



**Moorabool Shire
Council
Domestic Wastewater
Management Plan
Audit Report**

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1. Executive Summary

1.1 Introduction

This document presents the findings resulting from the audit of the Council's Domestic Wastewater Management Plan 2014 ("the DWMP").

Clause 4.7 of the DWMP requires that an Independent audit by an accredited auditor of the implementation, monitoring and enforcement of the DWMP every three years.

This is the first audit of the DWMP and covers the period October 2014 to November 2017.

Throughout the DWMP there are various statements and targets covering a range of policy and operational matters.

This Audit has been broken down into the following key areas to assist with future review of the DWMP and decision making:

- Information Management;
- Risk Assessment;
- Compliance; and
- Community Education and Awareness

There have been positive outcomes on implementing actions required under the DWMP, particularly in respect to finding remedies and solutions for the septic tank systems that failed during the Septic Audit Project.

The permitting and approval process for new septic tank installations is comprehensive and supported by educational material to assist owners with their maintenance responsibilities.

The most significant area of non-compliance with the DWMP requirements is the failure to conduct inspections and implement a suitable compliance monitoring program. This covers system inspections and owner compliance with permit conditions.

Audit acknowledges that the Operational Risk Classification used for determining an Inspection regime needs to be reviewed as a priority in the review of the DWMP.

Deficiencies within the existing Information Systems were also identified that adversely impact on effective management.

1.2 Objective

The Audit objective was to assess Council's effectiveness in implementation of its DWMP and identify any matters that would assist in the review of the DWMP.

1.3 Scope

The Scope of the Audit required:

- Assessment of compliance with domestic wastewater management policies and procedures
- Review of Operational Plan targets and performance including outstanding items as at the last review in 2014
- Appraisal as to the accuracy and validity of internal reporting
- Identification of any deficiencies or opportunities for improvement

The findings from the Audit have been used to make recommendations for consideration in the review of DWMP to support sustainable on-site wastewater management.

1.4 Summary of Recommendations

Information Management

- That a formal arrangement between the water authorities and Council be established for the provision of information on connections of septic tanks to sewer.

Operational Risk Classifications

- That the existing Operating Risk Classification for each site be reviewed by inspection of GIS overlays to identify anomalies and where existing classifications are not relevant, based on other available knowledge/data, the classification be amended; and
- That consideration be given to establishing a separate risk based inspection program to monitor owner compliance and septic system performance.
- That a random audit program of say 5% per annum be considered for AWTS's as an alternative to triennial inspections and supported by enforcement of the required owner maintenance part of the overall compliance monitoring program.

Compliance - Inspection of High and Moderate Risk Properties

- That the inspection audit data be recorded in the management system as a priority to assist in the review of Operating Risk Classifications

Compliance - Monitoring of Permit Conditions & System Performance

- That a tracking system be implemented for monitoring permit conditions on installations where requirements can be identified;
- That priority be given to sites which have aerated wastewater treatment systems; and
- That an assessment of the remaining installations be undertaken to determine what may be done to monitor performance and minimise potential risk of failure.

Reporting

- That a template be established for this Report and submitted annually as required.

Community Education and Awareness

- That a "Statement" be provided to conveyancers advising that a septic tank is located on the property and that the purchasers should satisfy themselves as to the operational performance of the system to avoid potential liability for remedial works; and
- That advice be sent to new owners of properties with a septic system on their responsibilities for care and maintenance of their system and Council's audit/inspection program.

Funding and Resourcing

Recommendations

- That Council continue to investigate the levying of an annual service fee of properties with septic tanks, as provided for under the Local Government Act, to cover the cost of periodic site inspections;
- That Council investigate the opportunity for water authorities within the Shire to include a levy in their septic tank waste disposal fee to assist funding of Council's monitoring and inspection program for the protection of their drinking water supply; and
- That Council consider the provision of fee for service inspection and provision of a condition report for purchasers of properties of septic tanks.

2. Regulatory Framework

The Code of practice – onsite wastewater management (the Code) EPA Publication 891.3 issued in 2013 was replaced by EPA Publication 891.4 July 2016.

The new legislation removed the requirement for manufacturers of septic tanks to obtain Environment Protection Authority for their systems before Councils could issue permits for installation. Only “Approved” systems were able to be permitted for installation.

The revocation of this layer of control, now means that septic tank systems need to satisfy the appropriate Australian & New Zealand Standard or have a current Certificate of Conformity for consideration by Council as suitable for installation and issue of a permit.

