

# Byron Shire Council

## On-site Sewage Management Strategy



Protecting the environment and health  
of Byron Shire

NOVEMBER 2001



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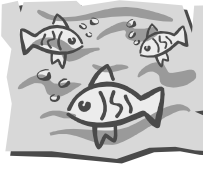
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#### DISCLAIMER

The information provided in this booklet is provided by Council in good faith as a guide only to Council requirements. This information should not be relied upon in reaching a decision to purchase property.

Community consultation is an important part of the application assessment process and Council reserves the right to vary policy requirements where the circumstances or issues of public interest so warrant.

## Foreword



This strategy provides Byron Shire Council's response to its management responsibilities under the Local Government Act 1993 and the introduction of NSW Environment and Health Protection Guidelines 1998.

Management of sewage from humans is an important issue when looking at water quality issues in a catchment. Evidence suggests that many on-site sewage management systems do not meet environmental and public health requirements.

In March 1998 changes were announced to the sewage management regulations. The NSW Government is taking a consistent and comprehensive approach to the use of septic tanks and other on-site sewage systems. A working group of government agencies, (including the NSW Department of Local Government, the NSW Environment Protection Authority, the NSW Department of Health, the NSW Department of Land and Water Conservation and the NSW Department of Urban Affairs and Planning), in consultation with the community, developed guidelines for on-site sewage management which ensured that all major environmental and health issues were considered.

Under these new regulations and guidelines for on-site sewage management, councils and landowners must ensure that:

- ◆ surface and ground water resources are protected;
- ◆ degradation of land and vegetation systems is prevented;
- ◆ public health risks are prevented;
- ◆ natural resources reuse (wastewater irrigation, compost) and Ecologically Sustainable Development are promoted; and
- ◆ activities that are dependent on waterways are not adversely impacted (e.g. swimming, tourism and oyster growing).

Councils also have specific responsibility under local government legislation to:

- ◆ maintain a register of approvals granted for on-site sewage management systems; and
- ◆ prepare annual updates of State of the Environment reports for their areas showing details of polluted areas and on-site sewage management policies, performance of on-site sewage management systems and the cumulative impacts of those systems on catchments within the councils area.

Every council is now required to prepare an on-site sewage management strategy suitable for its local area.

## What is covered in this strategy?



Byron Shire Council's On-Site Sewage Management Strategy (OSMS) includes:

- ◆ Council's vision for on-site sewage management;
- ◆ the relationship of this strategy to other council management strategies;
- ◆ the scope, aims and objectives of the OSMS;
- ◆ performance indicators and milestones;
- ◆ the strategy for existing systems;
- ◆ the strategy for new systems;
- ◆ Council's approach to small allotments and constrained sites; and
- ◆ standards, inspections, orders and offences.

## Further information



Specific information on system design and the range of options available to land owners can be found in the following booklets produced by Byron Shire Council:

- ◆ *Design Guidelines for On-site Sewage Management Systems* (a technical manual for system designers); and
- ◆ *Home Owners guide to On-Site Sewage Management* (a plain English guide for land owners).

More detailed information can be found in the State guidelines: *Environment and Health Protection Guidelines: On-site Sewage Management for Single Households*, available from the NSW Department of Local Government. This document can be downloaded from [www.dlg.nsw.gov.au](http://www.dlg.nsw.gov.au) by following the prompts.

For more information please see:

- ◆ NSW Department of Health at [www.health.nsw.gov.au/public-health/ehb/general/](http://www.health.nsw.gov.au/public-health/ehb/general/).
- ◆ Byron Council website: [http://www.byron.nsw.gov.au/health\\_and\\_compliance](http://www.byron.nsw.gov.au/health_and_compliance).

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## Challenges for on-site sewage management in Byron Shire



The principles of ecologically sustainable development highlight the interdependency of economic, biological and social impacts of pollution.

Examples of these impacts that are relevant to the catchments in the Byron Shire include:

- ◆ economic impacts – loss of fisheries, oyster production and tourism;
- ◆ social impacts– opportunity loss of recreational activities including swimming and fishing, and effects of waterborne diseases on community and individuals; and
- ◆ biological impacts – decreased bio-diversity and habitat loss.

Byron Shire Council is presently developing and implementing strategies to prevent effluent from on-site wastewater/sewage systems (septics, aerated wastewater treatment systems, wetlands, composting toilets etc) entering groundwater, rivers, creeks and intermittent streams that are conduits to our estuaries and ocean. Along with improvements to Byron's centralised wastewater/sewage plants, these changes are to ensure improvement and protection of our environment, fisheries, oyster leases, recreational activities and public health.

In Byron Shire there are at least 3,000 existing on-site sewage management systems, mostly septic tanks with conventional trench systems. Many systems are located in high-risk, sensitive environments close to creeks and intermittent waterways.

