

Dealing with your wastewater

A guide to the On-Site Effluent Treatment Regional Plan 2006



Working with our communities for a better environment



Regional Plans for the Bay of Plenty

- Operative Regional Air Plan (Air Plan)
- Operative Rotorua Geothermal Regional Plan
- Operative River Gravel Management Plan (Gravel Plan)
- Operative Regional Plan for the Tarawera River Catchment (Tarawera River Plan)
- Operative Transitional Regional Plan
- Operative Regional Land Management Plan (Land Plan)
- Operative Regional Coastal Environment Plan
- Operative On-Site Effluent Treatment Regional Plan 2006
- Proposed Regional Water and Land Plan (Water and Land Plan)



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Section One - Introduction

This guide is to help people with on-site effluent treatment systems interpret Environment Bay of Plenty's Operative On-Site Effluent Treatment Regional Plan 2006 (the plan). The plan has been reviewed to deal with water quality issues caused by the discharge of domestic wastewater in the Bay of Plenty. This guide takes you through the process of finding out if your system needs a resource consent or not. It also explains how to deal with the harmful effects your activity could have on the environment.

This guide helps you work out which of the plan's rules and schedules apply to you.

Once you know this, you will need to refer to the plan for more detailed information.

The plan can be viewed on our website www.envbop.govt.nz, at your local library, district or city council or at our offices.

Wastewater is the used water from domestic activities (kitchen, laundry, bathroom and toilet) in dwellings, institutions or commercial facilities.

Domestic greywater is wastewater flow from kitchen, bathroom and laundry facilities.

Domestic blackwater is wastewater flow from the toilet.



When applying for a building permit from a district/city council to install an on-site effluent treatment system you need to provide all the necessary information from Section Four – Planning your system, of this guide. Not providing this information could delay the processing of your building permit.

The plan sets out policies and rules that manage the effects on the environment caused by the discharge of treated domestic wastewater to land. You do not need resource consent from us if your system can meet the conditions in the plan for a **permitted** activity.

If your system cannot meet these conditions then your activity is **discretionary**. This means you need resource consent from us. This ensures that any bad effects your activity might have on the environment are controlled through compliance with conditions of your consent.

Activities that are not allowed at all are classified as **prohibited**.

The plan's aim is to enable the discharge of up to 2 cubic metres per day (which is 2000 litres per day) of treated domestic effluent (wastewater) into land. If your wastewater discharge is more than 2 cubic metres per day then you fall outside of all the permitted rules for this plan and you need resource consent from us.

Key



Prohibited activities



Good practice



Contact us for more information



Website links



Important note



See the related booklet or pamphlet on the subject

How we can help

We can help you work out if you need a resource consent. We can also help you look at different ways of planning and carrying out your on-site effluent management so that a resource consent may not be needed.

Information on resource consents and how to apply for them is found at the end of this guide on page 42.

If you are not sure how to meet the conditions or other requirements of the plan, or need further information on resource consents or any other assistance, please contact us.

Environment Bay of Plenty staff are available to help you and answer your questions.

Phone us: 0800 ENV BOP (368 267)

Fax us: 0800 ENV FAX (368 329)

Visit our website: www.envbop.govt.nz

Email us: info@envbop.govt.nz

A copy of the plan is available for viewing at your local library, district or city council, or at our offices in Rotorua, Mount Maunganui and Whakatane.







Environment Bay of Plenty staff are available to answer any questions you have about the plan.

How to find out what rules and schedules apply to you

The plan's rules set out the legal obligations you must meet. Its schedules provide information to help you work out if you can meet the rules or not. From this you will know if your activity needs a resource consent or not.

Use the table of contents at the front of this guide to find the information you are interested in. Go to that section of the guide or follow the flow charts (see pages 16-24) to find the information you need.

Throughout the guide there are shaded boxes that give a quick reference about what the plan requires and where you can get more information. If you need help at any stage, give us a call on 0800 ENV BOP (368 267).

-  To work out the daily wastewater discharge from your home or dwelling please see the table – Wastewater flow design allowances on page 32.
-  You will need to upgrade or replace your system if it does not meet the minimum standards required by the plan. The new system you choose must comply with the rules of the plan. If it does not, you will need to apply for resource consent from us.
-  A resource consent (building permit) is also required from your district or city council for the installation of all tank systems. Please check with them to see what other requirements you need to meet. Their contact details are on page 43.
-  As with anything maintenance of the system is essential. By following a simple maintenance programme you can ensure that you will continue to have an efficient and healthy disposal system for many years. Environment Bay of Plenty has information to help you work out a maintenance programme.

Section Two – What are the options?

There are three types of on-site effluent treatment systems used in the Bay of Plenty. These are:

- Conventional septic tank systems
- Advanced on-site effluent treatment systems
- Alternative 'non-water' systems

These options are explained below. If you do not have one of these systems, your waste water system will be connected to a sewer reticulation system.

Conventional septic tank systems

The conventional septic tank system has two main parts: the **septic tank**, in which larger particles are removed from the waste and some decomposition takes place, and the **land treatment area** where the effluent soaks into the ground through perforated pipes.

What is it?

A typical septic tank is either a single tank or a tank fitted with a partition to create two chambers (two stage septic tank).

The main job of the septic tank is to pre-treat household waste before it enters the land treatment area. In the tank the heavier, solid particles in the sewage settle to the bottom and form a sludge. Lighter materials, including

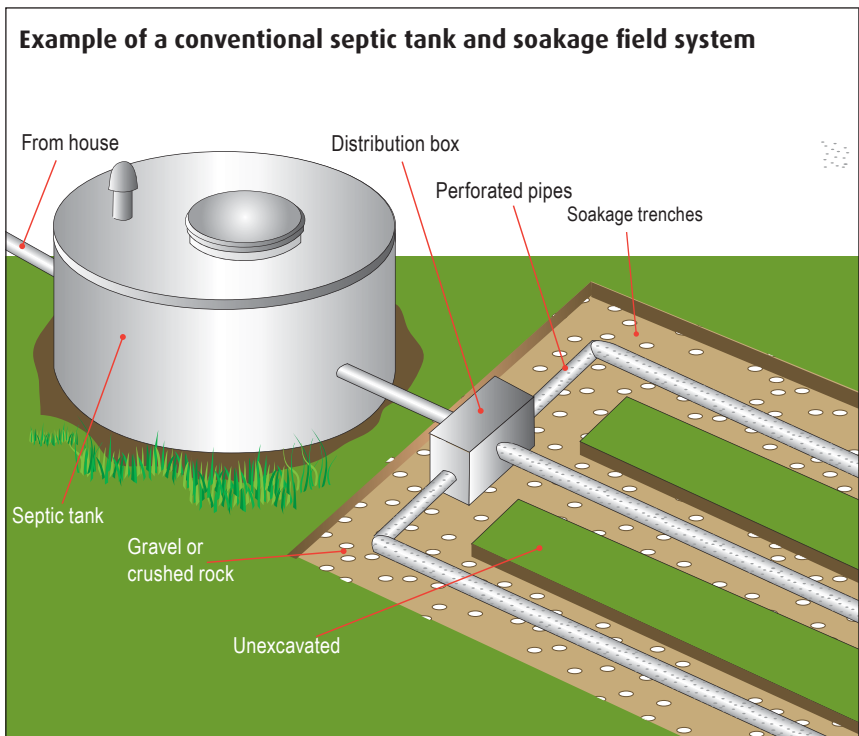


To improve the lifetime of the land treatment area it is worth installing an outlet solids filter to the septic tank's outlet pipe. This stops solids clogging the pipes and soil around the land treatment area, however you will have to clean the filter from time to time. Filters require regular checks and cleaning by hosing down with the discharge back to the tank.

fats and grease, float to the surface forming a scum layer. Sludge and scum are stored in the tank.

Bacteria living in the septic tank break down some of the organic solids into a liquid, helping reduce the build-up of sludge in the tank. The liquid effluent between the sludge and scum layers is piped out to the land treatment area.

