 4, Recommendation 14).
- That local government (in accordance with SEPP), the EPA, water companies and water authorities, undertake a comprehensive review of backlog across the state to enable DSE to accurately quantify backlog property numbers, identify locations and the agency responsible for completing particular backlog schemes (see Part 4, Recommendation 15).
- That DSE and the ESC establish backlog reporting requirements for water companies and water authorities and periodically monitor results, including outcomes, to ensure that these agencies are meeting their backlog commitments and identify if government policy objectives are being achieved (see Part 4, Recommendation 16).

Agency responses

This report covered a range of agencies including departments, local governments, water companies and water authorities. Their overall responses, where provided, have been included below and their detailed responses are set out in Appendix B of this report. Overall, agencies were supportive of the report and the recommendations.

RESPONSE provided by Secretary, Department of Human Services

DHS does not have any direct regulatory responsibility for septic tanks and, therefore, is not in a position to confirm all the material underlying the report, it has an ongoing interest in their application and operation from a public health perspective.

DHS agrees with the thrust of the report, and notes the recommendations involving consultation with DHS in order to assist in managing the risk to the community and environment.

RESPONSE provided by Acting Secretary, Department of Sustainability and Environment

I note the overall direction of the recommendations of the report in relation to legislative reform, and improving reporting and accountability processes. I have concerns about some of the recommendations (refer Appendix B).

As indicated to your Office previously, the State environment protection policy, Waters of Victoria, 2003, provides the policy framework for the management of septic tanks in the state and has guided the departmental processes. Your report does not sufficiently recognise this policy or evaluate performance against this policy.

The department has already taken steps to improve the management of septic tanks, including convening a forum in March this year which brought together a range of stakeholders to examine issues associated with managing septic tanks in the Yarra catchment and to identify options for improvement.

DSE will continue to work with key stakeholders to implement a strategic approach to managing septic tanks in Victoria, which includes an effective legislative framework, sound information management practices, clearly identifies roles and responsibilities, develops appropriate capacities and capabilities, and includes accountability and governance arrangements.

RESPONSE provided by Chairman, Environment Protection Authority

The EPA has welcomed the opportunity to be involved in this process, and believes such an audit is timely and appropriate to assist in dealing with this important environmental and public health issue across the state. In recent times, the EPA, in consultation with other stakeholders, has been looking at ways to address this very issue and I note that much of what is being recommended within the performance audit reflects the proposed approaches being developed by the EPA and others.

In general, the EPA believes the performance audit is a fair and reasonable reflection of the current situation with respect to on-site domestic wastewater management and provision of backlog across Victoria.

In particular, the EPA supports the recommendation of the need for legislative review. The EPA, in conjunction with the Department of Sustainability and Environment, and in consultation with other stakeholder agencies/ organisations, is currently working towards putting a position to the Minister for Water and the Environment towards this end.

The EPA's detailed comments are included in Appendix B.

RESPONSE provided by Chief Executive Officer, Barwon Region Water Authority

Barwon Water accepts all the conclusions reached in the report. On balance, the report appears to be largely fair and balanced. However, the report does not make a distinction between water authorities that have a sewerage backlog in their declared areas and those that do not. This would avoid the perception that water authorities such as Barwon Water are not performing adequately in this area.

RESPONSE provided by Chief Executive Officer, Barwon Region Water Authority - continued

There are some areas of the report that Barwon Water questions, these are:

- *The executive summary states that “much needs to be done by ... water authorities to improve the effectiveness of backlog sewerage programs”. This statement could be interpreted to apply to all water authorities. Barwon Water would like to reiterate that it does not have a backlog sewerage program within its sewerage districts (declared areas). There are some pockets within declared areas that are not seweraged but Barwon Water is not aware of any related public health or environmental issues in these areas. As part of the Country Towns Water Supply and Sewerage Program, Barwon Water is working with local government and other government agencies to investigate providing appropriate sewerage schemes to a small number of rural communities. These communities have been identified by local government as having public health or environmental risks substantial enough to warrant these investigations. Barwon Water, therefore, believes it is meeting its backlog sewerage program responsibilities fully.*
- *Barwon Water strongly objects to the assertion in section 4.3.2, Conclusion, that “the differentiation between declared sewerage areas and others is an historical legacy and may no longer serves a purpose”. While the funding inequities findings related to declared sewerage areas are noted, Barwon Water believes removing declared sewerage districts would create an impossible situation where any out of sequence development may require servicing despite technical and funding limitations.*

RESPONSE provided by Managing Director, City West Water Limited

City West Water has thoroughly reviewed the report and considers that from City West Water’s perspective, and more generally, the report provides a fair and accurate account of the nature and extent of the septic tank problem, as well as the roles and responsibilities of the various parties involved (or not involved) in the overall process of planning, regulating, managing, operating and decommissioning of septic tanks.

RESPONSE provided by Chief Executive Officer, Gippsland Region Water Authority

Gippsland Water has reviewed the report and generally believes the report is fair and balanced. However, we have a few concerns being:

- *in planning to address backlog areas, water authorities need to be aware of potential future developments to ensure an economic and practical outcome*
- *the definition of backlog area is too broad and should include that the backlog areas are within townships with wastewater reticulated services. Townships with no wastewater services should be addressed under the Country Towns Water Supply and Sewerage Program*
- *to take the financial burden away from the whole customer base, the household contribution capping should be eliminated*
- *that a high emphasis needs to be placed on recommendation 4, especially in water catchment areas.*

In general, the report provides a good framework and Gippsland Water would support the recommendations, once the above issues are satisfied.