Within the Byron Shire a number of specific constraints need to be considered and overcome, including:

- seasonally high average rainfall compared to other parts of NSW;
- existing on-site systems already installed that are failing due to poor design and overloading;
- existing dwellings and subdivisions now identified (with the benefit of hindsight) as unsuitable for on-site disposal e.g. small allotments close to waterways, located on steep and/or flood prone land;
- lack of compliance resulting in many non-approved dwellings, sheds, caravans and campsites without adequate waste treatment facilities; and
- generally poor understanding of the need for maintenance and special operating requirements for on-site systems.

Byron Shire Council's On-site Sewage Management Strategy has been developed so that Council can work with land holders to ensure the effective operation and maintenance of on-site sewage management systems and the protection of our waterways from sewage pollution.

## Vision



*'Sewage will be managed in a sustainable way that achieves best practice and high standards of public health, protects and enhances the natural environment, achieves maximum resource recovery and meets the needs and expectations of existing and future communities'*

### **Byron Shire Council Sewage Management Strategy, August 1999.**

The vision for a sustainable future requires the preparation of long-term management strategies that provide guidance and well-defined aims and objectives to achieve desired future outcomes. The Byron On-site Sewage Management Strategy forms an important part of Council's vision for wastewater management.

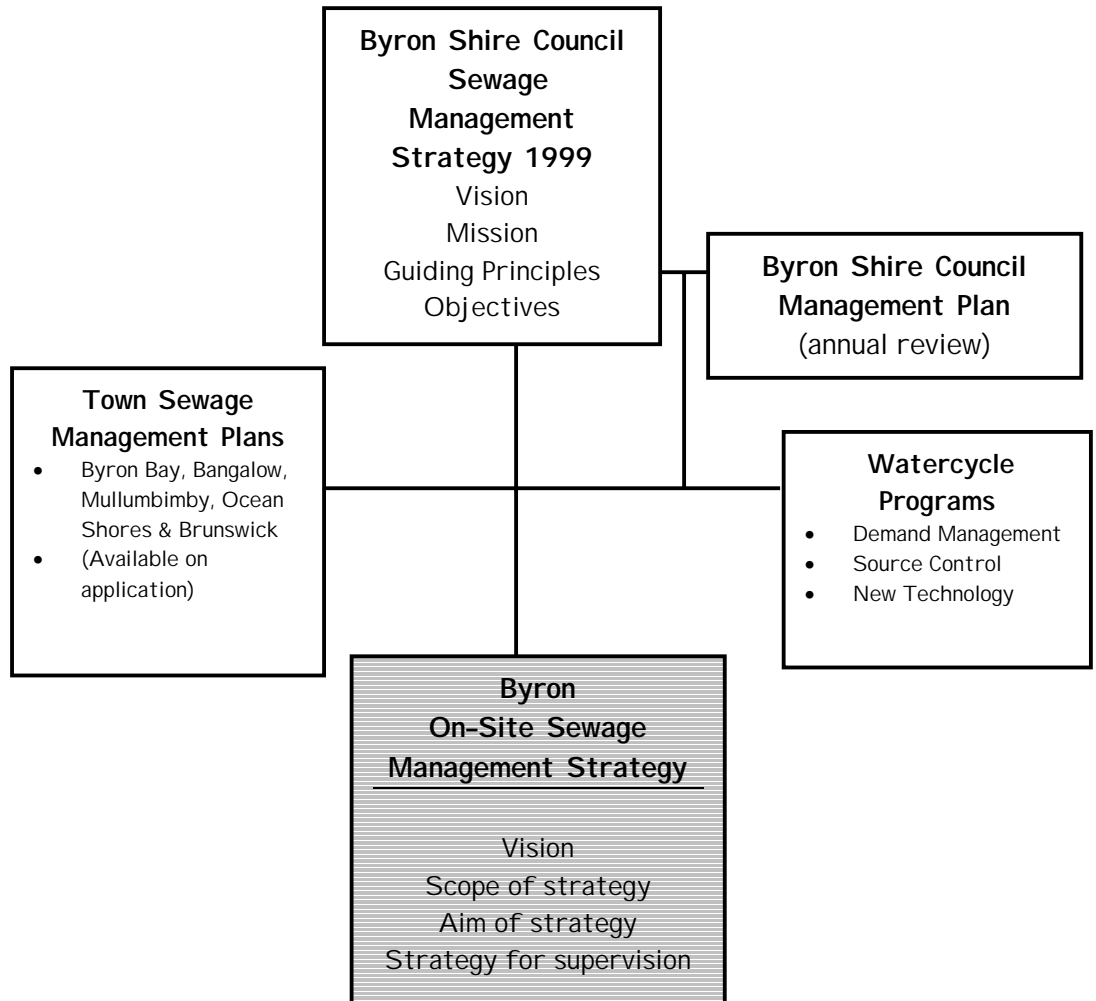
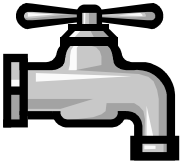


Figure 1. Relationship of on-site strategy to other Council management strategies

## Scope of this strategy



The Byron on-site sewage management strategy applies to the entire Council area and to all types of human waste disposal where council is the appropriate regulatory authority (ARA). All systems from the humble 'pit toilet' to the multiple process sewerage treatment facilities (up to 2,500EP) are affected.

