



Government of South Australia
Department of Health

DISCUSSION PAPER

Proposed Onsite Wastewater Systems Code and Amendments to the Regulations

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Amendments to the Regulations

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Foreword

This Code has been prepared to assist the relevant authorities in the administration of the relevant Regulations under the Public and Environmental Health Act with respect to the design, installation and operation of Onsite Wastewater Systems. This discussion paper has been prepared as a part of the consultation process being undertaken by Applied Environmental Health, Wastewater Management Section for the development and implementation of the Onsite Wastewater Systems Code. This paper is designed to promote discussion amongst all key stakeholders about the fundamental aspects of the proposed Code.

The Public and Environmental Health (Waste Control) Regulations 1995 have been reviewed concurrent to this Code and another Code prepared for "Standards for Connection to a Reticulated Community Wastewater System". The reviewed Regulations have been renamed the "Public and Environmental Health (Wastewater Systems) Regulations 2007."

The Onsite Wastewater Systems Code and the Regulations will provide technical information and legislative requirements for consultants, the building, plumbing and manufacturing industries, and owners and occupiers of premises in relation to onsite wastewater systems.

The Code was prepared in consultation with the Local Government Association, industry representatives and individual members of local councils who provided comments which have been incorporated into the Code.

Information included in the Code relates to:

- The legislative requirements for onsite wastewater management;
- Relevant authorities for administering the Regulations and Code (which may be local or state government authorities);
- Application and approval details;
- All aspects of onsite wastewater management including:
 - ❖ planning;
 - ❖ onsite wastewater system design, including planning and site and soil evaluation;
 - ❖ onsite wastewater system installation and construction;
 - ❖ onsite wastewater system operation and maintenance; and
 - ❖ onsite wastewater product design, including performance testing and ongoing quality assurance.

Comments

Questions and comments regarding the Code should be submitted electronically to:

Attention: Wastewater Management Section
public.health@health.sa.gov.au

PLEASE NOTE: The deadline for questions and comments is 5pm Friday 30 March 2007.

Where electronic submissions are not possible, please submit written comments to:

Wastewater Management Section
Applied Environmental Health
Department of Health
PO Box 6, RUNDLE MALL
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Persons wishing to discuss specific issues and/or seek clarification on matters addressed in the proposal can contact the Wastewater Management Section, telephone (08) 8226 7100.

Comments received will be submitted to the Public and Environmental Health Council, for consideration and recommendation to the South Australian Health Commission, the Minister for Health and Cabinet on the final form of the regulatory package.

On behalf of the Minister for Health, the South Australian Health Commission, the Public and Environmental Health Council, and the Department of Health I would like to thank you for taking the time to review the attached proposal and provide written comments.

A handwritten signature in blue ink that reads "Kevin Buckett". The signature is written in a cursive style with a large initial 'K'.

Dr Kevin Buckett
Director
Public Health
Department of Health

January 2007

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1. Introduction

Onsite wastewater systems serve approximately 200 000 to 250 000 South Australians, predominantly in areas not serviced by a reticulated community wastewater collection and treatment system (such as STEDS or sewer). Typically, onsite systems serve individual households and small commercial facilities and consist of a treatment system with onsite disposal or irrigation of treated effluent.

The Public and Environmental Health Act (Wastewater Systems) Regulations are applicable in areas where the SA Water Corporation's sewerage services are not available. Therefore, they include provisions for all aspects of onsite wastewater systems, as well as reticulated community wastewater systems, including connections to such systems.

The Regulations are administered by the authorised officer of local councils or the Department of Health with the delegated authority from the Minister for Health.

This regulatory package proposes to prescribe this Code under the Wastewater Systems Regulations of the Public and Environmental Health Act and replace the existing prescribed codes.

The proposed “*Onsite Wastewater Systems Code*” aligns with emerging issues, trends and new and alternative technologies in the field of onsite wastewater management. The proposed framework is considered to be the minimum standard to fully address the management issues associated with onsite wastewater systems, to ensure sustainability and to minimise any environmental impacts or public health risks.

2. Background

The existing The existing South Australian Health Commission (SAHC) Code, “Waste Control Systems Standard for the Construction, Installation and Operation of Septic Tank Systems in South Australia” and its supplements A (Aerobic Sand Filters) and B (Aerobic Wastewater Treatment systems) have been reviewed for the following reasons:

- a) Failures and non-compliance of onsite wastewater systems have been reported for many years. Incidences of failure have been reported for onsite wastewater systems through surveys conducted both by local councils and the Department of Health, 10 years of local Council experience through direct administration of these systems, and individually reported failures. The design of onsite systems of various technologies has been well established. However, the failures have been associated with lack of maintenance and understanding of the installation and operational requirements by installers, servicing agents and homeowners.
- b) Failing onsite wastewater systems, which cause pooling, runoff or leakage of untreated or partially treated effluent, pose a potential public and environmental health risk through exposure to human pathogens. Failing systems also compromise the quality of water resources and the receiving environment.
- c) The existing regulatory provisions for onsite wastewater systems in South Australia have been in use for over ten years, and the majority of those systems have been administered during this time by authorised local council officers. New technologies or alternative solutions have been administered by the Department of Health. Administrative and operational problems have been experienced during that period, and there is now a clear need to revise these regulatory provisions to address re-occurring problems which have in the past, led to failures (or potential failures) of onsite wastewater systems.
- d) The scope of the existing codes is not sufficient to cover the range of system types which are available for use, or new technologies. Only three types of systems are covered by the existing codes; septic tanks, aerobic wastewater systems and aerobic sand filters. This does not allow use of some new types of systems or for the development of emerging technologies. There is

a need to allow for new trends and technologies and to consider both state of the art and low-tech solutions.

- e) The existing codes apply to onsite wastewater systems of unlimited capacity, whereas the intent of onsite wastewater systems is for a dwelling or small commercial facility. In order to manage onsite systems appropriately, the regulatory package needs to specify the intended capacity thresholds of onsite systems and the relevant authority responsible for administration.
- f) Performance-based approaches which address proper planning, design, testing, quality assurance, training, accreditation and certification are on the national agenda and are being adopted by other States. The existing codes take a prescriptive approach and do not address many of these aspects of onsite wastewater management. Australian and New Zealand Standards (AS/NZS) for onsite wastewater management address these issues and are considered to be best-practice. Through adopting these national Standards, the regulatory package will be brought in line with current best-practice trends.
- g) Some aspects of wastewater management are currently not included in the current Australian / New Zealand Standards, such as greywater reuse and onsite wastewater systems of capacity larger than 10 equivalent persons. It is considered necessary that these aspects are addressed and therefore are included in the proposed regulatory package.
- h) Other State agencies including the EPA seek changes to the onsite wastewater codes to better address the impact of onsite wastewater systems in sensitive environments such as Water Protection areas, coastal areas and the River Murray. With predominately high numbers of onsite wastewater systems installed in these areas (for example the Mount Lofty Ranges, beachside shack areas and the Murraylands), protection of the environment and protection of our Water Catchment is of vital importance and on the political agenda. The proposed regulatory package includes special provisions for these areas in terms of wastewater treatment and effluent disposal requirements.
- i) Owners are currently solely responsible for failure of onsite wastewater systems. Currently, the relevant authority can only issue a maintenance order on the owner or occupier of a premises where an onsite wastewater system is installed. Manufacturers, designers, installers and servicing agents all have a responsibility to ensure that the system performs as intended through correct manufacture, installation and ongoing maintenance. These issues will need to be addressed by the proposed regulatory package.
- j) With a best practice and national approach to all aspects of onsite wastewater systems, including design, product testing, installation, operation and maintenance aspects, it is considered that onsite wastewater systems will be better managed under the proposed regulatory package. As such, this will reduce risks of failure and mismanagement of onsite systems and ultimately reduce risks to public and environmental health.

Another Code called '*Standard for Connection to a Reticulated Community Wastewater System*' has been prepared and will be prescribed under the Regulations.

2.1. Australian & New Zealand Standards for Onsite Wastewater Management

The Australian and New Zealand Standards (AS/NZS) for onsite wastewater systems provide a national, best practice approach to onsite wastewater systems management.

To date the states of NSW, Victoria and Queensland have adopted most aspects of the new AS/NZS and other states are following suit.

A brief description of the revised AS/NZS is given below:

- AS/NZS 1546.1 *On-site domestic wastewater treatment units Part 1: Septic tanks.*
This code states the design and manufacturing requirements of septic tanks of various materials and their structural testing requirements.
- AS/NZS 1546.2 *On-site domestic wastewater treatment units Part 2: Waterless composting toilets.*

This code details design, performance and testing requirements for waterless composting toilets.

- AS/NZS 1546.3 *On-site domestic wastewater treatment units Part 3: Aerated wastewater treatment systems*.

This code states the design, manufacturing, performance and testing requirements of aerated wastewater systems and testing regimes before an approval can be issued.

- AS/NZS 1547 *Onsite domestic wastewater management*.

This code has two main focuses:

- ❖ Management of all aspects of onsite systems from the development stage to design, installation, operation, maintenance as well as training, and
- ❖ Site assessment methodologies and land disposal of treated wastewater, including mounds, evapo-transpiration beds, subsurface disposal methods, under and above ground irrigation, and others.

A formal review of the AS/NZS 1546 series and AS/NZS 1547 is currently in progress. The main variations proposed for the AS/NZS 1546 series will be to performance testing requirements. As such, no subsequent changes will be required to the Onsite Wastewater Systems Code.