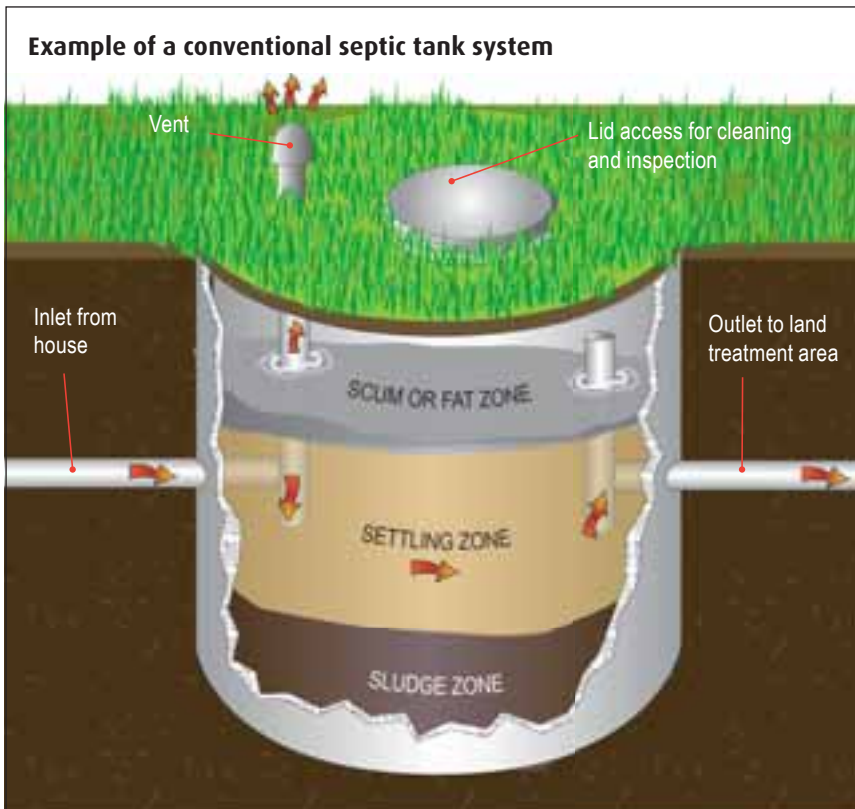
The land treatment area is where treated effluent is discharged into the ground through perforated pipes. The partially treated effluent flows out of the tank into the land treatment area, where natural processes in the soil absorb and purify it. This removes any remaining viruses and bacteria, and some of the nutrients.



How it works

Septic tanks and land treatment areas can work well for large sections, but are limited in treating effluent in clay soils (poor soakage) or gravelly soils (rapid soakage). Poor treatment of effluent results in pollution of groundwater and surface waters. Septic tanks that are not maintained make these problems worse.

Your land treatment area should be chosen carefully. It will need lots of topsoil and organic matter so bacteria can break down the effluent and allow effective soakage. For septic tank systems it is the soil in the land treatment area that provides the majority of the treatment. An outlet solids filter helps protect your land treatment area (see page 31).



Distribution options for land treatment areas include:

- Gravity fed soakage trenches with distribution box to disposal lines.
- Low-pressure effluent dosing using a pump system to intermittently distribute controlled quantities of effluent.
- Specially designed beds of plants that absorb a proportion of the effluent through their roots - known as evapo-transpiration systems.



All land treatment areas must be placed away from areas prone to slippage, subsidence, erosion, ponding or overland flow of water, and where it can be compacted by stock or vehicles.

Advanced on-site effluent treatment systems

What is it?

An advanced on-site effluent treatment system (advanced system) initially does the same as a conventional septic tank system, but has an extra step that provides secondary treatment. This results in a better quality of effluent to be discharged to the land treatment area.

The types of advanced systems include aerated wastewater treatment systems (AWT) or packed bed reactor systems (PBR).

- Aerated wastewater treatment systems: activated sludge; biofilter; trickling filter
- Packed bed reactor systems: intermittent sand filters; recirculating sand filter; textile filters

Advanced systems have several chambers, pump dosing mechanisms, filters and come in a range of configurations and sizes. The treated effluent is pumped to the land treatment area where the effluent soaks into the ground through perforated pipes.

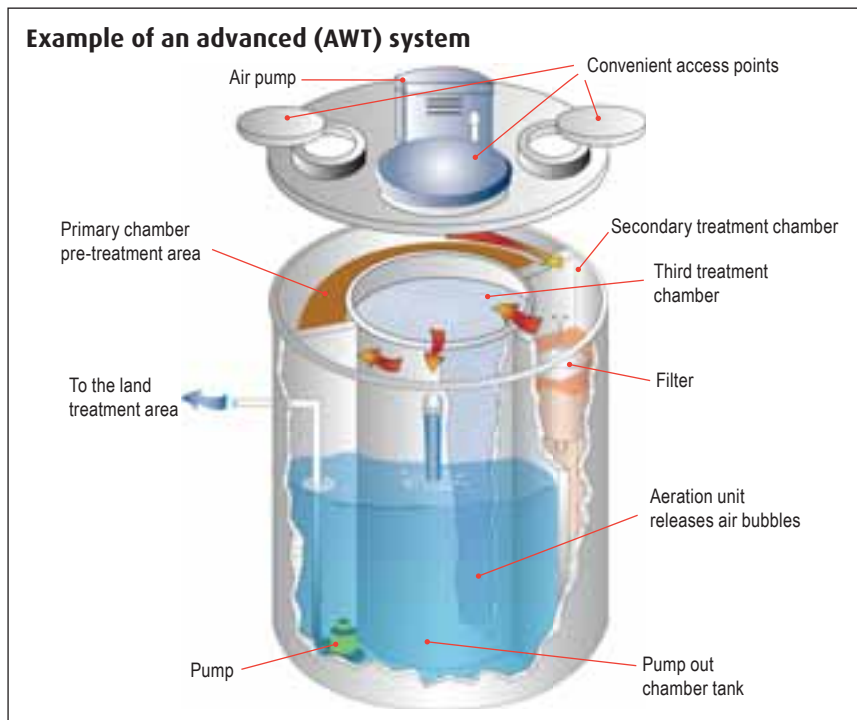
How it works

Advanced systems are a more thorough treatment process, which helps get a higher effluent quality more often. AWT systems pump air into the effluent while PBR systems pump effluent over materials that take nutrients and other contaminants out.

Advanced systems are typically designed, manufactured, installed and maintained under contract by a specialist company. These systems need to be checked regularly, so a maintenance contract is required. This is crucial to the effectiveness of your system. Inspection by the company needs to take place at least six monthly. You will then know when your tank compartments need pumping out or if other maintenance is required. The maintenance contract must be continued for the life of the system.

Distribution options for land treatment areas include:


- Pump dosing to a subsurface dripline irrigation system.
- Low pressure effluent dosing using a pump system to intermittently feed the soils with controlled quantities of effluent.
- Pump dosing to raised beds (Wisconsin Mounds) for areas with high groundwater tables or thin soil coverage.





! Some advanced systems are more effective at reducing nutrients. This is important to consider when selecting a system if you live in a nutrient sensitive environment, like near lakes and harbours where nutrient standards must be met.

! It is important to get a performance guarantee from the supplier of the system stating it is able to meet the plan's effluent quality standards on a consistent basis. For specific areas of the Bay of Plenty there are standards for five-day Biochemical Oxygen Demand (BOD_5), suspended solids (SS) and total nitrogen (TN) that must be met.

 A trial has been carried out providing the public with information on the performance of some advanced systems and what they can achieve in the treatment of effluent required by the plan. A list of those approved by us is available from our website www.envbop.govt.nz.

! All land treatment areas must be placed away from areas prone to slippage, subsidence, erosion, ponding or overland flow of water, and where it can be compacted by stock or vehicles.

Alternative 'non-water' systems

Alternative systems such as composting toilets deal only with blackwater (toilet waste). If there is no discharge of liquid from your system then the plan does not apply. You will need to contact your district or city council to get a building permit for a composting toilet.

The remaining wastewater from the kitchen, laundry and bathroom (greywater) still needs to be treated and disposed of. A greywater septic tank and land treatment area is needed and is covered by the plan.