The strategy will:

- ◆ provide a framework within the Byron Shire for the management of on-site sewage management systems;
- ◆ identify procedures and resources required for the efficient supervision and management of on-site sewage management systems; and
- ◆ coordinate environmental assessment, data collection and monitoring of on-site sewage management systems.

To encourage 'best practice' solutions and to allow for options that will provide sustainable usage of natural resources, this strategy applies to sewered and unsewered areas.

On-site sewage management systems regulated under this strategy may therefore include provisions for treatment and reuse on-site, partial treatment on-site and partial discharge of wastes to a reticulated sewerage system. Council encourages design innovations that do not compromise other regulatory controls\* or environment and health protection standards.

Implementation of the strategy will eventually achieve improved community education and information, provide better options for undeveloped sites and improve management and operation of existing systems.

### **Best management practice**

Those approaches that have been developed to prevent or minimise water pollution at source, or as close to the source as practicable.

They include those practices determined to be the most effective and practicable ways of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

### **Exclusions**

Sewerage Treatment Plants (STPs) owned and operated by Byron Shire Council are the subject of specific individual management strategies and are not considered in this strategy. (Note: management strategies for all six Council owned sewage treatment plants to ensure full compliance with environment and health protection measures are well advanced.)

\*Connection to reticulated sewerage schemes is regulated under Clause 45 of Byron Local Environmental Plan 1988.

## The aims of strategy



The aims of the strategy are;

- ◆ to protect surface and groundwater resources;
- ◆ to prevent degradation of land and vegetation systems;
- ◆ to prevent public health risks;
- ◆ to encourage the reuse of resources such as water and nutrients;
- ◆ to promote ecologically sustainable development; and
- ◆ to encourage economic forms of sewage management.

## The objectives of the strategy



Each of the following objectives reflects a major policy with attendant management, regulatory and financial obligations on Council.

The objectives are:

- to regulate the installation and alteration of new on-site systems;
- to provide direction regarding supervision and management of existing on-site systems; and
- to assist owners and operators of on-site sewage management systems through the dissemination of information and educational materials.

## Milestones



The key accountabilities identified in this strategy will be achieved where it is demonstrated the following milestones have been met.

### **Milestone 1 – Compliance with Local Government Act 1993**

Applications for the installation, alteration or construction of new on-site sewage management systems are processed in accordance with the provisions of the NSW Local Government Act 1993 and Local Government (Approvals) Regulation 1999.

### **Milestone 2 – Compliance with NSW Environment and Health Protection Guidelines**

Approvals are granted for on-site sewage management systems that comply with the NSW Environment and Health Protection Guidelines 1988.

The supporting principles include:

- 1) Performance outcomes – wider environmental outcomes need to be considered, specifically the need to protect land and water resources and public health, preferably on a catchment basis.
- 2) Appropriate treatment – level of treatment should be dependent on the nature and sensitivity of the receiving environment and the potential uses of treated wastewater and biosolids.
- 3) Productive re-use of wastewater components – including water, nutrients such as nitrogen and phosphorus can be value added if managed wisely.
- 4) Reliability – it is inappropriate to install a sewage management system and to expect it to perform adequately without proper supervision, maintenance and performance assessment.
- 5) Long-term impacts – comply with first principles:
  - a) ecologically sustainable development (ESD)
  - b) water cycle management
  - c) total catchment management
  - d) protection of public health and the prevention of public health risk.

### **Milestone 3 – Compliance with Council policy for existing systems**

This policy acknowledges the overwhelming scientific and legal advice that requires improvements in the way existing on-site sewage management systems are operated and maintained. The requirements of this policy must be met prior to issue of an 'approval to operate' an existing on-site sewage management system.

### **Milestone 4 - Compliance with Environmental Planning and Assessment Act 1979**

Applications for the installation, alteration or construction of new on-site sewage management systems are processed in accordance with the provisions of Section 78A of the Environment Planning and Assessment Act 1979.



### **Milestone 5 - Compliance with NSW Coastal Policy 1997**

Applies within 1km of the ocean. Council is required to consider the coastal policy in determining development applications. Application of policy considers estuarine issues, water quality and ecology. The key objectives are:

- assessment of ambient water quality objectives, implementing best practise and better plans to minimise pollution;
- basing waste water discharge limits on ambient Australian Water Quality objectives; and
- development proposals in or adjacent to estuaries should only be approved where impacts are minimised.

Council should reject proposals with potential adverse impact on the coastal zone.

### **Milestone 6 - Compliance with Protection of the Env. Operations Act 1997**

The objects of the act include:

- to protect, restore and enhance the quality of the environment in New South Wales having regard to the need to maintain ecologically sustainable development.

Under the Protection of the Environment Operations Act 1997 (POEO) Council is the appropriate regulatory authority (ARA) for sewage treatment plants less than 2,500 equivalent persons or less than 750 kl per day. Unlike the Environment Protection Authority Council is not able to issue pollution licenses. Council can only issue approvals for activities that will not cause or result in pollution of the environment

### **Milestone 7 - Compliance with Byron Local Environmental Plan**

Implementation of the aims, objectives and guiding principles of Byron Local Environmental Plan 1988 (BLEP), in particular the following aims:

- 1) The application to proposed development of guiding principles for the management, development and conservation of natural and human made resources...
- 2) Protection of the environment including the protection and conservation of...'natural resources' and ecological communities and their habitats
- 3) The provision for public involvement and participation in environmental planning....