The main variation to AS/NZS 1547 will be to incorporate a section on risk management. As AS/NZS 1547 is being adopted in the Onsite Wastewater Systems Code, once finalised, the proposed risk management section will also be a part of the Onsite Wastewater Systems Code. A risk management approach is used in many aspects of Public and Environmental Health and will assist in all areas of onsite wastewater system management.

The Department of Health participates in all AS/NZS 1546 Series and AS/NZS 1547 review processes.

2.2. Local Councils

Local councils took over responsibility for most onsite wastewater systems management in 1995, in conjunction with the introduction of the *Waste Control Regulations 1995*. Ten years of operation, together with the intimate local knowledge of their council areas, enables local council to make appropriate decisions to achieve improved regulation enforcement and onsite wastewater system management.

The proposed regulatory package will result in local councils dealing with all onsite system installations that are up to 3000 L/d (or 20 Equivalent Persons (EP)) that utilise approved onsite wastewater products. Local council may choose to approve onsite wastewater systems up to 50 EP (provided the number of connected buildings does not exceed five), with agreement from the Department of Health. Local councils have been dealing with systems up to 50 EP for several years under the existing prescribed SAHC Codes. Similarly, underfloor plumbing has also been assessed and approved by local councils including the underfloor plumbing for buildings connecting to reticulated community wastewater systems. Therefore the approach to incorporate systems up to 50 EP is simply being formalised in the Code and Regulations.

On behalf of the Minister for Health and under delegation, the authorised officers of the Wastewater Management Section (WWMS) will be dealing with all other systems. This will allow the WWMS to concentrate on larger installations and reclaimed water reuse schemes. The WWMS will continue to approve onsite wastewater system products for sale and for local council to approve their installation in South Australia.

3. Approaches taken by other States

To date the states of NSW, Victoria and Queensland have adopted most aspects of AS/NZS 1546.1: 1998, AS/NZS 1546.2: 2001 and AS/NZS 1546.3:2001, and other states are following suit. The changes have been in place in NSW for approximately 7 years, and in Victoria and Queensland for approximately 3 years.

4. Review and Consultation

A broad range of key stakeholders from industry groups and government agencies have been consulted during development of the proposed framework. This includes:

- Public and Environmental Health Council
- Local Government Association
- Office of Local Government
- Department of Trade and Economic Development (Regional and Small Business)
- Department of Transport and Urban Planning (Planning SA)
- Department of Environment and Heritage (Environmental Impacts, Environment Protection Agency and Coastal Protection)
- Department of Families and Communities (Aboriginal Housing, Housing Policy, Home-start Finance, Affordable Housing Policy, Community Housing Authority, and Housing Trust)
- Department of Premier and Cabinet (Regulatory Impacts, Aboriginal Affairs and Reconciliation)
- Department of Water Land and Biodiversity Conservation
- Department of Health (internal units)
- SA Water / United Water/ Australian Water Quality Centre
- Flinders University, School of Environmental Health

Ongoing consultation with a special interest group of local government Environmental Health Officers, predominantly through the Australian Institute of Environmental Health's Wastewater Treatment Systems Special Interest Group has occurred throughout development of the proposal.

Additional consultation was undertaken with relevant Industry stakeholders, including the Plumbing Association of South Australia, TAFE SA, SAI Global, Manufacturers of onsite wastewater systems and consultants in onsite wastewater system design.

5. Onsite Wastewater Systems Code Overview

The Onsite Wastewater Systems Code is to be read in conjunction with AS/NZS 1546.1, AS/NZS 1546.2, AS/NZS 1546.3 and AS/NZS 1547 for onsite wastewater systems, which will be prescribed codes under the regulations. The provision of the Onsite Wastewater Systems Code, however, shall take precedence over these AS/NZ Standards where it indicates stricter requirements or higher standards.

The Code makes specific reference to sections of the AS/NZS standards to assist the reader in finding the relevant sections, however it also allows for adoption of the most recent approaches if the AS/NZS standards are updated in the future.

The Onsite Wastewater Systems Code will be a prescribed code under the proposed Regulations and non compliance with its provisions may result in legal proceedings by the relevant authority.

Key aspects of the proposed Onsite Wastewater Systems Code and Public and Environmental Health (Wastewater Systems) Regulations are as follows:

5.1. System Capacities

Onsite wastewater systems for a residential purpose must be designed for a minimum capacity of 6 Equivalent Persons (EP). This Code applies to a maximum onsite wastewater system capacity of 50 EP (provided the number of connected buildings does not exceed 20).

5.2. Local Councils Authority for Approval

Under the Code, local council authority for approval for onsite wastewater system installations has been extended to include all types of Department of Health-approved onsite wastewater products.

The relevant authority for onsite system installation approvals is shown in Table 5-1.