Distribution options for greywater land treatment areas include:

- Gravity fed with distribution box to disposal lines.
- Low pressure effluent dosing using a pump system to intermittently feed the soils with controlled quantities of effluent.



Incorporating a composting toilet and disposing of greywater in a manner that meets the plan's permitted requirements for greywater will mean no resource consent is needed from us.



Sewerage Reticulation

Where sewerage reticulation is available, houses/dwellings must connect onto it. Under the Local Government Act you must connect to a reticulated system if reticulation is within 30 metres of your property boundary or within 60 metres of any dwelling on your property.

! **The main difference between conventional and advanced systems is the level of treatment.**

Conventional systems rely on having an adequate quantity of good quality soil that the effluent is discharged into to remove contaminants (suspended solids, some nutrients, bacteria and viruses). The soil type and trench construction are crucial for effective treatment of the effluent.

With advanced systems most of the treatment is done in the tank before the treated effluent is discharged to soil. The same volume of effluent will still be discharged to land but most of its treatment will already have taken place in the tank system. However, the land treatment area still needs to be large enough for effective soakage, final evaporation and plant uptake of the treated effluent.



Section Three – Do I need a resource consent?

The following pages contain flow charts and maps so you can find out what rules and schedules in the plan relate to your property. From this you will know if your on-site effluent discharge needs a resource consent or not.

Start at the flow diagram on page 18 to find the rules that apply to you.

Flowchart key information

◆ You live near reticulation:

Dwellings with on-site effluent treatment systems must connect to a sewer reticulation system if one is available. Once a sewer reticulation system becomes available you must connect onto it. Under the Local Government Act you are required to connect to a reticulated system if reticulation is within 30 metres of the property boundary or within 60 metres of any dwelling. The plan also requires this in Rules 3 and 10 to 13.

◆◆ Rotorua lakes catchments:

You will have to improve the discharge quality of your effluent so that the **total nitrogen** is reduced to 15 grams per cubic metre (g/m^3) or less, **biochemical oxygen demand** is reduced to 30 g/m^3 or less, and **suspended solids** are reduced to 45 g/m^3 or less before the effluent enters the ground. The date you will have to do this by, either 1 December 2010 or 1 December 2014, will depend on where you live (see page 18) unless you get a consent from us.

◆◆◆ Western Bay coastal communities:

If your property is in one of the specified communities you have until **1 December 2010** to improve the discharge quality of your effluent so that the **biochemical oxygen demand** is reduced to 30 g/m^3 or less, and **suspended solids** are reduced to 45 g/m^3 or less before the effluent enters the ground (see page 22).



Permitted. If you can meet all conditions of the rule you do not need resource consent from us.



Discretionary. You need to apply for resource consent from us, as the activity is not permitted.



An advanced on-site effluent treatment system should provide the BOD₅ and SS quality improvements required by the plan. Specific advanced systems will provide the TN quality required.



This booklet will refer you to a rule and/or schedule in the plan that is relevant to your situation. You can view the plan at any Environment Bay of Plenty office, your local city or district council, local library or on our website www.envbop.govt.nz



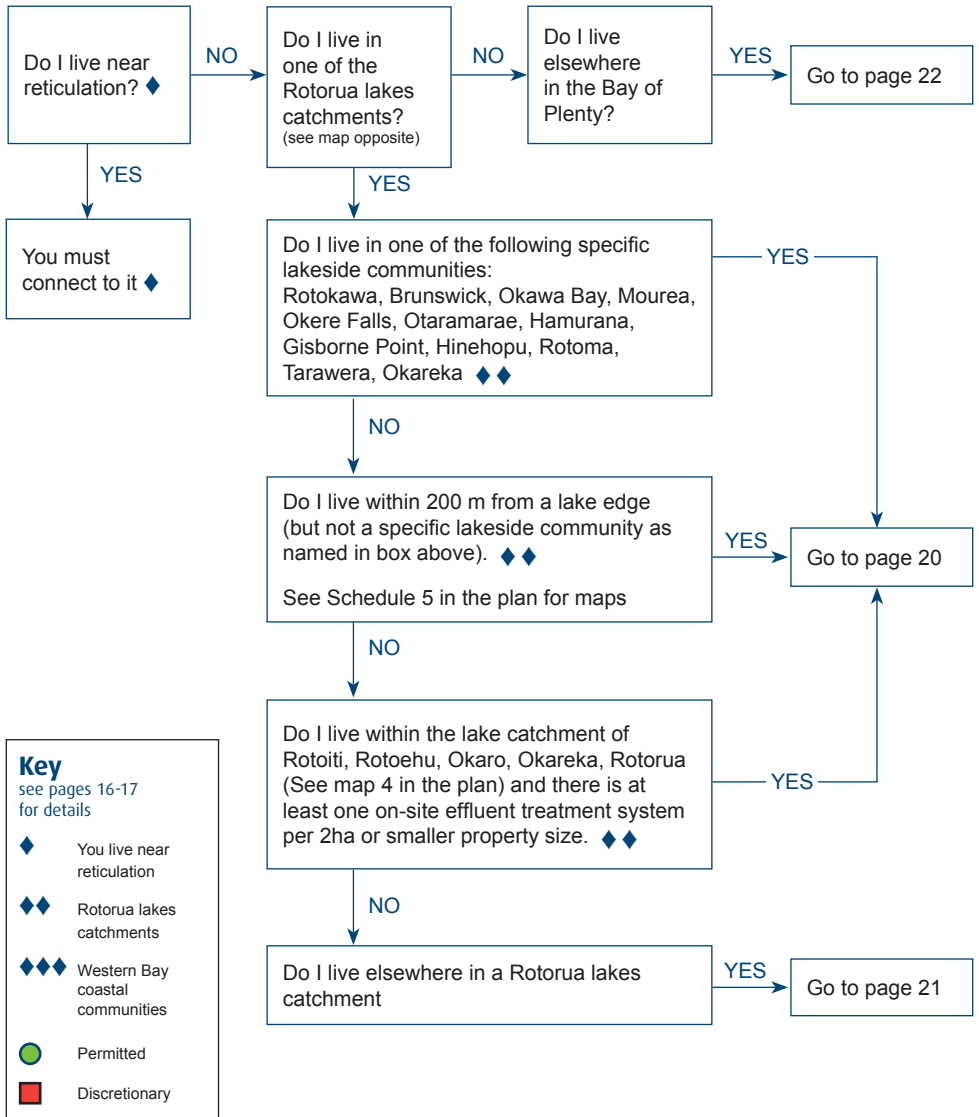
If you have an existing system that is unable to connect to sewer reticulation or cannot be upgraded to comply with the permitted conditions of the plan then you will require resource consent from us to continue to discharge effluent from your septic tank system.



Available from Environment Bay of Plenty is the factsheet *OSET: Rotorua Lakes Catchments - Lakes Factsheet 10.*