The relevant clause in the Code states:

“1.9.1 Manufacturers’ Approval process

Manufacturers and importers of onsite wastewater treatment systems who wish to sell and install their individual treatment system brands and models in Victoria, must have each system certified as conforming to the relevant Australian Standard (listed below) by a JAS – ANZ accredited Conformity Assessment Body (CAB). Manufacturers and importers of onsite wastewater treatment systems will need to provide EPA with a copy of current certificates of conformity, to demonstrate that the relevant standards have been certified against.”

The relevant Australian Standards are:

- Australian Standard AS/NZS 1547: On-site domestic-wastewater management.
- Australian Standard AS/NZS 1546.1: On-site domestic wastewater treatment units — Part 1: Septic Tanks
- Australian Standard AS/NZS 1546.2: On-site domestic wastewater treatment units — Part 2: Waterless composting toilets.
- Australian Standard AS/NZS 1546.3: On-site domestic wastewater treatment units — Part 3: Aerated wastewater treatment systems.

3. Observations and Recommendations

3.1 Information Management

Council has three data repositories that store information used for septic tank management. The main storage repository containing permit and compliance monitoring data is the “Wastewater Manager” module of Health Manager. The other two databases are the corporate management system “Lynx” and the Geospacial Information System. Wastewater Manager is the primary tool used by the environmental health group to manage septic tanks.

It was noted during the audit that there are several shortcomings in the ability of the systems to integrate with each other. Overcoming data relationship issues would improve administrative efficiency and data integrity.

Although quantification of potential efficiency gains and cost savings is beyond the scope of this Audit, the matter is raised because of the belief that benefits could be substantive. One simple example is that on-site system inspection reports are undertaken using a paper form to document the inspection and the collected data is then entered manually into Wastewater Manager.

Upon inquiry it was established that Council inspections were previously carried out using a hand-held device with download capability which would be expected in today’s environment.

The other concern was to do with the currency of information in Wastewater Manager and the corporate property/rating system. There does not appear to be any validation of property information between the two systems.

There does not appear to be a satisfactory process between the water authority and council for obtaining advice on properties which have connected to sewer and the septic tank has been decommissioned. This impacts on data integrity within the Wastewater Manager.

Procedural documents need to be maintained to ensure currency and correct implementation of policies.

Recommendation

- That a formal arrangement between the water authorities and Council be established for the provision of information on connections of septic tanks to sewer; and
- That Policies and Procedures be checked for currency and a protocol for periodic review be implemented

3.2 Risk Management - Operational Risk Classifications

The DWMP provides a mechanism for establishing an Operational Risk Classification of High, Moderate or Low for a system on a particular allotment using constraint mapping classification and system compliance data.

The criteria within the Model are used for:

- assessing site risk; and
- establishing a framework for Council's inspection program.

The results of application of the "Model" were looked at in a sample township (refer Appendix 1 -Greendale). On face value there appeared to be anomalies in assigned risk classifications between similar sites.

The DWMP acknowledges that there were several limitations inherent in the methodology adopted to assess the variation in on-site domestic wastewater related risk throughout the Shire.

The accuracy of the assigned risk classification is fundamental to the system approval process and changes will have a substantial impact on Council's current inspection regime requirements.

Consideration should be given to separating the site risk for on-site wastewater suitability from the compliance monitoring risk associated with the Council's inspection regime.

The current DWMP requires an annual inspection of all High-Risk properties (55) and all Moderate Risk (3,526) properties once every 3 years

In real terms this means 1,230 properties to be inspected annually based on 2014 figures. Any substantive shift either to the High or Low from the Moderate-Risk classifications will greatly impact on inspection requirements.

Many of the septic tank systems within the Shire are aerated wastewater treatment systems (AWTS'S). The owners are required to undertake quarterly servicing and have a water sample analysed annually. Under the present Risk Classification methodology, a large proportion of these "monitored and serviced" systems are requiring inspection at the same frequency as a non-monitored / serviced septic system.

Whether they are being maintained as required and serviced properly is questionable, however there is the opportunity to educate owners and service agents and where necessary enforce.

The current criteria for determining the Risk Classification, site and septic system suitability which is scientific and technically based and monitoring which is performance based, may not be the best solution.

The DWMP recommends that:

“Council continually re-classify systems depending on system compliance and the need for required works. Council will continually update the operational risk of lots within their database and provide an up to date operational risk map as part of the annual review to show the progressive changes throughout the Shire.”

There is no evidence that any re-classifications have been undertaken and databases updated.