RESPONSE provided by Chief Executive Officer, Goulburn Valley Region Water Authority

Overall, the audit report is considered to represent a fair and reasonable picture regarding the management of septic tanks in Victoria, and the status of recent and current initiatives to address the problems. The numerous issues contributing to the existing position have generally been identified and clearly described.

The report correctly highlights the major gaps in information regarding septic tanks and their performance, and the need to address this as a priority. As noted in our previous comments, it is disappointing that the audit did not recognise information that regional water authorities have and currently report to DSE and the EPA regarding previous expenditure on backlog works under the Small Towns Sewerage Program and connection rates to new sewerage works, respectively.

While I am not in a position to comment on what other water authorities have actually provided, Goulburn Valley Water has certainly provided this information.

RESPONSE provided by Chief Executive Officer, Goulburn Valley Region Water Authority - continued

While it is clear that large numbers of septic tanks are failing to perform satisfactorily, it is important to note that many others operate very well and will continue do so into the foreseeable future with appropriate maintenance. It is also important to recognise that for isolated rural dwellings, and for small low density rural communities, septic tanks will continue to represent the most appropriate means of treatment and disposal. With proper management this will represent the most appropriate and cost-effective outcome.

RESPONSE provided by Acting Chief Executive Officer, South East Water Limited

South East Water accepts the overall recommendations of the report, but has made some recommendations to further clarify and strengthen them to ensure that the outcomes they are seeking are effectively achieved (refer Appendix B). South East Water will actively work with DSE, the EPA and local governments to implement the final recommendations and the detailed actions arising from the report.

RESPONSE provided by Chief Executive Officer, Wannon Water

Wannon Water considers that, overall, the report is fair and balanced and supports the recommendations.

RESPONSE provided by Managing Director, Yarra Valley Water Limited

We believe that the report is a good summary of the broad issues relating to septic tanks.

RESPONSE provided by Chief Executive Officer, Benalla Rural City Council

The report was considered to be fair and balanced, with all research being presented in an unbiased manner.

Recommendations 1 – 16 are considered reasonable and valid, and council accepts these recommendations and supports the continuation of research in these areas in order to provide further information on the effect of failing septic tanks, particularly in rural areas.

RESPONSE provided by Chief Executive Officer, Greater Bendigo City Council

The City of Greater Bendigo supports the recommendations.

RESPONSE provided by Chief Executive Officer, Manningham City Council

Council has reviewed the document and agrees with the focus of DSE and the EPA providing leadership and management of septic tank systems from a statewide basis.

RESPONSE provided by Chief Executive Officer, Nillumbik Shire Council

Nillumbik Shire Council finds the report to be a fair and balanced document. It succinctly highlights the issues that are evident in regards to septic tank management at both the state and local government levels.

RESPONSE provided by Chief Executive Officer, Wellington Shire Council

The report lumps local governments together and makes general statements in relation to areas of poor performance. For example "... some local governments monitor areas where they have already seen risks and none monitor waterways". Wellington Shire Council monitors the water quality of Merrimans Creek at Seaspray. In this regard, the report is not fair and balanced. There would have been a variation of performances in relation to the range of issues addressed.

In relation to the report conclusions and recommendations, a number are of a non-specific nature and are unlikely to result in significant change. For example, "The Department of Sustainability and Environment, in conjunction with local government, develop and implement a statewide backlog plan". Local governments, in the preparation of their domestic wastewater management plans, are addressing many of the conclusions/recommendations but there are a number of issues which will be barriers to implementation which have been well identified in the report.

RESPONSE provided by Chief Executive Officer, Wodonga Rural City Council

As the report strongly indicates, there are thousands of aged and non-maintained septic tank systems that do not meet current standards and are polluting the environment. Council agrees that a major effort is required to address this situation.

Local government does not have the resources to undertake the necessary works relating to ongoing monitoring (nor often for the new installation) of septic tank systems and does not have the expertise relating to environmental protection that these other agencies have.

Wodonga Rural City Council is aware of litigation and insurance claims made against other councils and, thus, firmly believes all wastewater initiatives should be controlled at a state level or, at least, with the relevant water board. Agencies such as DSE and the EPA should be more involved in this realm of environment protection rather than local governments (often in rural areas with few funds, few resources and numerous alternative tasks).

RESPONSE provided by Chief Executive Officer, Yarra Ranges Shire Council

The Shire of Yarra Ranges generally supports the conclusions and recommendations within the report. However, the report should address the issue of septic tanks that were installed pre-1988 which have a legal right to discharge their wastewater off-site. In the Shire of Yarra Ranges 77 per cent (16 979) of all septic tanks were installed pre-1988, of these, 71 per cent are on allotments of less than one hectare where the land capacity may not be sufficient to meet current day standards.

Assuming that sufficient resources were available, the shire could only enforce compliance with the standards that applied at the time the permit was issued. These conditions are sub-standard in terms of current-day practice.

To address this issue, the options available to the government would be to either legislate to retrospectively require compliance and provide financial support for owners to upgrade their systems accordingly, or alternatively to accelerate and extend the backlog program to include all septic tanks identified in the domestic wastewater management plan. The current 20-year backlog program does not include all the septic tanks identified in the domestic wastewater management plan. Even if the program was to be extended, twenty years is too long to wait in terms of environmental and public health risks.