In particular the following objectives:

- a) To enhance individual and community well being by following a path of economic development that safeguards future generations
- b) Provision for intergenerational equity ...
- c) To protect bio-diversity, re-establish and enhance ecological processes....

In particular the following principles:

- a) The precautionary principle – carefully consider the potential impacts...
- b) The principle of intergenerational equity – to pass on healthy and productive waterways
- c) Conserving biological diversity and ecological integrity – protecting aquatic habitats
- d) Eliminating or reducing to harmless levels any discharges into the air, water and land of substances...arising from human activities that are likely to cause harm to the environment.
- e) The principle of providing credible information in open and accountable processes to encourage and assist the effective participation of local communities....

See also BLEP zone objectives for provision of services ie wastewater disposal and Clause 45, which generally requires provision of adequate services for a development.



### **Milestone 8 - Compliance with Byron Rural Settlement Strategy 1998**

Compliance with the aims, objectives and performance standards provided for wastewater treatment and management of effluent provided in the Byron Rural Settlement Strategy 1998.

In particular the following aim:

- ◆ That on-site domestic sewage management facilities operate in a manner which protects and enhances public health, achieves ecologically sustainable environmental standards for air, land and water, and is socially acceptable to the community.

In particular the following objectives:

- ◆ To ensure the cumulative impact of sewage transport, treatment and disposal/re-use systems in rural settlement areas is ecologically sustainable.
- ◆ To minimise the public health and environmental risk posed by the generation and treatment of effluent in rural settlement areas.
- ◆ To ensure rural settlement allotments, not connected to a centralised sewage management system, are capable of treating sewage in a reliable, safe and sustainable manner within their respective boundaries or, in the case of common sewage management facilities, as part of a functioning community-based sewage management system.
- ◆ To ensure sewage management facilities are selected to meet site-specific constraints.
- ◆ To ensure sewage management facilities are operated efficiently, adequately monitored and maintained to ensure reliable, safe performance throughout their operating life.
- ◆ To facilitate the use of common sewage facilities for rural settlement, where such treatment is effective and ecologically sustainable through an individual management system.
- ◆ To facilitate the re-use of sewage of a quality from rural settlement for irrigation of gardens, agro-forestry, silviculture, reforestation, environmental repair and the like.

Relevant performance standards are defined in the rural settlement strategy.

Note: The Rural Residential Strategy is 'called up' by Byron LEP, Clause 2.

### **Milestone 9 - Compliance with Performance Standards**

Sewage management systems are operated in a manner that achieves the following performance standards specified in the NSW Local Government (Approvals) Regulation 1999.

- ◆ the prevention of the spread of disease by micro-organisms;
- ◆ the prevention of the spread of foul odours;
- ◆ the prevention of contamination of water;
- ◆ the prevention of degradation of soil and vegetation;
- ◆ the discouragement of insects and vermin;
- ◆ ensuring that persons do not come into contact with untreated sewage or effluent (whether treated or not) in their ordinary activities on the premises concerned;
- ◆ the minimisation of any adverse impacts on the amenity of the premises and surrounding lands; and
- ◆ if appropriate, provision for the re-use of resources (including nutrients, organic matter and water).



### **Milestone 10 - Supervision of Construction**

To ensure construction work is carried out in accordance with Council approval conditions and relevant codes of practice by suitably qualified tradesperson.

- ◆ Australian Standard AS1547: 2000, 'On-site domestic-wastewater management' provides construction standards only. The standard should not be used for system design as it does not provide for sustainable reuse of wastewater.
- ◆ AS1546.1:1998 On-site Domestic Wastewater Treatment Units - Septic Tanks.
- ◆ AS1546.2:2001 On-site Domestic Wastewater Treatment Units - Waterless Compost Toilets.
- ◆ AS1546.3:2001 On-site Domestic Wastewater Treatment Units - Aerated Wastewater Treatment Systems.

### **Milestone 11 – Development of a Compliance Policy**

Development of a compliance agreement with the owners of non-approved dwellings, sheds, camps sites and unattached dual occupancies currently not approved or not permitted under Council's local environmental plan.

### **Milestone 12 – Provision of information services**

The provision of computer services and recording systems for all aspects of applications management, data processing and community access to information. Linking of database information to 'waste safe' management and other Council database management systems.

Including the provision of a list of approvals issued by Council.

### **Milestone 13 – Maintenance of fee for service principles**

Application and inspection fees are determined to reflect the actual costs to Council of undertaking these functions. Application and inspection fees are set each 12 months in Council's Fees and Charges Policy, which is advertised for public comment prior to adoption.

