
SECTION 2: Liquid Waste Strategy

2.1 INTRODUCTION

2.1.1 Liquid Waste Management Strategy

This Strategy is designed to provide for the sustainable management of liquid waste resources of the Gisborne District to protect and enhance the environment and the health, safety and wellbeing of the people of the District.

The Strategy provides an overall 'blueprint' for the District's management of liquid waste. It is a 'directions' document. Implementation may require preparation of Action Plans to address various components, and allocation of resources through the Long Term Council Community Planning processes.

The Strategy contains components of the Regional Policy Statement, and Regional and District Plans prepared under the Resource Management Act 1991 but should be considered as a separate policy document. It may require alterations to those plans to ensure consistency of direction and approach.

The Strategy identifies what is to be achieved long-term, how this is to be implemented, and the priorities for funding and activity.

2.1.2 Consultation and Participation

The Strategy has been collated directly from existing Council policy decisions following completion of statutory and other consultation processes. Any additions or changes from those decisions in the content of this document are intended to be minor and solely for clarification or consistency.

2.1.3 Review

This Strategy includes relevant parts of existing Council policies relating to liquid waste and puts in place a planning framework for liquid waste management for the next ten to twenty-five years. It is expected to be informally reviewed at three yearly intervals, along with monitoring and annual reporting, to confirm the targets are being met. It is envisaged that a more formal review will occur by the end of 2010.

2.1.4 Strategy Focus

The focus of the Strategy is on the following:

- ▶ Reducing the amount of liquid waste requiring disposal.
- ▶ Developing environmentally sound and cost effective systems for waste management.
- ▶ Building community awareness of the need to minimise the production of waste and consider the overall issues of liquid waste management from an environmental and cultural perspective.
- ▶ Addressing cost recovery systems to ensure an equitable, fair and affordable system is developed.
- ▶ Establishing and implementing 'minimum levels of service' for the district.

2.1.5 Definitions

Liquid waste is all unwanted water including ordinary stormwater and water contaminated by human sources and animals e.g. micro-organisms, oils and grease, BOD, hazardous chemicals, etc. It includes all the water and liquid wastes from households, shops, large and small industries, hospitals, schools, and mortuaries.

Domestic sewage includes toilet, bathing and washing waste. Apart from the contaminated liquids, faecal solids, fat, grit, toilet paper, sanitary products and even bits of plastic and metal make their way into the sewerage system. Sewage carries bacteria, viruses and other pathogens. Small quantities of heavy metals and persistent pollutants that may accumulate in the food chain are also present.

Industry wastewater (trade waste) includes the organic material from food processing, sand and silt, bacteria and products from meat and fish plus cleaning products. Major industries now carry out primary treatment of their waste on site before discharge into the city sewer. Unlike other cities, the industries within Gisborne District do not produce major quantities of heavy metals or other persistent contaminants.

A glossary defining other words and terms used in this Strategy can be found at the back of the document.

2.2 LIQUID WASTE PROFILE

2.2.1 Reticulated Wastewater Treatment and Disposal within the District

Piped sewerage systems are only available in Gisborne City, Te Karaka and some Te Puia Springs properties. These, respectively, discharge sewage into Poverty Bay, treated effluent into the Waipaoa River via oxidation ponds, and treated effluent into Ratahi Lagoon via a package activated sludge plant and subsequent disinfection stage. The City discharge into Poverty Bay is milliscreened but is otherwise untreated at present. A strategy is in place to install treatment systems for the Gisborne City sewage in stages, as outlined below.

The water flow through the current City wastewater system is about 13,000 tonnes a day (ie, about 13,000,000 litres). Wastewater makes its way to the Council's milliscreening plant located at the Stanley Road/Centennial Marine Drive intersection. At the plant wastewater is passed through three rotating milliscreens with 1mm wide and 200mm long slots. The aim of this is to remove solids prior to discharge to the sea. Some small, thin solids may get through. After milliscreening, the remaining wastewater is discharged into Poverty Bay through the 1.8km long, 750mm diameter submarine outfall pipeline. The wastewater is disposed of through diffuser ports (holes) positioned along the last 200m of the pipeline to ensure that dilution with the surrounding seawater occurs.