The DWMP also requires work to be undertaken in the planning and risk assessment for the DWM using the Decentralised Sewage Model (DSM) for selected development areas within the Shire.

There is no evidence that this has been looked at within the Audit review period.

Recommendations

- That the existing Operating Risk Classification for each site be reviewed by inspection of GIS overlays to identify anomalies and where existing classifications are not relevant, based on other available knowledge/data, the classification be amended; and
- That consideration be given to establishing a separate risk based inspection program to monitor owner compliance and septic system performance.
- That a random audit program of say 5% per annum be considered for AWTS's as an alternative to triennial inspections and supported by enforcement of the required owner maintenance part of the overall compliance monitoring program.

3.3 Compliance

3.3.1 Issues in Assessment of Compliance

The assessment of compliance is a complex issue and not easily audited. The reality is that there are onsite wastewater systems installed that:

- Pre-date permitting;
- Council has no permit information on;
- Are no longer “Approved for Installation and have a poor performance record; and
- Have varying permit conditions for maintenance (even between similar systems)

Hence, measuring compliance is not as simple as it would appear and could be quite unfair. There could be situations where two properties side by side with similar septic tank systems could have different conditions, simply because of installation timing and the governing regulations.

3.3.2 Inspection of High and Moderate Risk Properties

Council's Environmental Health Technical Officer (EHTO) has basically completed an audit of the 256 Moderate Operational Risk allotments that failed in the Septic Audit Project (SAP). There have been two Progress Reports (April 2017 and November 2017) presented detailing the inspections conducted in accordance with the DWMP requirements.

There remain approximately 2,000 inspection records still to be entered into the Wastewater Manager system.

The DWMP however, requires that all properties with an Operating Risk Classification of High to be inspected annually and Moderate once every three years. It is understood that the (SAP) was completed approximately 3 years ago. Therefore, to comply with the current DWMP requirements for inspections, Council should have re-visited all High-Risk properties 3 times and all Moderate-Risk properties during the period covered by this Audit.

Council should have carried out some 3,700 inspections based on existing Operating Risk Classifications.

Council has not complied with the DWMP Inspection requirements.

Audit believes the targeted inspection program is neither practical or achievable and needs to be re-visited in conjunction with the Operational Risk Classification review and funding options that have been recommended in this Audit

Recommendation

- That the inspection audit data be recorded in the management system as a priority to assist in the review of Operating Risk Classifications

3.3.3 Monitoring of Permit Conditions & System Performance

Council records are updated with service reports when and if they are received. There is no tracking process in place to follow-up outstanding service reports and other permit requirements that the owner may have to comply with and/or supply evidence of completion.

The DWMP identifies the need for tracking and recommended that electronic transfer of data should be investigated.

This is an ongoing problem for local government generally and not just the Moorabool Shire.

Recommendations

- That a tracking system be implemented for monitoring permit conditions on installations where requirements can be identified;
- That priority be given to sites which have aerated wastewater treatment systems; and
- That an assessment of the remaining installations be undertaken to determine what may be done to monitor performance and minimise potential risk of failure

3.3.4 Sewered Townships with Septic Tank Systems

The review of the DWMP should include a strategy for getting properties with septic systems connected to the sewer when available. The reason small towns were provided with reticulated sewer under subsidised local schemes was based on risk.

Clause 3.12.4 of the Code provides the following for Existing secondary treatment systems

“Where a property has an existing EPA approved secondary treatment system that was installed before the property owners were formally notified by the Water Corporation that a reticulated sewerage system is available, the treatment system may be retained under the following conditions:

- the effluent quality is verified, via independent effluent sampling and analysis at a NATA-registered laboratory, to be 20/30 secondary standard or better

- the premises owner has demonstrated to the satisfaction of the relevant Council that the effluent is being sustainably recycled and contained onsite in all weather conditions
- service reports which verify that the premises owner/occupier has had an on-going service history with a professional service technician have been provided to Council at regular intervals in accordance with the conditions in the Council Septic Tank Permit
- the treatment and recycling system is managed and serviced in accordance with the conditions on the Council Septic Tank Permit to Install/Alter.

Householders with well-functioning secondary treatment systems which meet the above conditions may elect to:

- connect their onsite treatment plant to the reticulated sewer and discharge treated effluent or raw wastewater to sewer during wet weather

or

- where there is no or insignificant impact, continue to irrigate all-year round.