### **Milestone 14 – Review and continual improvement**

Council aims for review and continual improvement in the implementation of this strategy. There will be reviews and updates every five years on:

1. compliance with stated objectives, and
2. specific performance measures identified in Council's annual management plan.

Note: A consultancy brief has been drafted for a study to investigate cumulative impacts of on-site sewage systems. Grant funding is to be sought for this proposal to proceed.

## Our obligations and responsibilities



The New South Wales Government has implemented legislative reforms that have clearly transferred responsibility from the State Government to Council and landowners. Thus Council and landowners have a defined responsibility to manage on-site systems more effectively in the future than has occurred in the past.

Systems need to adequately distribute hydraulic load, prevent nutrient impacts and remove contact with pathogens to avert pollution and public health impacts

## The new 'approval to operate' system



'Approval to operate' a system of sewage management is required under Section 68(F10) of the Local Government Act 1993 and clause 45 of the Local Government (Approvals) Regulation 1999.

Landowners or occupiers must now nominate a designated person to apply to operate the sewage management system associated with the residence or activity on the land owned or occupied by them.

An 'approval to operate' requires the operator to take all reasonable steps to prevent:

- ◆ transmission of disease and spread of foul odours;
- ◆ pollution of water and degradation of land;
- ◆ any discharge to a watercourse; and
- ◆ any discharge to land other than the approved effluent application area that may occur as a result of on-site sewage management activities.

This applies to new, altered and existing systems.

Council 'approval to operate' a system of sewage management is personal and does not run with the land. It is the activity of sewage management, not the facilities, which is the subject of the approval.

The approval process establishes a relationship between Council and the owner to improve awareness of environmental and health risks and also the maintenance and operating requirements for their system.

### Application fees

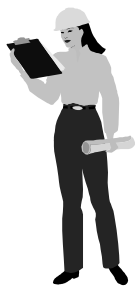
Application fees for approvals to operate are expended on the cost of processing applications, development and implementation of Council's on-site sewage management strategy, provision of advice and assistance to owners of existing systems and enforcement of legislative provisions.

### Exemptions

Exemptions from the need to obtain an approval apply to:

- ◆ premises licensed by the Environment Protection Authority;
- ◆ human waste systems installed in vessels and registered vehicles; and
- ◆ exemptions permitted by a Local Approval Policy (e.g. camping toilets).

## The strategy for existing systems



Council plans to inspect all properties within the shire that have on-site sewage management systems. This process will take several years to complete.

All owners of existing systems are required to lodge an application with Council for an 'approval to operate' (the fee is currently \$30). Around 96% of owners have already lodged applications.

### **System inspection**

Prior to making a decision on each application, Council will carry out an inspection and complete an environment and health risk assessment. This survey will maintain a catchment focus working with community groups. The inspection will determine which systems need to be upgraded to prevent any adverse environmental and/or health impacts. Where no defects are noted an 'approval to operate' will be granted for a period of 12 months. Alternatively, action may commence to require repairs or upgrading.

### **Annual Renewal**

After the initial inspection property owners will be required to lodge an annual application for renewal of the 'approval to operate' an on-site sewage management system and pay the appropriate fees (currently \$30/ET).

### **Automatic renewals**

For systems that DO NOT require upgrading an automatic renewal is available when the installed system has been approved and inspected by Council. Regular service and maintenance reports must be provided to Council.

For systems that DO require upgrading an automatic renewal is available when the owners agree to complete an environmental and health impact assessment and upgrade within a reasonable period dependant upon risk (to a maximum of five years). Regular service and maintenance reports must be provided to Council.

Council will undertake a review of approval requirements every five years.

### **Owner Awareness**

All property owners will be provided with self-assessment tools and encouraged to participate and assist in undertaking environment and health risk assessments and choice of system. The design of some systems requires that qualified persons carry out maintenance. *The Home Owners Guide to On-Site Sewage Management* booklet provides guidelines for maintenance and servicing, environmental assessment and system upgrading.

See also 'Existing Dwellings, Small Allotments and Constrained Sites' on page 17.

## The strategy for new systems



Council must approve the installation of all new on-site sewage management systems and those requiring upgrades. The application for approval must be accompanied by a report that has accurate site plans, full specifications and a detailed site assessment.

There is no one ideal solution for all sites, all systems or all users. There are numerous systems available for wastewater treatment and owners can use a checklist provided by Council to assist their decision-making process. The main emphasis is on assessing the suitability of each site for the intended development.

Considering the variability in site conditions, it may be necessary for land owners to have their wastewater systems designed by suitably qualified consultants who will supply a report to support an application to Council.

Council's *Design Guidelines for On-site Sewage Management Systems* advises that the following steps should be followed when preparing an on-site sewage management report.

### **STEP 1. Desktop assessment**

Obtain background and current information on the property through Council.

### **STEP 2. Site Assessment**

Undertake a comprehensive assessment of the site environmental conditions and examine management issues and constraints. The assessment includes soil assessment and evaluation of features such as flood potential, erosion potential, buffer distances and land areas.

### **STEP 3. Calculate residents needs and required system capacity**

Base your assessment on the number of residents and number of bedrooms in the building (Minimum 1.5 persons / Bedroom). Calculate hydraulic Load.