Table 5-1: Determination of Relevant Authority

	Relevant Authority
Installation approvals for Onsite Wastewater Systems less than or equal to 20 EP	Local council
Installation approvals for Onsite Wastewater Systems between 20 and 50 EP	<ul style="list-style-type: none">Local council may choose to approve these systems provided the number of connected buildings does not exceed fiveDepartment of Health must agree to this arrangement Department of Health if local council chooses not to approve these systems
Installation approvals for Onsite Wastewater Systems greater than 50 EP	Department of Health
Underfloor plumbing approvals for all developments, including system larger than 50 EP	Local council
Installation approvals for unincorporated areas (including underfloor plumbing approvals)	Department of Health

This change takes advantage of local council's intimate knowledge of their local areas and the experience gained over the past 10 years in dealing with limited types of onsite systems. As local councils currently approves limited *types* of systems with *unlimited capacity*, this change is a 'give and take' arrangement between local government and the Department of Health. Therefore overall numbers of installations to be approved by local councils is not expected to increase.

The Department of Health will continue to issue product approvals for manufactured systems. Under the new Code, the Department of Health will now also issue product approvals for non-manufactured systems such as reedbeds and sand-filters.

5.3. Adoption of National Best-practice Approaches

The Regulations prescribe all AS/NZ Standards for onsite wastewater management, and as such the Code takes a national, best practice approach. Emerging issues, trends and technologies in the field of onsite wastewater management, including aspects such as planning, design, performance testing, training and accreditation are addressed. The regulatory package also includes provisions for aspects of wastewater management which are currently not included in the current Australian / New Zealand Standards, such as greywater systems.

5.4. Product Certification for all Onsite Wastewater Products

To ensure products are manufactured to the required standards at all times, onsite wastewater system products (eg septic tanks, aerobic treatment units, composting toilets and greywater systems) will be required to obtain certification to an approved product certification program prior to approval from the Department of Health. Products with existing approvals will also be required to meet these requirements within the grace periods introduced (refer to Section 5.11).

For onsite wastewater systems for which an AS/NZS Standard exists, the product certification program must include initial performance testing of the onsite wastewater systems, and ongoing surveillance of the manufacturer's quality systems, to meet the requirements of AS/NZS 1546.1,

1546.2 and 1546.3, whichever is applicable, and any other Department of Health requirement as necessary. Systems which hold a current product certification program license and have been approved interstate will be accepted in most cases.

The product certification program for onsite wastewater systems which are not manufactured to the AS/NZ Standards or where no standard exists will have similar requirements, however the Department of Health will determine the specific testing regimes.

The product certification program is to be undertaken through an independent product certification agency accredited by JAS-ANZ. All laboratories used for offsite chemical and bacteriological determinations must be National Association of Testing Authorities (NATA) registered to carry out analyses for the parameters specified. Sampling must be undertaken by a NATA accredited laboratory (or other persons as agreed to by the Department of Health) and directly delivered to a NATA accredited laboratory, to carry out analyses for the parameters specified.

These requirements must be met by the manufacturer prior to product approval from the Department of Health.

5.5. System Installation

In order to ensure ongoing protection of public health and the environment during and after installation of an onsite wastewater system, a number of performance based measures have been introduced:

- a) All onsite wastewater systems including the land application system must be installed and commissioned prior to occupancy;
- b) Plumbers are to provide self-certification for all installed systems following SA Water's Certification procedures, and provide a copy of the certification to the relevant authority – check whether Bond situation was included in Regulations;
- c) The relevant authority may choose to request independent certification for the whole system by an independent technical expert;
- d) Onsite wastewater products that provide secondary or further treatment (including aerobic systems, composting toilets), and do not currently have ongoing effluent monitoring requirements, shall undergo annual performance monitoring as follows:
 - ❖ 10% of all installed systems will be randomly selected by the Department of Health on an annual basis to be audited by a third party. For this, manufacturers will provide a list of each model installed each year to the Department of Health.
 - ❖ A maximum of 10% of the first 100 onsite models installed and an additional 1% thereafter for each year of manufacture shall be selected. If the manufacturer has less than 10 units installed, at least one unit must be tested. The maximum number of systems tested per model will under normal circumstances be limited to 20 per year.
 - ❖ For each randomly selected installation, sampling and testing is to be performed for BOD₅, SS, thermotolerant coliforms, disinfectant concentration and any further parameters that might be specified by the manufacturer or Department of Health together with citing of the service history.
 - ❖ Sampling is to be performed by a NATA accredited agency (or an independent body as agreed to by the Department of Health) in accordance with sample locations specified in the product design approval by the Department of Health.
 - ❖ Samples are to be analysed and reported on by a NATA registered laboratory and samples for disinfectant concentration, where required, are to be determined on site.
 - ❖ While the system is under manufacturer's warranty, sampling and testing will be at the expense of the manufacturer. Otherwise sampling and testing will be administered by local councils with cost recovery mechanisms.