Where a well-functioning onsite secondary treatment system continues to be used after reticulated sewerage is available, the householder should arrange and pay for the effluent to be analysed by a NATA-accredited laboratory for Biochemical Oxygen Demand (BOD5), Total Suspended Solids, Electrical Conductivity, Sodium Absorption Ratio and, if applicable E. coli on an annual basis. The results should be sent to the relevant Council and Water Corporation each year. Where the effluent quality results show that the treatment system is no longer functioning at the secondary quality standard, the treatment system should be serviced to achieve secondary standard or the house connected to the reticulated sewerage”

Any strategy will need to accommodate the above.

4. Operational Plan - Performance Delivery Review

4.1 Incomplete Items from 2006 Plan

Table 4 of the DWMP 2014 identified Incomplete Priorities from the 2006 Plan. The Table below summarises the status of those items and together with any additional comments resulting from this Audit.

Item	Target Completion	Status	Comments
Reinforcing system owner responsibilities and education of owners through one on one system audits.	End of 2014.	Complete.	Additional processes need to be implemented for ongoing education including new property owners.
Identify existing systems within the Shire without a permit and record system performance in Council records so that future inspections can be undertaken.	End of 2014.	Incomplete	Wastewater Manager does not contain all data required to identify properties that do not have permits

Item	Target Completion	Status	Comments
Improvement to system audit procedure and assigning a performance based risk assessment on systems in operation.	Within this DWMP period.	Incomplete.	The current Risk Classification needs review and audit regime determined.
Improvement in DWM system data collection.	Completed as part of the Septic Audit Project.	Incomplete.	The current process for collection & processing of system inspection data inefficient.
Development of procedures for Council staff to undertake system inspections on a regular basis in accordance with the operational risk.	Within this DWMP period.	Incomplete.	Inspection audit regime to be determined.
Development and distribution of educational material to residents via Council's website about the ongoing management and maintenance of their DWM system.	Complete.		Update Web site with Electrical Certificate requirement to accompany final documentation.
Follow up on compliance for existing failing systems.	Completed – ongoing.	Ongoing.	There are 8 systems being followed-up
Investigation of technology for streamlining records of field work.	Within this DWMP period.	Incomplete.	Would appear that some regression has occurred in this area.
Development of a complete and up-to-date data base of all DWM systems in the Shire with records managing current approvals and inspections. The data base should include the following details as a minimum; location, type of system, system risk rating, owner contact details, last Council inspection, service inspections, and date of last desludging of the septic tank	Will be completed within 6 months of the DWMP adoption.	Wastewater Manger is the primary registry for storage of data.	The Audit identified that the three data repositories used for managing septic tanks fail to adequately integrate with one another and as such data currency and integrity is compromised.
Development of a compliance audit system for ensuring new DWM systems comply with permit conditions.	Within this DWMP period.	Implemented.	There are opportunities to improve the efficiency of the current processes.

4.2. 2014 – 2017 Performance Delivery Review

The following Table details the status on actions identified in the 2014 DWMP.

Action	Description	Term	Due Date	Responsibility	Status
Preparation of policies and procedures	<p>Prepare and document the following procedures for DWM to ensure they are in line with DWMP:</p> <p>DWM system inspection procedure and program</p> <p>Non-compliance with inspection procedure</p> <p>Complaint inspection procedure</p> <p>Rectification/upgrade works procedure</p> <p>Issuing of fines/notice procedure</p> <p>Permit to Install procedure</p> <p>Approval to Use procedure</p>	Short	6 months after DWMP Adoption	CCH	Enquiries indicate that Procedures need to be updated
Data base management	Update/expand Councils DWM system data base to record all property and system details.	Short	6 months after DWMP adoption	CCH with assistance from IT/GIS	Complete in Wastewater Manager & ongoing.
Continuation of improvement of data collection	Develop a GIS layer for DWMS in the Shire.	Medium	2016	GIS Officer	Incomplete. Data on GIS is around 2 years out of date.
	Development of additional field within database to automatically update operational risk class.	Short	6 months after DWMP adoption	GIS Officer / IT & CCH	Complete in Wastewater Manager.
GIS Training	Train Council staff member (EHTO) in GIS in order to prepare DWM maps as requested.	Short	6 months after DWMP adoption	GIS Officer, EHTO, CCH	Incomplete. GIS septic tank data is not current. Limited training has been provided.

Action	Description	Term	Due Date	Responsibility	Status
Operational risk map	Develop a GIS layer for operational risk within the Shire that can be continually updated. Maps to be provided at annual reviews.	Short – Ongoing	2015	GIS Officer & EHTO	Incomplete. Review of operational risk for site suitability to be undertaken. A separate overlay for an inspection regime should be developed and maintained.