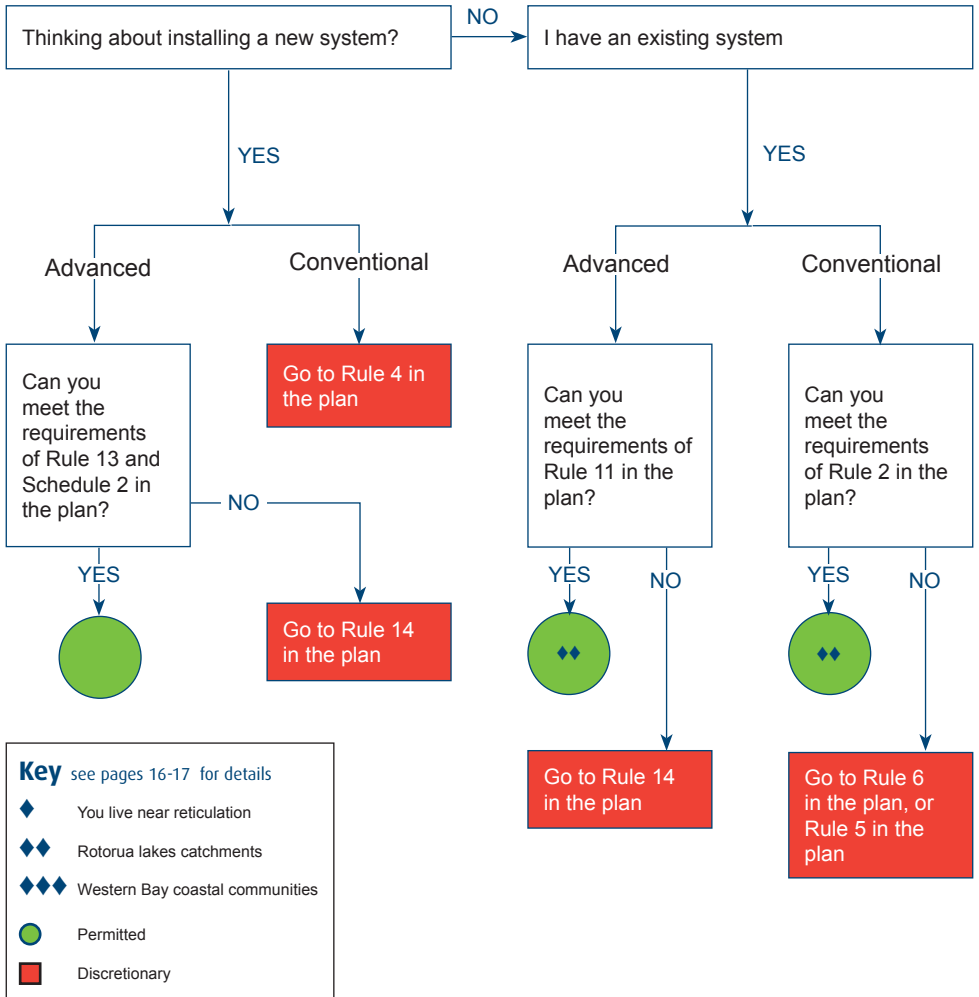
Do I need a resource consent?



Rotorua lakes catchments

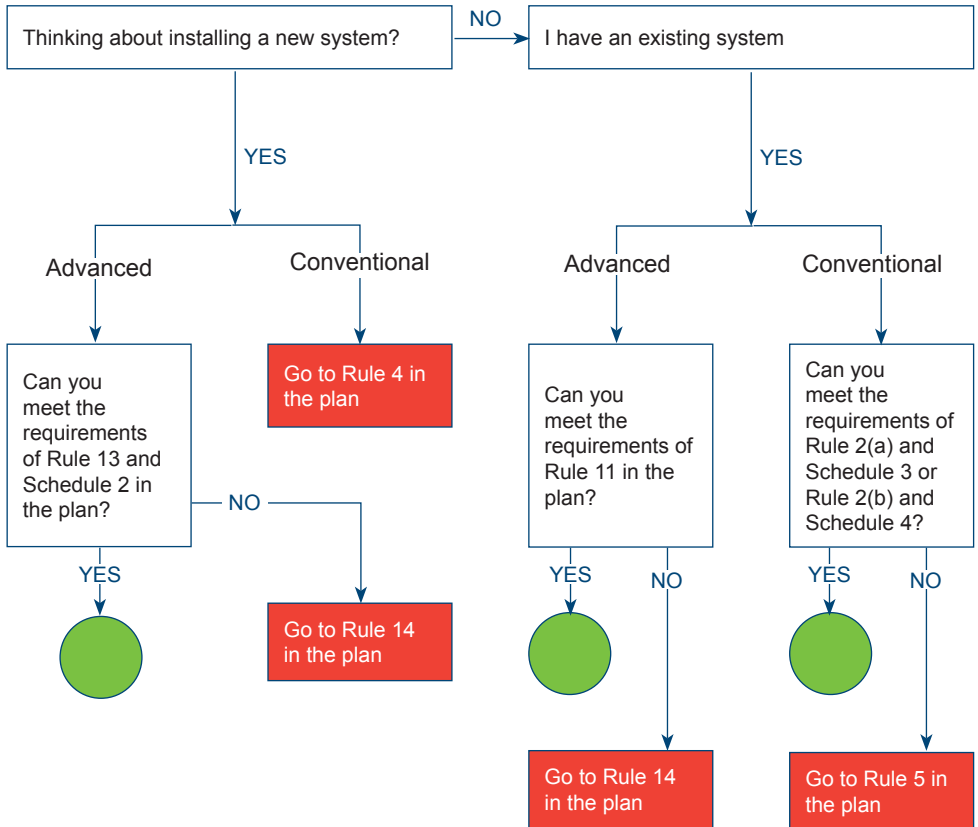
- Specific lake communities
- 200m buffer
- Specific lake catchments (see flowchart on page 18)

NB: Rotorua lakes catchments systems within 200 metres of the edge of any lake that are not identified in the Rotorua District Council's Ten Year Plan for reticulation must be cleaned out and inspected by 1 December 2006.

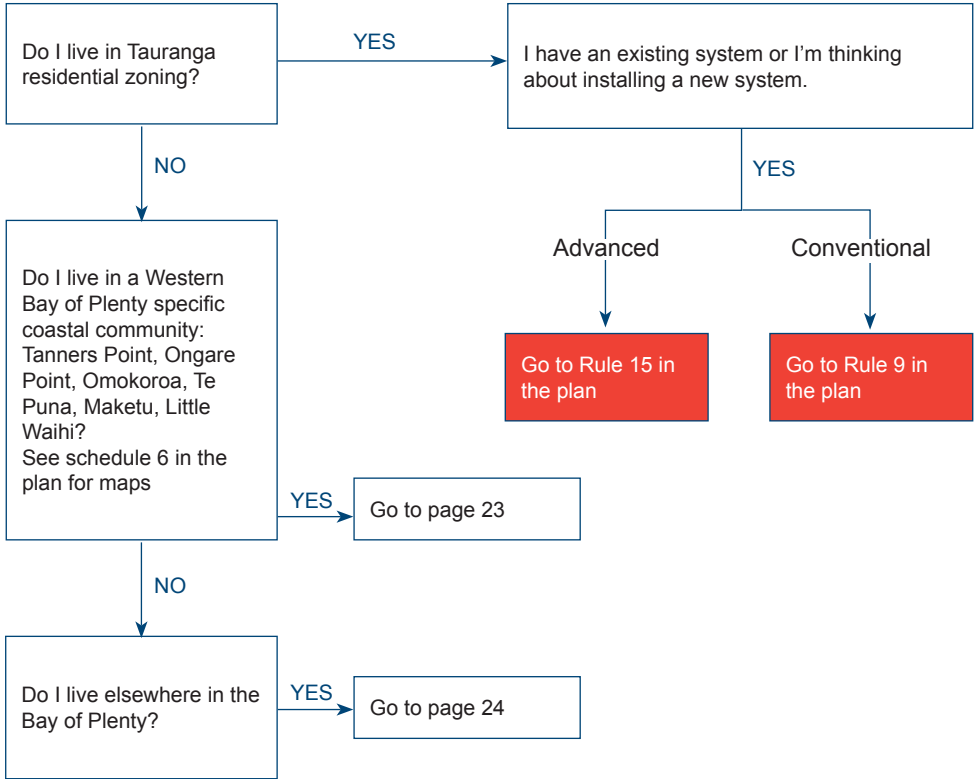


Rotorua lakes catchments

- Elsewhere in the Rotorua lakes catchments (see flowchart on page 18)