### **STEP 4. Calculate effluent quality and size of application area**

- ◆ Calculate irrigation areas needed for nitrogen re-use.
- ◆ Calculate irrigation areas needed for phosphorous re-use.

### **STEP 5 - Compare areas available on site (Step 3) and area required (Step 4)**

Determine limiting design factor i.e. hydraulic load, nitrogen or phosphorus. Note: In local soils utilising secondary treated effluent, hydraulic load will generally be the most limiting criteria.

### **STEP 6. Small allotments and constrained sites**

If calculations (Step 5) indicate that insufficient land area is available, best management practice is required. Full compliance may not be possible.

### **STEP 7 - Other related issues**

Consider greywater and Irrigation issues.

### **STEP 8 - Choose the system**

A range of options is shown.

*Model site report and application forms are available from Council website at <http://www.byron.nsw.gov.au>.*



### Installation

Installation must be carried out by suitably qualified tradespersons according to Council approval conditions and the tradesperson must obtain a permit from Council's Environmental Health Officer. Council will carry out a program of inspection at each stage of construction.

### Annual Renewal

Once the new system has been approved, installed and inspected property owners will be required to lodge an annual application for renewal of the 'approval to operate' an on-site sewage management system and pay the appropriate fees except where automatic renewals are permitted. See page 15.

## Small allotments and constrained sites



Due to past subdivision practices Council must now deal with sites that are highly constrained and environmentally sensitive. When assessing these constrained sites, total compliance with prescriptive criteria may not be possible. In such cases Council will consider the objectives of this policy and regulations and adopt 'best practice'.

The NSW Environment and Health Protection Guidelines suggest that '*if an alternative approach or existing situation conflicts with these Guidelines, options other than those might be acceptable, providing that they meet the performance objectives described on page 16, and satisfy the requirements of all relevant statutory authorities*' (see NSW EHP Guidelines p9).

A 'best practice' and risk assessment approach involves land owners considering these objectives, then developing a design based on what can reasonably be achieved.

Council recommends that landowners take the following approach when preparing an application for development on these sites.

1. Consider all options for off-site treatment based on effluent disposal and effluent reuse. In particular consideration should be given to connection to reticulated sewerage systems that may be available. See **Septic ✓ Safe** Technical Sheet 'Community Treatment Systems'.
2. Consider the limitations and capacity of the site. Is the development appropriate for the site?

Generally a three bedroom dwelling would be considered a 'reasonable' level of development on any existing approved allotment. Multi-unit developments including dual occupancies, bed and breakfast, restaurants and motels are generally not appropriate for small allotments or constrained sites.

3. Consider the potential risk to the environment and especially sensitive areas. Is the development likely to result in significant environmental damage? Undertake an environment and public health risk assessment details of which are provided in the 'Model Site Report - NSW EHP Guidelines 1998, p.144'.

Council is not able to approve development that will cause or result in significant harm to the environment.

4. Locate the treatment system and application area in the most suitable (least constrained) location available on the site. Where conflict arises between location of structures and the on-site sewage management system (OSMS), preference should be given to locate the OSMS in a position that will ensure its long-term reliability and efficiency.
5. Maximise the site area available for effluent application (treatment). This requires additional site planning to ensure that the future location of driveways, retaining walls, outbuildings and swimming pools will not reduce land areas available for the application area.
6. Maintain, where possible, all necessary buffer distances. In most circumstances, statutory site buffer distances to waterways, boundaries, driveways and buildings (including swimming pools) may need to be varied.

Suitable plant species should be planted in the effluent area that will maximise the efficiency of the site area available for effluent application (treatment). A list of suitable plant species is provided in Attachment 5.

7. Sites with unsuitable soils or poor drainage conditions (e.g. heavy clays) should be topdressed with at least 200mm of a loam topsoil free of clay or 100mm of topsoil and 100mm of mulch.

Adequate surface and/or subsurface drainage systems should be installed and maintained.

8. Choose a level of treatment consequent to the risk (i.e. minimise impact). Higher levels of treatment produce a cleaner, safer effluent that means a smaller application area is required. Council recommends waterless compost toilet systems to reduce water usage and improve effluent quality.
9. Plan for adequate maintenance, monitoring and inspections to reduce the risk and impact of system failure.

Experience indicates that there is no standard solution for any site. Each site and each owner have specific requirements that must be addressed. Council encourages owners of constrained sites to make an appointment to discuss the issue with Council officers. Please note that regardless of the circumstances, Council cannot approve 'inappropriate development' where that is likely to harm the environment or public health.

Pumping out to tankers and transfer of wastes to other treatment plants is not considered a sustainable long-term option for sewage management. The prohibitive cost and ineffectiveness of these options have been demonstrated at many locations. Applications for pump out must establish there is no viable option for on-site sewage treatment.

## Development of an approvals management system



The basis of the new management system is a database of registered on-site sewage facilities operators. To date 90% of operators have registered. This database is linked to the Geographic Information System (GIS) to assist in the management of on-site systems and the environment in the Shire.

