

Developing Regional Policy for On-Site Wastewater Systems – Problems To Be Addressed

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INTRODUCTION

Many Regional Councils are facing similar problems dealing with the actual and potential effects of an increasing number of on-site wastewater systems in coastal and inland rural environment. Greater awareness of health and environmental risks are prompting both Regional Councils and system suppliers to tighten up on the permitting and design of on-site systems.

Of particular concern is the explosion of high density subdivisions, both rural lifestyle and coastal developments, and the servicing of low income communities without reticulated wastewater infrastructures.

This paper explores some of the problems facing the industry and in particular the Regional Councils who are charged with trying to regulate such systems. It also identifies possible regulatory and non regulatory options which may be appropriate to control the on-site and off-site effects of on-site systems. Feedback and discussion is welcome to help identify practical and effective ways of controlling the effects of on-site systems.

PROBLEMS

There are three main areas of concern for on-site wastewater systems:

- system design;
- system installation; and
- system operation and maintenance.

System design

Historically regional rules have focused on controlling the design of on-site systems. This has largely been achieved by making reference to design standards, such as those outlined in AS/NZS1547:2000 and the likes of TP58. Some councils have also specified effluent quality standards that have to be met. However, system design should be appropriate for site and operational conditions. For example aerobic treatment systems may have difficulty coping with shock loading at baches/cribs.

System Installation

Regional rules are typically silent on installation requirements. The supervision and approval of installation is typically left to the District Councils, or a condition on consent that a producer statement is provided on correct installation. This dual authority overlap can create problems as the expectations and administration of the relevant requirements of the two can be somewhat confused. District Councils approve installation under the Building Act (2004), with a primary

purpose of providing a safe and serviceable sanitary wastewater system, with the emphasis on health and safety for the occupants; whereas the Regional Councils' focus is often more on the effects of the system on the receiving environment and the general public. Often district council inspectors have limited regard for the potential environmental or cumulative effects, or if they do they do not have the statutory framework to require environmental or cumulative affects to be addressed. Essentially their role is ensuring the systems are design and installed in accordance with appropriate rules, and if the rules are silent on certain aspects, then the district councils have difficulty requesting additional considerations to be addressed.

System Operation and Maintenance

Most existing rules in regional plans put no requirement on the operation and servicing of on-site systems. While traditional septic tank systems may require desludging every 3 - 5 years (or longer depending on use), package plant systems have considerably more components such as pumps, valves, switches, etc., which require regular servicing. The operation and maintenance requirements can vary depending on permanent vs seasonal occupancy, the type of components, the quality of the components and the system design.

In addition there is the problem of out of sight, out of mind. While the treatment plant is critical, so to is the discharge system. The treatment plant can be inspected and samples measured to check performance; while the discharge system is typically out of sight and difficult to view and check its performance. For this very reason many property owners are oblivious to operational and maintenance requirements, or the fact they have an on-site system. This problem is usually overcome if a consent has been issued requiring a maintenance contract that includes drip line flushing and/or pressure testing.

Typically it is the performance of the system rather than the design of the system that matters, however good design and installation does go a long way to helping with system performance.

MAIN PROBLEMS IDENTIFIED BY COUNCILS

The problems of concern to individual councils are varied and often reflects the sensitivity of the local environment and the priority of the problem in relation to other regional/district problems. Main concerns that councils often have include:

- The problem is bigger than can be quantified, so they don't want to address it;
- Capturing existing and new developments within regional policy;
- Trying to avoid over bureaucratic processes;
- An often weak link between RC and TLAs allowing problems to slip through the cracks;
- Non-uniformity among TLAs regarding on-site system design requirements;
- Despite the use of advanced treatment systems, should on-site systems be prohibited in sensitive environments?;
- How can permitted systems be checked and who pays for it?;
- How to impose a restriction on the level of treatment required for a particular community, especially when there is spatial variation within the community;
- How to deal with existing low income communities with known problems; and

- How to educate people to let them know they have an on-site system and that it needs maintaining.