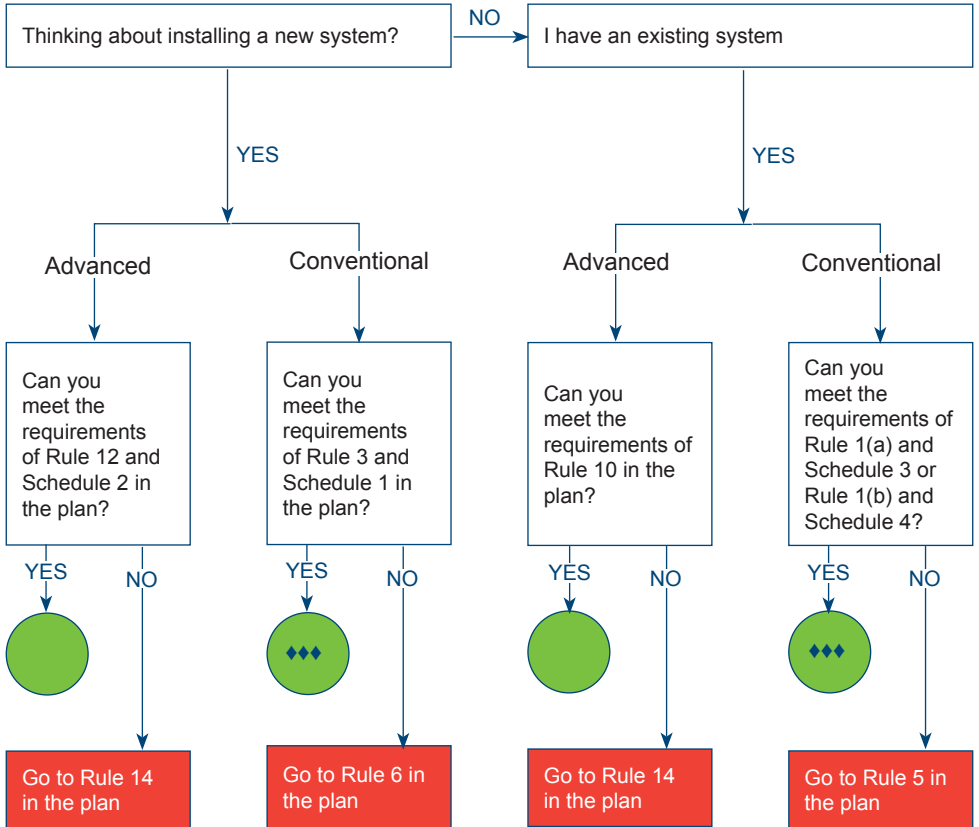
Bay of Plenty excluding Rotorua lakes catchments



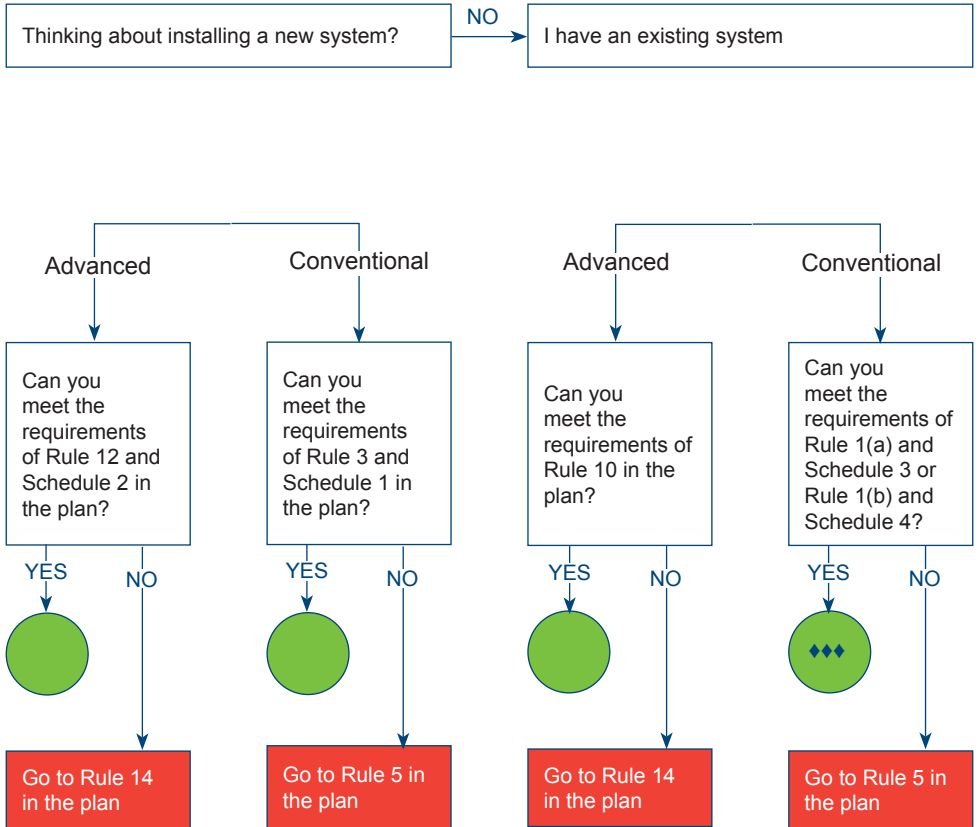
Key see pages 16-17 for details

- ◆ You live near reticulation
- ◆◆ Rotorua lakes catchments
- ◆◆◆ Western Bay coastal communities
- Permitted
- Discretionary

Western Bay of Plenty specific communities



Elsewhere in the Bay of Plenty



Section Four – Planning your system

Working out what type of on-site system you need

Schedules 1 and 2 of the plan have information so you can work out what type of system can be installed at your site. Depending on your location (Rotorua lakes catchments or coastal communities) you may now need to comply with Schedule 2 by 2010 or 2014.

Schedules 3 and 4 set out the rules that apply to existing systems (those installed before the reviewed plan became operative on 7 August 2006).

Schedules 5 and 6 are maps of areas referred to in the rules.



To help you, a *summary* of tables from Schedule 1 and 2 are included in this guide. These tables cover how to work out your water usage, tank capacity, soil type, how much trench you will need, and how to work out if your activity is permitted and what modifications you can make for it to be permitted.

Tank capacity (Table 5)

To work out minimum size of tank required

Number of bedrooms	Minimum tank capacity/size (litres)
1 to 3	2700
4 to 6	3300 (typically caters for up to 9 people)

To cater for 10 people or more the capacity (C) can be determined by the formula $C = (P \times A) + 2000$ litres

Where: P = the number of persons to be served, and A = the daily wastewater flow allowance in litres/person/day (see Table 9 on page 32).

For motels/hotels with a restaurant use the formula $C = (P \times A) + 3000$ litres



If you are altering your dwelling and increasing the number of rooms that can be used as bedrooms then your treatment system must be modified or replaced to cope with the additional wastewater to be generated.

Conventional systems - Can I go permitted? (Table 6)

Select one item from each of the numbered sections and note the score.

A **total** score of 1 to 4 means you have a permitted activity subject to Rule 3. Scores higher than this need resource consent unless modification can be carried out as suggested in Table 8 on page 27, which may influence the final score. If you can meet the conditions of Rule 3 then a resource consent is not required from us. If you have any questions about this table then contact Environment Bay of Plenty on 0800 ENV BOP (368 267).

	Factor	Score
1 Tank treatment <ul style="list-style-type: none"> single stage or two-stage septic tank with approved effluent outlet solids filter greywater only 	2	
	1	
2 Water table The distance to the water table from the base of the disposal line <ul style="list-style-type: none"> greater than 1500 millimetres between 1200 - 1500 millimetres between 600 - 1200 millimetres between 0 - 600 millimetres 	0	
	1	
	2	
	4	
3 Soil type and drainage (see Table 10 for soil type) <ul style="list-style-type: none"> gravel, coarse sand - rapid draining (category 1) sand coarse to medium - free draining (category 2) loamy sand - good drainage (category 3) sandy loam, loam, silt loam - moderate drainage (category 4) sandy clay-loam, clay-loam, silty clay-loam - moderate to slow drainage (category 5) sandy clay, non-swelling clay, silty clay - slow drainage (category 6) swelling clay, grey clay, hardpan - poorly or non-draining (category 7) 	2	
	1	
	1	
	0	
	0	
	4	
	4	
4 Barrier to vertical soakage <ul style="list-style-type: none"> restrictive drainage soil horizon within 2 metres of soil surface. restrictive drainage soil horizon deeper than 2 metres of soil surface. 	4	
	0	
5 Slope of land at treatment area <ul style="list-style-type: none"> less than 8.5° (less than 15% slope). greater than 8.5° (more than 15% slope). 	0	
	3	
6 Barrier to horizontal soakage (e.g. vertical cuttings, retaining walls, building walls in the soil profile) <ul style="list-style-type: none"> greater than 3 metres and greater than 45° slope from the toe of a wall/embankment. less than 3 metres or less than 45° slope from the toe of the wall/embankment. 	0	
	4	
7 Distance to surface water (including ephemeral) or bore <ul style="list-style-type: none"> greater than or equal to 40 metres between 20 – 40 metres less than 20 metres 	0	
	1	
	4	
TOTAL SCORE		