The database management system provides an information service relating to;

- ◆ the estimated 300 new owners each year – recording system installation, maintenance and servicing requirements for the new owner;
- ◆ the estimated 50 – 75 new system installations each year – updates of database records and details of new systems; and
- ◆ the recurring maintenance of existing systems – audits of service reports.

## Compliance with regulations



The emphasis in this policy is about developing partnerships between Council and owners to achieve agreed targets for improvements in environment and health protection. It is incumbent upon Council to describe the legal processes and ensure that owners are fully aware of the implications of decisions.

Prosecution powers are a last resort, reserved for cases of flagrant and persistent refusal to meet legislative responsibilities. Owners of on-site sewage management systems that are an environment or public health risk need to demonstrate by persistent and ongoing endeavour that they are attempting to resolve the situation.

Generally, positive improvements to systems management can be achieved by addressing the following;

- upgrading or staged replacement of system components;
- improved operational practices e.g. reducing inputs, water conservation; and
- better and more frequent maintenance and servicing.

If enforcement action is necessary to address evident faults or persistent mismanagement council's powers will be exercised in a manner that observes the principles of natural justice and procedural requirements of the Act.



### Council Inspections

The statutory powers of the Council in relation to inspections are set out in s.192 of the Local Government Act 1993. An authorised Council officer may carry out inspections where a complaint is received, as required by a condition of an approval or by agreement with the landowner.

Notice of Council's intention to inspect the premises will be given to the owner (when known) of the property.

### Inspections for complaint investigation

Members of the community may approach Council about known problems and these will be investigated. No fees or charges apply.

### Inspections required by conditions of approval

Inspections are required for new systems during construction, prior to covering of pipe work and drains and on completion of work. Inspection fees are payable (in advance) in accordance with Council fees and charges policy (currently \$88/hour).

### Inspections and report

Council provides a routine inspection service for existing systems on a fee for service basis, subject to staff availability. An inspection report will be provided to the landowner upon request (currently \$88/hour).



### Orders powers

Council may order work to be undertaken or may specify the standards that the premises are required to meet and require submissions from the responsible person concerning the action to be taken to meet those standards.

Prior to issuing an order Council must give notice of its intention to issue an order. This notice must set out the proposed terms of the order and allow sufficient time for a response. After considering the response Council may modify, withdraw or issue the order as proposed.

The Local Government Act 1993, Section 124 allows for the issue of the following orders in relation to on-site sewage management;

- ◆ Order 5 - Take action as necessary to comply with requirements.
- ◆ Order 22 - to store, treat, process, collect, remove, dispose of or destroy any **waste** (as defined) which is on the land or premises in a manner specified in the order.
- ◆ Order 25 – not to use or permit the use of a human waste storage facility on land after a specified date.
- ◆ Order 30 - To comply with an approval.

### Offences

Under the Local Government Act 1993 an offence is created in the following circumstances:

1. Operating an on site sewage management system without approval (s626(3)).
2. Failing to comply with the conditions to which an exemption to approval to operate is subject (s626(4)).
3. Operating an on-site sewage management system otherwise than in accordance with the terms of the approval (s627(3)).
4. Failing to comply with an order(s628(2)).

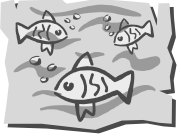
These proceedings are dealt with summarily in the Local Court (s691).

If a person fails to comply with the terms of an order, the council may also carry out the work required by the order and recover the costs from the owner as a debt (s678 of the Local Government Act 1993).

Summary action to abate a public nuisance is available under the Local Government Act 1993, Section 125 the council may act to abate a public nuisance or order a person responsible for a public nuisance to abate it.

Penalty infringement notices may be issued for failure to comply with certain orders under the Local Government Act 1993, Section 679, the amount of the penalty is \$300.

## Conclusion



The NSW Environment Protection Authority in its regular survey *Who Cares About the Environment (2000)* found that the water pollution, particularly of our creeks and rivers, continues to be the environmental issue of most concern among NSW residents.

The awareness of problems associated with on-site sewage systems and the need to protect our environment and health has increased considerably over the years as information has become available.

Many communities are starting to feel the impact of poorly managed septic systems. In 1999 several cases of hepatitis and a major crisis in the oyster industry on the mid north coast of NSW were attributed to leaking septic systems around Wallis Lake.

Byron Shire faces a number of risks compared to other parts of the State due to local factors such as extreme rainfall events, precipitation exceeding evaporation, a large number of existing systems installed without nutrient removal or sufficient reuse area and many existing dwelling sites that (with the benefit of hindsight) are now identified as unsuitable for on-site disposal.

The community is now much more accountable for the operation and management of on-site wastewater/sewage systems. All new and upgraded on-site sewage systems need to satisfy higher environmental standards and community expectations and a precautionary approach to the design and upgrading of on-site systems is recommended by Council.

## Glossary



**Aerated wastewater treatment system (AWTS):** a wastewater treatment process typically involving:

- ◆ settling of solids and flotation of scum;
- ◆ oxidation and consumption of organic matter through aeration;
- ◆ clarification - secondary settling of solids; and
- ◆ disinfection of wastewater before surface irrigation.