5. Reporting

Clause 4.1.3 of the DWMP requires Council to report annually on a range of performance indicators, including but not limited to:

- The number of complaints about poorly functioning DWM systems;
- The number of system inspections for each risk category;
- The number of systems needing rectification (following inspection);
- The number of systems rectified;
- The number of systems still needing rectification;
- The assessment of the CMA results of surface and/or groundwater quality monitoring in respect to DWM and its potential impacts on water quality;
- Progress on implementation of improved treatment systems, such as community sewerage systems or greywater treatment systems; and
- Reporting on funding and expenditure

Clause 4.7 also requires that the Annual Report are to be provided to all Stakeholders.

Council has not complied with these requirements.

Two Reports have however been presented (April 2017 and November 2017) outlining the progress of inspections of the Moderate Risk properties that originally failed in the Septic Audit Project and the Blackwood Localised Septic Program

Recommendation

- That a template be established for this Report and submitted annually as required.

6. Community Education and Awareness

The DWMP suggested several different ways that Council could provide information to owners.

Council Web site provides residents with information on what is required when applying for a septic tank, together with fact sheets on the various system types and their maintenance requirements. The information is easily accessible for viewing.

The individual system inspections have also no doubt been extremely beneficial alerting owners to the requirements for proper management of their septic tank systems and following up on rectification works.

Whether the current inspection program is practical and sustainable is subject to further evaluation in conjunction with the Risk Classification review.

Consideration should be given to providing information to alert prospective purchasers of properties with septic tank systems and to inform new property owners.

Recommendations

- That a “Statement” be provided to conveyancers advising that a septic tank is located on the property and that the purchasers should satisfy themselves as to the operational performance of the system to avoid potential liability for remedial works; and
- That advice be sent to new owners of properties with a septic system on their responsibilities for care and maintenance of their system and Council’s audit/inspection program.

7. Funding and Resourcing

7.1 Community Wastewater Improvement Schemes

The DWMP states that “a feasibility of establishing a local law for DWM will be investigated as part of the Local Laws review commencing in October 2014”. It is understood that this matter is still being investigated but at present there are no identified improvement schemes planned.

7.2 Monitoring and Inspections

Clause 4.8 of the DWMP states that “Investigations should be made into Council fees and charges to determine whether a fee can be charged for the issue of a Permit to Use a system, or an inspection charge can be applied for the risk inspections. The application of these fees can allow resourcing for development of educational material and other items in the Operational Plan”.

It is understood that this matter is still under investigation and no decisions have been made.

Recommendations

- That Council continue to investigate the levying of an annual service fee of properties with septic tanks, as provided for under the Local Government Act, to cover the cost of periodic site inspections;
- That Council investigate the opportunity for water authorities within the Shire to include a levy in their septic tank waste disposal fee to assist funding of Council’s monitoring and inspection program for the protection of their drinking water supply; and
- That Council consider the provision of fee for service inspection and provision of a condition report for purchasers of properties of septic tanks.

7.3 Septic System Upgrades

Septic Tank Systems do have a limited life even with proper maintenance. The current permitting process issues the owner a right to use their system for an indefinite period. This mechanism of approval is out-dated. It severely restricts the ability of councils to amend permit conditions so that the septic systems are required to meet performance standards that are consistent with improved public and environmental health standards.

The DWMP aims to provide Council with a road map for:

- managing existing septic tank installations;
- continued development in areas where reticulated sewer is not available: and
- achieving long-term sustainable on-site wastewater solutions.

In assessing opportunities for improvement of the DWMP in respect to long-term sustainable solutions, the following concepts are put forward for consideration in the broader DWMP review process:

- That the State system for permitting be subjected to an Industry review and a system of operational licensing be investigated.
- That legislation be amended to require a vendor to disclose that the property has a septic tank and that permit conditions have been complied with. This could be included on the Section 32 Statement and on the Contract Note as a purchase “subject to”.

Once the contract is entered into (signing of a Contract Note), it is too late for the purchaser to subsequently find out that there is considerable cost to fix the septic tank system.

The sale of the property may well create the impetus necessary for a vendor to fix the septic tank system to sell their property. No burden of cost is borne by the general public and the system can be upgraded to meet current standards.

An analysis of the average frequency of property sales in each unsewered township would shed some light on possible impact and opportunity.

- That the opportunity to fund system upgrades using the provisions of the Local Government Act covering hardship and the ability to have the cost remain as a charge against the property be investigated.