Modify the treatment or site conditions (Table 8)

Limiting factors	Requirement	Solution or recommendation	Go back to Table 6 (✓)
1 Tank treatment	Improve the treatment level	<ul style="list-style-type: none"> install outlet solids filter increase tank size install advanced treatment system 	✓ ✓ Go to Rule 12 or 13
2 Water table	<ul style="list-style-type: none"> improve the clearance to the water table <i>or</i> improve the treatment level 	<ul style="list-style-type: none"> raise soakage field use mound systems install advanced treatment system and irrigation lines 	✓ ✓ Go to Rule 12 or 13
3 Soil type and drainage	<ul style="list-style-type: none"> remove restriction <i>or</i> increase depth to restriction or decrease loading or improve the treatment level 	<ul style="list-style-type: none"> break up iron pan/ clay pan raise or move the soakage field use pump dosing install advanced treatment system and irrigation lines 	✓ ✓ ✓ Go to Rule 12 or 13
4 Barrier to horizontal soakage	Increase distance to barrier	<ul style="list-style-type: none"> move system 	✓
5 Distance to surface water or bore	<ul style="list-style-type: none"> increase distance from surface water or bore improve treatment level 	<ul style="list-style-type: none"> move system install advanced treatment system and irrigation lines 	✓ Go to Rule 12 or 13

Advanced Systems - Can I go permitted? (Table 11)

Select one item from each of the numbered sections and note the score.

A total score of 1 to 4 means you have a permitted activity subject to Rule 12 or 13. Scores higher than this need resource consent unless modification can be carried out as suggested in Table 12 on page 29, which may influence the final score. If you can meet the conditions of Rule 12 or 13 then a resource consent is not required from us. If you have any questions about the information in this table contact Environment Bay of Plenty on 0800 ENV BOP (368 267).

	Factor	Score
1 Tank treatment Advanced treatment unit	1	
2 Water table The distance to the water table from the base of the disposal line <ul style="list-style-type: none"> • greater than 1200 millimetres • between 1000 – 1200 millimetres • between 300 – 1000 millimetres • between 0 – 300 millimetres 	0 1 2 4	
3 Soil type and drainage (see Table 10 for soil type) <ul style="list-style-type: none"> • gravel, coarse sand – rapid draining • sand coarse to medium – free draining • loamy sand – good drainage • sandy loam, loam, silt loam – moderate drainage • sandy clay-loam, clay-loam, silty clay-loam – moderate to slow drainage • sandy clay, non-swelling clay, silty clay – slow drainage • swelling clay, grey clay, hardpan – poorly or non-draining 	2 1 1 0 0 2 2	
4 Barrier to vertical soakage For irrigation line, i.e. pressure compensating emitters: <ul style="list-style-type: none"> • restrictive drainage soil horizon within 0.5 metres of soil surface. • restrictive drainage soil horizon deeper than 0.5 metres of soil surface. 	2 0	
5 Slope of land at treatment area <ul style="list-style-type: none"> • less than 8.5° (less than 15% slope) • greater than 8.5° (more than 15% slope) 	0 2	
6 Barrier to horizontal soakage (e.g. vertical cuttings, retaining walls, building walls in the soil profile) <ul style="list-style-type: none"> • greater than 3 metres and greater than 45° slope from the toe of a wall/embankment • less than 3 metres or less than 45° slope from the toe of the wall/embankment 	0 4	
7 Distance to surface water (including ephemeral) or bore <ul style="list-style-type: none"> • greater than or equal to 30 metres • between 25 – 30 metres • between 20 – 25 metres • less than 20 metres 	0 1 2 4	
TOTAL SCORE		

Modify the treatment or site conditions (Table 12)

Limiting factors	Requirement	Solution or recommendation	Go back to Table 11 (✓) or apply for resource consent
1 Tank treatment	Improve the treatment level	<ul style="list-style-type: none"> • add disinfection • add nutrient removal 	Apply for resource consent Apply for resource consent
2 Water table	Increase the clearance to water table	<ul style="list-style-type: none"> • provide raised bed for land application • improve treatment by adding disinfection 	✓ Apply for resource consent
3 Soil type and drainage	<ul style="list-style-type: none"> • remove restriction • increase depth to restriction • decrease loading • improve treatment 	<ul style="list-style-type: none"> • break up iron pan/clay pan • provide raised bed for land application • reduce the design irrigation rate to 3 millimetres per day • reduce the design irrigation rate to 2 millimetres per day • add disinfection • add disinfection and nutrient removal 	✓ ✓ Apply for resource consent Apply for resource consent Apply for resource consent
4 Barrier to horizontal soakage	<ul style="list-style-type: none"> • increase distance to barrier • improve treatment level 	<ul style="list-style-type: none"> • move system • add disinfection • add disinfection and nutrient removal 	✓ Apply for resource consent Apply for resource consent
5 Distance to surface water or bore	<ul style="list-style-type: none"> • increase distance to surface water • improve treatment level 	<ul style="list-style-type: none"> • move system • add disinfection • add disinfection and nutrient removal 	✓ Apply for resource consent Apply for resource consent

Trench length and reserve area (Table 7)

Average daily flow (L)	Number of bedrooms	Category 1		Category 2		Category 3		Category 4		Category 5	
		Trench length (m)	Reserve area (m ²)	Trench length (m)	Reserve area (m ²)	Trench length (m)	Reserve area (m ²)	Trench length (m)	Reserve area (m ²)	Trench length (m)	Reserve area (m ²)
Up to 500	0*	16	64	22	90	37	150	45	180	75	300
Up to 1000	1 to 3	32	128	45	180	74	300	90	360	150	600
1000 - 1400	4	45	180	60	240	105	420	125	500	210	840
1400 - 1600	5	50	200	70	280	120	480	145	580	240	960
1600 - 2000	6	64	256	90	360	148	590	180	720	300	1200
More than 2000	7 or more	Resource consent is required for discharges of more than 2 m ³ /day									

* This applies to offices or service stations and the like. The building is not a residence.

See page 31 for more information

Size of trench

Table 7 is based on a 45 cm wide trench filled with gravel. The width of the trench may be reduced as long as the trench length from Table 7 is increased by the following formula:

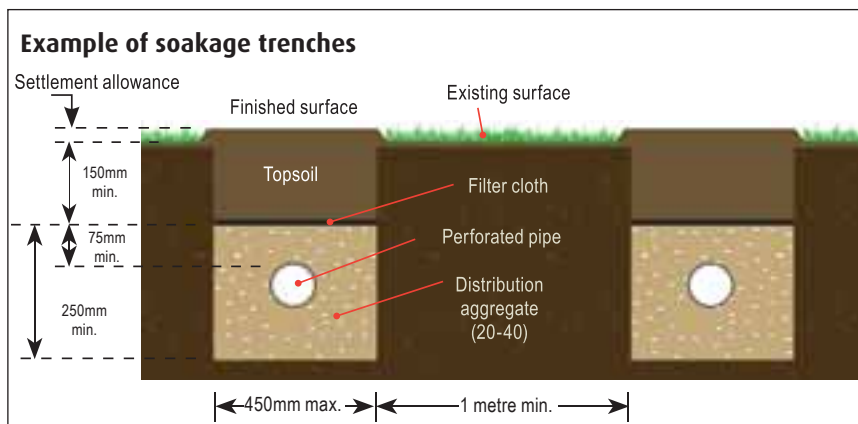
Narrow trench = $(L \times 0.45) \div W$, where: L = trench length from Table 7, W = trench width.

The trench width must not exceed 45 cm. The minimum spacing between adjacent trenches (sidewall to sidewall) is 1 m, although 2 m is preferable (see diagram below).