- e) Local councils are encouraged to carry out an inspection and monitoring audit program of the onsite system installations within their Council area to highlight the need for maintenance, repair or replacement of onsite wastewater systems.
- f) Owners are to ensure that they hold maintenance and service contracts for their onsite wastewater systems, through an accredited service agent;
- g) Servicing of an onsite wastewater system is mandatory and must be undertaken by a qualified service provider who has completed an appropriate accredited training program. Servicing must be in accordance with the manufacturer's or designer's instructions; and
- h) The relevant authority may request the provision of a durable notice to be permanently located on the property where the wastewater system is installed, showing manufacturer and operation / maintenance details of the installed system.

5.6. Training and Education

To ensure all parties involved in onsite wastewater management are appropriately trained the Code proposes the following:

- a) Soil assessments must be undertaken by an appropriately trained professional engineer (i.e. geo-technical engineer or civil and environmental engineer) or soil scientist.
- b) Installation of the land application system and all sanitary plumbing and drainage associated with an onsite wastewater system shall be undertaken by a licensed plumber. In cases where the designer/manufacturer considers that additional or other qualifications are required for installation of that system (including the land application area), the designer/manufacturer may nominate the appropriate qualifications, level of knowledge or training/expertise suitable for installation of their system..
- c) Servicing of an onsite wastewater system must be undertaken by a qualified service agent.
- d) The Department of Health will administer a central register of appropriately trained service agents. Private registered training organisations (RTOs) and TAFE provide training courses in other states for onsite wastewater systems servicing. Such courses will be considered appropriate training courses for the requirements of the Code. The Department of Health is undergoing consultation with several training bodies, to arrange similar courses in South Australia. The Department of Health may request further information or specific training before adding a name to the register.
- e) Introductory training for Council Environmental Health Officers (EHOs) in the requirements of the Code will be facilitated by officers of the Department of Health, along with ongoing technical support. The need for ongoing formal training will also be assessed.
- f) The Department of Health will provide owners of onsite wastewater systems with training, through development of information sheets and web-based training materials.

5.7. Planning Requirements

To facilitate better planning mechanisms at the planning stage, and to prevent installations of onsite wastewater systems on allotments which are not of acceptable size or don't have site properties suitable for onsite treatment and disposal of wastewater, the Code proposes the following:

- a) At the early development stages of a Plan Amendment Report (PAR), and for land divisions, the option of a reticulated community wastewater system must be compared with onsite servicing.

The chosen option must be demonstrated to best meet the performance requirements. This assessment must include public health, environmental, legal and economic factors which are likely to impinge on the siting and design of an onsite wastewater system, including the land application system and reserve land application area.

When the assessment has been undertaken and onsite wastewater systems have been chosen as the best option, then only the types of onsite wastewater system selected, including

disposal / land application types and any reserve area requirements, can be installed on each allotment.

- b) For systems that are on Aboriginal land, consultation must occur with the landholding authority (ie Aboriginal lands Trust, Maralinga Tjarutja and Anangu Pitjantjatjara Yankunytjatjara Lands) as part of the development proposal prior to submitting the application to Planning SA.
- c) During the early development stages of a PAR and for land divisions, a reserve irrigation shall be made available for future site expansion, for resting or duplication of the land application system if unforeseen circumstances require this at some time. The reserve area must be equal in area to the design land application site and is subject to the same setback requirements. No development shall be allowed on the reserve site. The requirement for a reserve area is in addition to recreation/open space requirements as specified by the relevant local council's development plan.

A reduction in the reserve area can only be achieved if the developer or designer demonstrates, to the satisfaction of the local council, that the proposed system will be sustainable with a reduced reserve area for the life of the system. This may include provisions such as:

- ❖ Council is committed to provision of a reticulated community wastewater system (CWWS) such as a sewerage, STEDS, STEPS, or vacuum system, to be installed within 5 years;
- ❖ The land application system incorporates specific design aspects such as dose loading or alternate loading of the design area, or a water balance has been undertaken for the site and is favourable for a reduced reserve land application area.

5.8. Setback distances

To better address the impact of onsite wastewater systems in sensitive environments such as Water Protection areas, coastal areas and the River Murray, the Code requires setbacks to water courses, bedrock and the water table to be based on final effluent quality, soil type, environmental circumstances and water resource issues. Specific requirements are outlined for Water Protection, River Murray and coastal areas.

For example, it is proposed that systems which treat wastewater (including greywater and blackwater) only to a primary level (eg septic tanks) are not permitted in Water Protection Areas (as defined by the EPA). This is to reduce nutrient loading and risk of microbiological contamination to the catchment for water quality and freshwater aquatic ecosystem protection.

For coastal areas, it is proposed that the setback distance to the marine environment be determined based on "mean high water spring", Coast Protection Board Policies and the Council Development Plan.

Areas along the River Murray currently have additional restrictions which will not be changed in the proposed Code.

Many of the existing setback requirements in regards to buildings and boundaries have been retained.