The major horticultural processing industries (corn, grape, processing etc) produce very high BOD loads, and quite high nutrient loads, from fine solids and sugars. Meat processing also produces significant loads. Over the short operating season, the horticultural loads have historically been equivalent to the loads that would be expected from a population of several hundred thousand people.

Monitoring at the peak of the season has shown that BOD and nutrients in the discharge do not affect the ecosystems and water quality of the Bay (beyond the mixing zone). Visual effects have been a concern. They are being addressed by industry installing primary treatment systems onsite. Further treatment to BOD would be very expensive, and very difficult to operate. GDC has therefore planned an independent pipeline system to allow those industries that manage their discharges with onsite treatment facilities, to connect directly to the outfall pipeline. This is a similar arrangement to those operating in several other coastal cities, including Napier, Hastings and Wanganui.

Wastewater treatment plants usually consist of a series of treatment stages, each stage in turn removing a particular group of contaminants to a greater or lesser extent. These stages are also described as preliminary, primary, secondary and tertiary (solid waste disposal is required at each stage):

Preliminary Treatment consists of the physical removal of gross solids such as rags, plastics and food scraps, and also grit and fats that would interfere with downstream treatment. The current Stanley Road treatment facility fits into this category.

Primary treatment is an extended settling stage that removes most suspended solids, and a significant amount of biodegradable matter (BOD), fats and pathogens. Chemical and /or fine air bubbles may be used to help the process.

Secondary treatment is usually a biological stage in which naturally occurring organisms use biodegradable matter in the wastewater as a food source to provide energy and multiply. The soluble contaminants in the wastewater are turned into Biosolids, which can then be settled or filtered out. Biosolids must then be treated and disposed of, either to land or to landfill.

Tertiary treatment is a further treatment stage if a higher level of treatment is required to protect people and/or the environment. Steps can include filtration to remove residual suspended solids, extended nutrient removal to protect lakes and rivers from algae growth, and disinfection to kill harmful bacteria, viruses etc. An ultra violet (UV) disinfection step often follows secondary treatment.

The Gisborne Waste Water Strategy acknowledges the environmental and cultural drivers for improvements in wastewater management, and the socioeconomic effects of paying for those improvements. It comprises five stages:

1. Upgrade of city sewer and stormwater systems;
2. Upgrade of primary treatment at major industry sites;
3. Separate pipeline for major industry wastes after on-site treatment, and primary treatment of remaining City effluent at a site adjacent to the airport by 2010;
4. Upgrade to secondary treatment by installing an activated sludge plant and UV disinfection (or equivalent) by 2016;
5. Installation of "through land" treatment scheduled to be completed by 2017.

Stages 1 and 2 are currently being implemented. The rationale for this approach is:

- ▶ It is not practicable to cease disposal of human waste to sea immediately. A range of steps need to be taken before that could be achieved - they include: minimising the volume of wastewater by upgrading stormwater and sewer systems, building treatment plants, and identifying a feasible, sustainable option for through land disposal; and
- ▶ The timing of the phases of the wastewater strategy takes account of the community's willingness to pay through graduated rates increases (as evidenced by the public survey results) and their ability to fund improvements (independent advice shows the Council on behalf of the community cannot fund a debt level beyond \$40 million).
- ▶ Cost estimates show that treatment systems using oxidation ponds are likely to be cheaper for the community in the long-run, but no suitable site was found for ponds within a reasonable distance from the city.

When first adopted in 2002, the Strategy provided for investigation of "to land" disposal options. Disposal to land of the water left after treatment of the city's wastewater has been a goal for many in the community. In particular, a Maori view is that passage through the earth is required to cleanse water that has been in contact with human waste (refer Section 2.3 of this plan also).