Pump dosing of lines is required for rapid draining and moderate to poor drainage soils. Free draining and good drainage soils may not require pump dosing of effluent, however this is recommended for even distribution throughout the full length of disposal line.

The reserve area provides room to install a new land treatment area in the event of system failure. For future enlargement of a dwelling the reserve area can provide for additional land treatment area and cope with any increased loading. The reserve area can still be used for garden or lawn purposes.

The installation of an outlet solids filter prevents solids passing from the tank to the land treatment area. The filter also regulates flow so that waste is held longer in the tank. You may have to clean out your tank more often to maintain the capacity, but the filter will prevent the land treatment area from clogging. Filters require regular checks and cleaning by hosing down with the discharge back to the tank.



Wastewater flow design allowance (Table 9)

Wastewater source	Typical wastewater flow allowance in litres/person/day ¹	
	On-site roof water tank supply	Reticulated community or bore water supply
Households with standard facilities (including automatic washing machine)	140	180
Households with standard water reduction fixtures ²	115	145
Households with full water reduction facilities ³	80	110
Households with full water reduction facilities plus reclaimed water recycle for water closet flushing ⁴	65	95
Households with extra wastewater producing facilities (e.g. garbage grinders; douches)	170	220
Households - blackwater only (standard facilities)	50	60
Households - greywater only (standard facilities)	90	120
Motels/hotels		
- guests, resident staff	140	180
- non-resident staff	30	40
- reception rooms	20	30
- bar trade (per customer)	20	25
- restaurant (per diner)	20	30
Community halls		
- banqueting	20	30
- meetings	10	15
Marae		
- day only visitors	30	40
- day plus overnight visitors	130	150
Restaurants (per diner)		
- dinner	20	30
- lunch	15	25
Tea rooms (per customer)		
- without restroom facilities	10	15
- with restroom facilities	15	25
Schools (pupils plus staff)	30	40
Rural factories, shopping centres (staff)	30	50
Public toilets (including hand wash)	8	10
Camping grounds		
- fully serviced	100	130
- recreation areas	50	65

See page 33 for more information

Table 9 notes:

- 1 These flows are recommended minimums for design purposes.
- 2 Standard water reduction fixtures include dual flush 11/5.5 litre toilets, shower flow restrictors, aerator faucets (taps), water conserving automatic washing machines.
- 3 Full water reduction fixtures include the combined use of reduced flush 6/3 litre toilets, shower flow restrictors, aerator faucets, front-load washing machines and flow/pressure control inserts on all water use outlets.
- 4 As for note 3, plus on-site greywater treatment and recycle to toilet cistern, or on-site/off-site treatment and recycle of reclaimed water for toilet flushing.

To work out the amount of wastewater

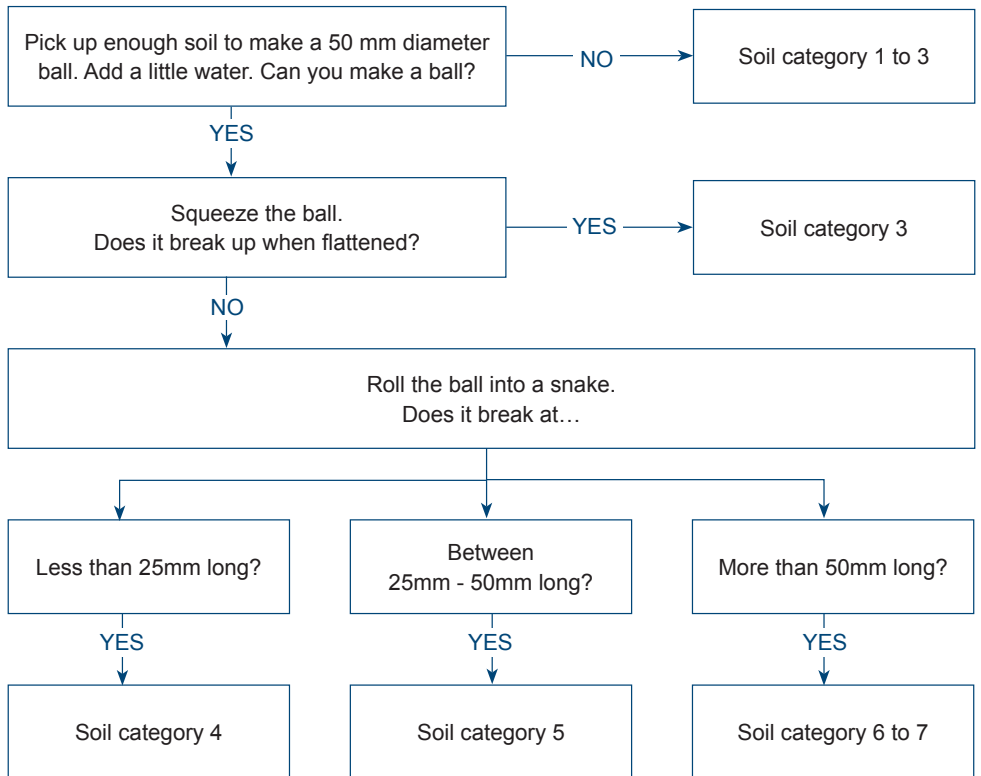
To work out the amount of wastewater that is typically discharged from a dwelling, allow for the number of people reasonably expected to use it. Allow 1.5 people per bedroom (including offices or any other similar room that could be used as a bedroom) and round the number up e.g. for 3 bedrooms $3 \times 1.5 = 4.5$ is rounded up to 5 people. You then use Table 9 (page 32) and multiply the number of people by the wastewater flow allowance for your situation.



Appearance and feeling of soil types (Table 10)

Soil type	Appearance and feeling of moist soil	Approximate clay content (%)	Soil Category
Gravel, Sand	Cannot be moulded; single sand grains adhere to fingers	Always less than 10 % and commonly less than 5 %	1 to 3
Loamy sand	Slight coherence; can be sheared between thumb and forefinger to make a snake of about 5 mm	5 to 10 %	3
Clayey sand	Slight coherence; sticky when wet, many sand grains stick to fingers; will make a snake of 5 to 15 mm; discolours fingers with clay stain	5 to 10 %	3
Sandy loam	Just coherent but very sandy to touch; will make a snake of 15 to 25 mm; dominant sand grains are of medium size and are readily visible	10 to 15 %	4
Light sandy clay loam	Strongly coherent but sandy to touch; sand grains are of medium size and are readily visible; will make a snake of about 20 to 25 mm	15 to 20 %	4
Loam	Coherent and rather spongy; smooth feel when manipulated but with no obvious sandiness or silkiness; may be somewhat greasy to touch if much organic matter present; will make a snake of about 25 mm	About 25 %	4
Silt loam	Coherent; very smooth to silky when manipulated; will make a snake of 25 mm	About 25 % and with 25 % or more silt	4
Sandy clay loam	Strongly coherent; sandy to touch; medium size sand grains visible in finer matrix; will make a snake of 25 to 40 mm	20 to 30 %	5
Clay loam	Coherent and plastic; smooth to manipulate; will make a snake of 40 to 50 mm	30 to 35 %	5
Silty clay loam	Coherent and smooth; plastic and silky to touch; will make a snake of 40 to 50 mm	30 to 35 % and with 25 % or more silt	5
Sandy clay	Plastic; fine to medium sand grains can be seen, felt or heard in clayey matrix; will make a snake of 50 to 75 mm	35 to 40 %	6
Silty clay	Plastic; smooth and silky to manipulate; will make a snake of 50 to 75 mm	35 to 40 % and with 25 % or more silt	6
Light clay (non-swelling)	Plastic; smooth to touch; slight resistance to shearing between thumb and forefinger; will make a snake of 50 to 75 mm	35 to 40 %	6
Medium clay	Smooth plastic; handles like plasticine and can be moulded into rods without fracture; has some resistance to shear; will make a snake of about 75 mm or more	45 to 55 %	7
Heavy clay (swelling)	Smooth plastic; handles like stiff plasticine; can be moulded into rods without fracture; has firm resistance to shear; will make a snake of 75 mm or more	50 % or more	7

Soil category by feel



Land treatment area

By using Table 9 on page 32 you can work out your daily wastewater flow design allowance. For every 100 litres of wastewater, you will need at least 20 square metres of land treatment area where subsurface irrigation is installed for the disposal of the treated effluent. Using more area will improve the performance of the treatment area; the greater the area the better the treatment will be.