**Best management practice:** those approaches that have been developed to prevent or minimise water pollution at source, or as close to the source as practicable. They include those practices determined to be the most effective and practicable ways of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

**Constructed wetland:** constructed area where the water surface is near ground level for enough of the year to maintain saturated soil conditions and promote related vegetation. Constructed wetlands with suitable hydraulic conductivity can receive and process sewage effluent.

**Crop factor:** utilised in water balance modelling to estimate variations in evapotranspiration due to crop type, seasonal conditions and age of crop.

**Domestic wastewater:** wastewater arising from household activities, including wastewater from bathrooms, kitchens and laundries.

**EHP Guidelines:** New South Wales Environment and Health Protection Guidelines 1998.

**Evapotranspiration:** water removal from soil by evaporation and by transpiration from plants.

**Existing dwelling:** single occupancy residential buildings constructed in accordance with an approval issued by Byron Shire Council.

**Existing systems:** systems that are currently being operated for the treatment of human waste.

**Human waste:** human faeces and urine.

**Human waste storage facility:** a device for holding or disposing of human waste, including a cesspit, septic tank, septic closet, water closet, chemical closet, humus closet and combustion closet.

**Land application system:** system that can consist of pumps, pipes, nozzles, or trenches designed to apply wastewater evenly over a land application area. Includes both irrigation systems and soil absorption (sub-surface) systems.

**Nutrients:** chemical elements that are essential for sustained plant or animal growth; the major nutrients essential for plant growth are nitrogen, phosphorus and potassium; in excess, nitrogen and phosphorus are potentially serious pollutants encouraging nuisance growths of algae and aquatic plants in waters and (in the case of nitrate) posing a direct human health risk.



**On-site sewage management system:** includes all types of human waste storage and treatment facilities, for example septic tanks, cesspits, compost toilets, urinals. Also includes the wastewater application (treatment) area, absorption trenches or irrigation fields.

#### **Primary treatment**

The separation of suspended material from wastewater by settlement and/or flotation in septic tanks, primary settling chambers etc., prior to effluent discharge to either a secondary treatment process, or land application system.

**Public sewer:** a sewer operated by a council or a county council, a water supply authority (within the meaning of the Water Supply Authorities Act 1987), a state owned corporation listed in Schedule 1 to the State Owned Corporations Act 1989 (or a subsidiary of such a corporation) or any other public or local authority.

**Pathogens:** micro-organisms that are potentially disease-causing; these include but are not limited to bacteria, protozoa and viruses.

**Recirculating aerobic sand filter device (RASFD):** (intermittent sand filter) provides further treatment of pre-treated wastewater by percolation through graded sand.

**Run-on:** surface water flowing on to an irrigation area because of run-off occurring higher up the slope.

**Small allotments and constrained site:** Allotments of land with insufficient land area to meet the land area and buffer requirements of Byron Shire Council 'Design Guidelines for On-site Sewage Management Systems'

#### **Secondary Treatment**

Aerobic biological processing and settling or filtering of effluent received from a primary treatment unit.

**Septic tank:** wastewater treatment device that provides a preliminary form of treatment for wastewater, comprising sedimentation of settleable solids, flotation of oils and fats, and anaerobic digestion of sludge.

**Sewage:** Waste matter that passes through sewers. Sewage includes any effluent of a kind referred to in paragraph (a) of the definition of waste in the Local Government Act 1993.

**Sewage management:** any activity carried out for the purpose of holding or processing, or re-using or otherwise disposing of, sewage or by-products of sewage.

**Sewage management facility:** a human waste storage facility, or a waste treatment device intended to process sewage, including a drain connected to such a facility or device.

**Sewerage work:** the construction, alteration, extension, disconnection, removal, ventilation, flushing or cleansing of any sewerage service pipes or fittings or fixtures communicating or intended to communicate, directly or indirectly, with:  
(a) a septic tank, an effluent or a sullage disposal system; or  
(b) any sewer of a council,  
including work of sanitary plumbing and work of house drainage.



**Soil absorption system:** subsurface land application systems that rely on the capacity of the soil to accept and transmit the applied hydraulic load (includes leach drains, drain fields, absorption trenches, seepage beds and seepage pits).

#### **Tertiary treatment**

Aerobic biological processing, settling, filtering or disinfection of effluent received from a secondary treatment device. For the purpose of this policy tertiary treatment systems include:

- a. compost toilets, sullage tank and wetland treatment;
- b. septic tank, wetland and sandfilter;
- c. AWTS and sandfilter; and
- d. septic tank, wetland and UV disinfection.

**Waterless composting toilet:** (humus closet, biological toilet) waterless system that uses the principle of composting to break down human excreta to a humus-type material. The liquid fraction is evaporated or directed to an appropriate management system.

**Wet composting toilet:** treats all household wastewater and putrescible household organic solid wastes such as food waste. Uses the principle of aerobic composting to break down the solid waste; the liquid component is directed to a land application system after passing through the pile of solids.