5.9. Holding Tanks

Under the proposed Code, the installation of holding tanks will not be permitted in new land divisions. Installation of holding tanks in existing allotments will be considered as a 'last resort' option. Installation of holding tanks will not be permitted for existing allotments in Water Protection areas without written approval from the Department of Health and other relevant Agencies (such as the EPA and DWLBC).

5.10. Responsibilities of all parties

Currently, a maintenance order can only be issued to the owner or occupier of a premises where an onsite wastewater system is installed. Manufacturers, designers, installers and servicing agents all have a responsibility to ensure that the system performs as intended and as such the relevant

authority requires the powers to issue a maintenance order on any one of these parties. These provisions have been included in the proposal.

The proposed Regulations also allow the relevant authority exemption provisions if an onsite wastewater system is installed without an approval from the relevant authority, or if the system installation is non-compliant with the requirements.

5.11. Grace Periods

Grace periods will apply for certain provisions after the Regulations and Code have been enacted, as follows:

- **Product Certification for all products:** Manufacturers with existing approvals from the Minister for Health are to notify the Department of Health within 12 months of their intention to undertake a product certification program, and these accreditations are to be achieved within 24 months of the endorsement of the Regulations and Code.
Any application for a new product will need to meet the product certification requirements prior to receiving an approval from the Minister.
- **Annual performance testing for effluent quality:** This will be applicable immediately for installed onsite wastewater systems on the basis of a random selection by the relevant authority.
- **Assessment of reticulated system versus onsite systems for new land divisions** at the early development stages of a Plan Amendment Report (PAR), and for land divisions: No grace period applies.
- **Reserve area requirement:** No grace period applies.
- **Training:** Grace period of 12 months will apply to service providers to be listed on the Department's recognised service providers list.

6. Proposed Regulations

The amendments to the Public and Environmental Health (Waste Control) Regulations have been developed taking into account the requirements of local and state government, industry and interstate health legislation to provide better management of onsite wastewater systems, to reduce failures of these systems and reduce the risk to public health. These Regulations are to be called the "Public and Environmental Health (Wastewater Systems) Regulations 2007."

The schedule of fees listed in the draft Regulations will be determined at a later date.

7. Analysis of Expected Costs and Benefits

7.1. Benefits

The analysis of benefits is based on a breakdown of the proposed changes and consultation with the relevant stakeholders. The proposal provides for a number of benefits to public health, the community and the environment.

7.1.1. Benefits to Local Councils

Local government supports the proposed regulatory package. This has been established through local council involvement throughout the consulting and drafting process. The proposed regulatory package will enable local councils:

- To have greater authority in approving installations for more types of onsite wastewater systems,
- To have more authority in ongoing management of onsite wastewater systems,
- To better manage public health and environmental issues concerning onsite wastewater systems in their local area, through reduced risk of failure and reduced risk of potential failures.

Under the proposed regulatory package, local councils will be approving a greater range of onsite systems models and types, with a limited capacity. This change is a 'give and take' arrangement between local councils and the Department of Health takes advantage of local council's intimate knowledge of their local areas and the experience gained over the past 10 years in dealing with onsite systems.

The administration by the Department of Health of a central register of service technicians who are appropriately trained to undertake servicing of onsite wastewater systems will assist local councils in the assessment of onsite wastewater system installations.

7.1.2. Benefits to Industry

Implementation of product certification programs will ensure that claims made by manufacturers of onsite wastewater systems are verified under controlled conditions, and that the manufacturing process consistently produces products to specification.

A cost benefit exists to SA manufacturers once they have achieved certification to the product certification program. They will be able to meet interstate product approval requirements and therefore apply for approval to sell / install their products in those states without undertaking further test procedures. This is because the proposed test procedures are in accordance with Australian/New Zealand Standards 1546 (parts 1, 2 or 3).

Service agents who are appropriately trained to undertake onsite wastewater servicing will be at an immediate advantage to others as they will not be required to undergo further training under the proposal.

Improved installation practices and ongoing management of installed systems will be promoted through self certification and independent certification of installed systems, annual performance testing of installed systems, Council inspection and audit programs, and training and accreditation of designers, plumbers, installers and service agents.

7.1.3. Benefits to the Homeowner, Community and Environment

The proposal ensures all aspects of onsite wastewater management (design, manufacture, installation and operation and maintenance) are considered with a consistent national approach through adoption of AS/NZS, which have already been adopted by NSW, Queensland and Victoria.

The proposal will help to ensure that domestic wastewater is collected, treated and disposed in an appropriate manner so as to reduce impacts to the environment and public health. The proposal will benefit the community, including regional areas, by providing for better planning mechanisms for new developments which may result in community infrastructure or suitably planned allotments with sufficient allowances for sustainable onsite wastewater management. Other impacts will be improvements to all aspects of onsite wastewater management which benefits public and environmental health through reduced risks of failures of these systems.