OPTIONS TO ADDRESS THE PROBLEMS

In order to overcome the problems described above, Regional Councils need to develop effective policies and rules. Some of the policies and rules that have been used and suggested include the following:

Design

- Accept lower quality effluent but more reliable operation with a less complicated treatment system
- Reduce permitted activity threshold by specifying performance standards
- Use code of compliance
- Develop regional spatial zones and treatment categories within those zones
- Require greater site investigations in sensitive areas
- Require greater degree of assessment when housing density exceeds a nominated threshold
- Require treatment plants to achieve certification prior to installation
- Requiring designers to have obtained an approved certification
- Specify types of accepted treatment systems
- Use prohibited rules to protect certain sensitive areas with high development demand

Installation

- Place covenants on property titles at subdivision stage identifying the location of the system and need to have the system maintained
- Request permanent sticker to be established within the house (e.g. wall beside the toilet) to warn users (including any new owner/visitor) the dwelling is serviced by on-site wastewater system (many baches have already such stickers put up by owner to warn visitors of limited water supply and only toilet paper is allowed to be flushed)
- Requiring installers to have obtained an approved certification
- Require installers to supply as built plans
- Attach a copy of the system location and design to property's certificate of title
- Mark out and fence off the discharge area
- RC inspect systems (a selection) with TLA inspectors

Operation and Maintenance

- Undertake council funded audits of small percentage of systems to ensure maintenance is being carried out
- Require thorough inspection of discharge system in addition to treatment plant
- Providing for less stringent monitoring for certified systems
- Require hard wiring to the electrical components so that when occupants leave the property, power is still available to the on-site system
- Require inspection of the on-site wastewater system as part of the sale and purchase process
- Require maintenance certificate to be provided to RC annually
- Requiring maintainers to have obtained an approved certification

Policy General

- Provide clearer rules and more guidance to the TLAs
- Educate TLA and public about nutrient and pathogen content if not working well
- Send maintenance reminder notices to all on-site property owners with rates demand
- Educate about water conservation, use of garbage grinders, maintenance
- Run regular workshops for TLA and local designers and installers

No doubt there are many more options to those identified above. Discussion and debate on the appropriateness of these options, and the identification of new options is welcome.

DISCUSSION

On-site systems, including new advanced treatment systems, have the potential to create adverse environmental effects through poor design, installation, and operation and maintenance.

Regional policies and rules should address through both regulatory and non regulatory means the design, installation, and operation and maintenance requirements. It is likely to be a better outcome for both the environment and developers/home owners, if permitted activity rules are developed that are appropriate for each region that covers all three aspects. These rules should set a moderately high threshold to be permitted activity and should take into account likely soils, topography and groundwater depth/use in the region (the region could be broken into zones based on these), likely treatment system quality outputs, installation procedures, and annual maintenance requirements.

Household surveys undertaken by GPF have shown there is a very poor community awareness of the requirements on onsite systems. Many residents are unaware that they were connected to an on-site system. Furthermore they were unaware of the impact of what they flushed down and the need for regular servicing. This applied to conventional septic tanks and new treatment plants. Through policy, council's should consider generating greater awareness of system owners and users to ensure that failure and problems do not develop.

CONCLUSIONS

Effective regional policies and rules are required to address current problems and future problems with on-site systems.

While there are a number of regulatory solutions to address on-site problems, they have to be practical and implemented in a way that minimizes bureaucracy and excessive red tape.

It is essential that policies, standards and rules are developed that are appropriate to the areas within a region, potentially requiring parallel controls for environments with different sensitivities.

An integrated approach involving the system users and designers, and incorporating District Council's is essential. This should involve regular communication during design, installation and system operation.

There needs to be legislative requirements to ensure that on-site systems are not installed and forgotten about, including covenants on titles, inspection requirements and the use of a regional monitoring program to check performance on an ongoing basis.

The maintenance and operation of on-site systems is just as important as the design and installation.