Section Five – Region-wide rules

As well as specific rules for the disposal of treated effluent to land that are based on your property's location, there are other region-wide rules that govern what you can and cannot do in regard to on-site effluent treatment and disposal. These are listed and summarised below. Please refer to the following rules in the plan for more detail.

- **Greywater**
Rule 16 permitted, Rule 17 discretionary
Greywater is specifically water from your bath, shower, handbasin, kitchen and washing machine. Greywater can be managed and re-used within your home and property.
- **System upgrade**
Rule 21 discretionary
When an on-site effluent treatment system fails it will need to be upgraded or replaced with a new system.
- **Dwelling expansion/alteration**
Rule 20 discretionary
If you change the size of your dwelling so more people can live in it, you may need to upgrade your system.
- **Soak holes**
Rule 7 discretionary, Rule 8 prohibited
Soak holes are holes in the ground where the wastewater from the toilet, kitchen, bathroom, and laundry is discharged to. They are generally filled with coarse material to help rapid soakage into the soil.
- **The use of explosives** to maintain soak hole infiltration is *prohibited*
Rule 8. Once a soak hole has failed it must be replaced *Rule 7*.
- **Pit latrines**
Rule 18 permitted, Rule 19 discretionary
Pit latrines (also referred to as long drop toilets or privies) are holes in the ground and are non-flush toilets. No other wastewater is discharged to a pit latrine. Pit latrines are only to be installed in remote locations where the level of use is low, and where other on-site disposal systems are not possible. Permission may be required from the district or city council in respect of building regulations, other legislation or bylaws.

- **Septage to land**

Rule 22 discretionary

Septage is the entire contents of a septic tank, usually removed when the tank is cleaned.

- **Spray irrigation of wastewater effluent**

Rule 23 discretionary

When wastewater is irrigated onto land for disposal, instead of using ground soakage methods.





The plan sets out policies and rules that manage the effects on the environment caused by discharging treated domestic wastewater to land. You do not require resource consent from us if the conditions in the plan for a **permitted** activity can be met. If however you cannot meet these conditions then your activity is **discretionary**. This means you need resource consent from us. This ensures that any bad effects your activity might have on the environment are controlled through the conditions of your consent. Activities that are not allowed at all are classified as **prohibited**.



Section Six – Looking after it/ ongoing management

Provided your on-site effluent treatment system is properly cared for it will be an effective means of effluent disposal and give you many years of reliable service.

Do: 	Don't: 
<ul style="list-style-type: none"> • Scrape dishes before washing • Keep all possible solids out of your system. • Install water saving devices e.g. dual flush toilets. • Take showers instead of baths. Use biodegradable soaps and washing powder. • Divert stormwater away from your land treatment area. • Make sure your tank lid is kept easily accessible. 	<ul style="list-style-type: none"> • Use a garbage grinder. • Put items like sanitary napkins or disposable nappies into your system. • Wash clothes until you have a full load. • Over-use powerful bleaches and disinfectants or put chemicals or paint down the drain. • Allow vehicles or stock on the land treatment area. • Cover the mushroom vent. • Grow deep rooting plants over soakage trenches or pipes. • Empty chemical toilet waste into your system. • Build on your reserve soakage field area.

By following a simple maintenance programme you will continue to have an efficient and healthy disposal system for many years. A failed septic tank system is a serious health and environmental hazard. The warning signs are obvious: wastewater ponding on the ground surface; the smell of sewage near the tank or land treatment area; slow running drains or toilets.

For conventional septic tank systems a pump-out of the system is typically required every three years, or possibly sooner if an outlet solids filter is installed. The septic tank is cleaned by taking the concrete lid off the tank, not by putting the pipe down the 'mushroom' vent. So make sure the lid is easily accessible.

For advanced on-site effluent treatment systems a record of servicing and maintenance must be kept, and a certificate (guarantee) of performance from the manufacturer (supplier) lodged with Environment Bay of Plenty (see rules 10 to 13 of the plan).



If you neglect your system it will let you down. If your system needs maintenance contact a local plumber or drainlayer, or maintenance contractor.

Maintenance and Performance Inspection and Certification Programme

Environment Bay of Bay runs maintenance and inspection programmes for conventional systems located in the Western Bay and in the Rotorua lakes catchments. These communities and areas are shown in Schedule 5 and Schedule 6 of the plan.

For Western Bay the communities are Maketu, Little Waihi, Omokoroa, Ongare Point, Te Puna, and Tanners Point (see Schedule 6).

For Ongare Point the first round of septic tank pump-outs and inspections must be completed by
1 December 2006.

For the Rotorua lakes catchments the communities are Brunswick, Rotokawa, Mourea, Okawa Bay, Okere Falls, Otaramarae, Hamurana, Gisborne Point, Hinehopu, Rotoma, Okareka, and Tarawera (see Schedule 5 and Schedule 6).

For Rotoma the first round of septic tank pump-outs and inspections must be completed by 1 December 2006.

For the Rotorua lakes catchments where septic tank systems are within 200 metres of a lake edge (see Schedule 5), a maintenance and performance inspection and certification program must be completed.

The first round of septic tank pump-outs and inspections must be completed by 1 December 2006 for Lakes Rotorua, Rotoiti, Rotoehu, Rotoma, Rotokawau, Okataina, Okareka, Tikitapu, Rotokakahi, Tarawera, Rotomahana, Okaro and Rerewhakaaitu.

These are systems that are not identified for reticulation in the Rotorua District Council's Ten Year Plan.



Information on these programmes is available from our website (www.envbop.govt.nz) or by contacting us.



Environment Bay of Plenty-certified operators carry out the maintenance and inspection. For a list of our certified septic tank inspectors contact us at 0800 ENV BOP (368 267) or visit our website (www.envbop.govt.nz). These tank inspectors complete forms issued by Environment Bay of Plenty that are then lodged with us to maintain a record of the servicing and condition of your system.



You can also ask for an inspection to be done on a system when you are selling or purchasing a property, for assurance that the system is functional and complies with the plan. If your system fails the inspection, it may need to be upgraded or modified.

Section Seven – How to apply for a resource consent

Contact our consents and compliance staff to discuss your proposal and find out the information we require. We have specific application forms for on-site effluent discharge. The forms can be posted to you, or visit our website to download them at www.envbop.govt.nz. There is an annual charge on each resource consent. The amount you are charged varies depending on the activity you do.



It is essential you provide all the relevant information required. Failure to do so can delay the processing of your application. If you are in doubt about what is required then please contact us for advice.



Mushroom vents above septic tank.

Does your activity require a consent or permission from someone else?

Permitted activities under the plan only relate to disposal of effluent on your property. A resource consent may be required if your effluent land treatment area is on a property owned by someone else. You will need written permission from the property owner as part of your application to Environment Bay of Plenty for resource consent to authorise the effluent discharge.

Installing or upgrading an on-site effluent treatment system requires a building permit from the relevant district or city council. You will need to contact one of these councils to obtain a building permit to authorise installing the tank system:

Tauranga City Council	07 577 7000
Rotorua District Council	07 348 4199
Western Bay of Plenty District Council	07 571 8008
Whakatane District Council	07 306 0500
Kawerau District Council	07 323 8779
Opotiki District Council	07 315 3030

For more information on the On-Site Effluent Treatment Regional Plan 2006 or on which systems meet the standards, visit our website at www.envbop.govt.nz, or contact us at 0800 ENV BOP (368 267) or email us at info@envbop.govt.nz.

Environment Bay of Plenty

- 5 Quay Street, Whakatane
- 1125 Arawa Street, Rotorua
- 6 Rata Street, Mount Maunganui

Post: P O Box 364, Whakatane

Phone: 0800 ENV BOP (368 267)

Fax: 0800 ENV FAX (368 329)

Pollution Hotline: 0800 73 83 93

Email: info@envbop.govt.nz

Website: www.envbop.govt.nz

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