The proposal will ensure many environmental benefits in all areas of the State. The proposal includes changes to irrigation / disposal area setback distances, with particular attention to Water Protection areas, the River Murray and coastal areas. Changes to holding tank installations will also ensure long term sustainable options. This approach considers long term and short term environmental impacts.

The changes will reduce the incidence of failing systems, and the risk of potential failures, which have negative environmental impacts and potential public health risks. The proposed legislative changes will contribute to an overall improvement in public and environmental health and will benefit the receiving environments of all onsite wastewater systems.

The proposal will ensure that SA consumers have better access to quality-assured onsite wastewater systems, customer assurance of appropriately trained tradespersons and professionals, and greater flexibility in onsite wastewater management and system selection, which may increase employment opportunities in niche areas, eg new or low-technology wastewater management options.

The proposal aligns with Objective 2 (Improve Wellbeing), and Objective 3 (Attaining Sustainability) of South Australia's Strategic Plan. The proposal aims to increase sustainability of onsite wastewater systems and it increases the emphasis of prevention of failures of onsite systems thereby preventing risks to public and environmental health.

The proposal provides mechanisms for sustainable water management and water reuse and therefore aligns with the Water Proofing Adelaide strategy.

7.2. Costs

The analysis of costs is based on a breakdown of the proposed changes and consultation with the relevant stakeholders. The range of costs identified includes the following:

7.2.1. Local Council Costs

Through discussions with the Local Government Association, it is anticipated that local councils will need to initially dedicate additional resources to implement the Code and Regulations. This will include training of Environmental Health Officers in the new requirements, and setting up management practices to facilitate the Code (such as monitoring / auditing schemes, servicing of onsite systems), where council chooses. As no infrastructure changes are required, the Local Government Association anticipates that there will be no costly long term impacts on local councils.

Local councils will be required to administer the annual performance testing (refer to Section 5.5(d)) of a number of installed systems (to be selected at random by the Department of Health). This will incur increased regulatory costs, however measures will be put in place in the Regulations to allow local councils to redeem these expenses.

Introductory training for Council Environmental Health Officers (EHOs) in the requirements of the Code will be facilitated by officers of the Department of Health, along with ongoing technical support. This will assist in implementing the new regulatory requirements.

7.2.2. Industry Costs

The requirement for manufacturers to obtain certification to a product certification program product certification will require additional resources from the manufacturers. Sampling, testing and labour costs will differ depending on type and number of systems/models, the location of the test site, any additional tests for certain systems (eg nitrogen/phosphorous for nutrient removal designs), and whether the system meets performance requirements.

Table 7.1 indicates approximate costs for obtaining product certification for aerobic systems and septic tanks. Certification to the same AS/NZ standard for additional models by the same manufacturer is likely to incur a lesser fee. The table does not include costs incurred by manufacturers in terms of time and labour to implement the changes (assistance is usually provided from the product certification body as part of the application fee however). A cost impact may be incurred by regional manufacturers due to increased travel times for the testing agency (likely to be a one-off fee), however the licence application fee, and annual license fee is likely to be the same across the state.

Setup fees may also be incurred to arrange and set up a suitable testing site at a suitable location. This may also incur transport and travel costs for the manufacturer.

Some SA and interstate manufacturers already comply with these requirements and as such there will be no cost implications for these manufacturers.

Table 7-1: Product Certification Costs (indicative only)

<i>Costs Applicable to Manufacturers of Aerobic Systems and Septic Tanks</i>	<i>Approximate initial cost (\$)</i>	<i>Approximate ongoing cost (\$/annum)</i>
Product Certification for aerobic systems (based on certification to AS/NZS 1546.1 and AS/NZS 1546.3)	\$8,500 + \$6,000** per aerobic model tested	\$5,000
Product Certification for composting toilets (based on certification to AS/NZS 1546.1 and AS/NZS 1546.2)	\$8,500 + \$400 per composting toilet model tested	\$5,000
Product Certification for septic tanks (based on certification to AS/NZS 1546.1)	\$5,000 (for any number of models in range)	\$2,000

* costs are indicative only and include indicative license application fees, testing fees and annual licence fees. Costs do not include product certification body Royalties and GST. Costs are based on the number of Product Certification licences required for standard systems. Costs for non-standard systems will vary depending on the system.

** based on 26 weeks sampling and testing of BOD, SS and *E.coli*, including labour.

The restriction of septic tank effluent disposal in Water Protection areas will restrict installation of septic tanks without further treatment in these areas. This will impact on manufacturers who currently sell septic tanks in Water Protection areas, and will impact on manufacturers whose core business is septic tank production and currently install septic tanks in regional Water Protection areas.

For the 1st year of installation, manufacturers (or designers if it is a built in-situ system) of onsite wastewater systems (excluding septic tanks) will incur costs in order to carry out effluent/end-product testing of a randomly selected proportion of their installed systems, where necessary. Costs will depend on the type of system, the type and number of tests required and location of the site. In the second and subsequent years of installation, owners of installed systems will be responsible for such testing and will incur any costs.

Costs are estimated to be \$200 - \$300 per testing program, which includes the cost to sample and test biological oxygen demand, suspended solids and *E.coli* by a NATA accredited laboratory. Systems installed in regional areas may incur higher costs due to longer travel times for the sampler.

A manufacturer might have any number of systems installed in a year but the number to be tested is likely to be less than 10. In any case the maximum number of systems to be tested per manufacturer per year will be limited to 20.

Plumbers will be required to provide self-certification for their plumbing work. This is already required by SA Water for plumbing work throughout South Australia for SA Water systems, therefore plumbers should already have purchased compliance booklets. The cost to plumbers will be through additional use of the compliance booklets, which currently cost less than \$20 per booklet. Liability insurance costs may be incurred due to the requirement to provide a Certificate of Compliance.

Service agents will be required to undergo training, at their expense. The majority of service agents will be required to undergo training and this will incur a cost impact to them.

7.2.3. Homeowner Costs

In the second and subsequent years of installation, local councils will be responsible for administering annual performance testing of a number of installed systems (to be selected at random by the Department of Health). Measures will be put in place in the Regulations to allow local councils to redeem these expenses. This may result in increase application fees for all installations, at the owner's expense. Homeowners in regional areas may incur higher costs (through increased application fees) due to the greater distances required for sampling and testing.

Homeowners in Water Protection areas will be required to install onsite wastewater systems which produce a minimum of secondary quality effluent. Therefore the option of a standard septic tank system will not be available. If the homeowner installs an aerobic wastewater system they will incur an increased purchase and installation cost compared to a septic tank installation. The increased cost may be approximately \$2000 - \$4000 depending on the site and the type of system selected. Ongoing costs will also be greater for installation of aerobic systems compared to septic tank installations due to power costs and the requirement for quarterly servicing.

It should be noted that aerobic systems are not the only option for Water Protection areas and that low-tech and / or less expensive options remain, depending on their suitability for a particular site. These options will also be available in regional areas. The cost impact will therefore differ widely between systems selected.

Homeowners will be required to obtain soil assessments from a soil engineer or scientist and this will incur additional costs. The level of detail required for an application will also increase, to incorporate detailed site assessments, reserve area design and in some cases water balances and this will have a further cost impact.

Homeowners will incur the cost of independent certification (in cases where councils choose to request it) for the installation of an onsite wastewater system by an appropriately trained professional engineer or scientist. This is likely only to be used in special circumstances however given that plumbers will be providing a Certificate of Compliance for their work.

7.2.4. Training

Prior to implementation of the Code, the Department of Health will undertake training and information sessions for Council EHOs, manufacturers and designers, and owners of installed systems which will incur a cost to the Department of Health. This cost will be met within current budget / resource levels.

8. Educational Program

Prior to implementation of the regulatory package the Department of Health in conjunction with key industry and stakeholder organisations will provide an educational program on the provisions of the new Wastewater Systems Regulations and the Department of Health Onsite Wastewater Systems Code.

9. Implementation Plan

The timeframe for the implementation is as follows:

- Regulations drafted: November 2006;
- Discussion paper released and comments invited: December 2006 – March 2007;
- Comments assessed and Code and draft Regulations updated: April 2007 – May 2007;
- Final Regulations and report to Cabinet for approval: June 2007;
- Written information distributed and presentations to industry and State and local council stakeholder groups: July - September 2007;
- Local councils to begin to implement the Code: September 2007;
- Grace periods will be applied to certain requirements to enable smooth transition to the new Code and Regulations.

The following questions are posed so as to target comments and facilitate improvements to the regulatory package. It would be appreciated if these questions are considered when preparing the written submissions.

- 1. Is the assessment of costs and benefits considered appropriate for the scale and extent of impacts of the proposal to:**

- Public health;
 - Environment;
 - Small business, regional business;
 - Local councils; and
 - Homeowners.
2. **For business owners - in what ways and to what extent will the proposal impact your business (both positive and negative impacts)?**
 3. **Is the proposal supported? If not please indicate which areas are not supported and make suggestions for improvement.**

Comments

Questions and comments regarding the Code should be submitted **electronically** to:

Attention: Wastewater Management Section
public.health@health.sa.gov.au

PLEASE NOTE: The deadline for questions and comments is 5pm Friday 30 March 2007.

Where electronic submissions are not possible, please submit written comments to:

Wastewater Management Section
Applied Environmental Health
Department of Health
PO Box 6, RUNDLE MALL
ADELAIDE SA 5000

Persons wishing to discuss specific issues and/or seek clarification on matters addressed in the proposal can contact the Wastewater Management Section, telephone (08) 8226 7100.