Council has recently assessed land disposal options for treated City wastewater on the basis of "What would be needed to make this option work?" The outcomes were:

- ▶ All weather disposal to hill country would take 2,600 hectares (6,500 acres). Steep land would slip if water was added. There are pockets of rolling country reasonably close to the city but they are scattered. There is less than half the area needed, so disposal to hill slopes is not feasible.
- ▶ Disposal to flat land is technically feasible, but not sustainable. If the dune land close to the coastline was part of the disposal area, it would take approximately 850 hectares. If the more porous dune country was excluded, the required area would increase to over 1,100 hectares of free-draining soils (which are some of the best horticultural soils). Going to other locations with heavier soils would increase the area needed. The cost of land alone, without piping, would be approximately \$50M. Ongoing wastewater disposal to those areas would permanently damage soils and could put groundwater at risk. It would permanently prevent use of that land for horticulture.
- ▶ Land disposal is considered to be not sustainable because of the large land area needed; the effects on soils, ground and surface water; and the social disruption and costs.

Council considers that ongoing use of the Poverty Bay outfall to discharge the City's treated wastewater is the only sustainable option currently available for the foreseeable future. The Strategy has been amended accordingly (refer 2.8.2).

2.2.2 Non-reticulated Settlements and Rural Housing

In all locations except Gisborne City, Te Karaka and part of Te Puia, sewage is treated on site. Council's assessments of wastewater services for 13 rural townships during 2005 have indicated that the current levels of service are appropriate for those communities.

The most common systems in use are septic tanks of various designs, with effluent dispersed through soakage fields. Soakage fields can cause adverse effects where soakage is inadequate or the systems block. Sewage can then break out to the surface of land or enter groundwater or waterways. If effluent breaks out or ponds, this can transmit diseases, cause odours and attract insects.

Where soakage is adequate, these systems can still contaminate shallow aquifers, or watercourses with nutrients, bacteria and viruses. This can affect the ecology of the waterway. It can also impact on human health where the water is used for domestic supply or where people come in contact with it.

These systems produce septage. This is semi-solid waste that accumulates in septic tanks. It is generally collected by commercial operators and disposed of into pits or treatment / disposal plants. Land disposal of septage can cause problems of land and water contamination, odour, breeding of rodents and insects, and the transmission of faecal bacteria, and viruses.

Septic tanks can cause localized problems if they malfunction. This is usually due to unsuitable design for the site, the tank not being adequately maintained or the need to relocate the effluent drain. These systems must be correctly designed for the site, because soakage conditions vary widely throughout the region.

They need to be tailored to soil and climatic conditions (refer Guidelines for On-Site Wastewater Treatment and Disposal in the Gisborne District : Part C (revised April 2002).

Other systems are also available. These can all be effective methods of treating sewage and rendering it low risk if correctly designed, installed and operated:

- ▶ Composting and other dry toilets.
- ▶ Modern "multi stage" septic systems.
- ▶ Long-drop toilets.
- ▶ Electric and gas incineration systems.
- ▶ Total containment systems.

A comprehensive site assessment is required to determine the best system for each location, so that the design of an appropriate disposal system can be allowed for. Some of the factors that need to be addressed are:

- ▶ Slope and contour.
- ▶ Geology.
- ▶ Vegetation.
- ▶ Ground water dynamics.
- ▶ Soil permeability.
- ▶ Water supply source (town supply, rainwater, bore etc).

- ▶ Boundary margins, site constraints.
- ▶ Distance to watercourses.

Regular maintenance is also essential or systems break down, or malfunction. The monitoring of the 'status' of systems may be implemented to improve their life and duration, and for the reduction of environmental and health related effects.

Whether sewage reticulation (along with water supply) should be installed for the Wainui Beach and Okitu communities has been an issue for several years, involving environmental concerns, development aspirations and concerns, and expectations as to levels of service. Council's Urban Coastal Strategy (2005) includes an urban design project that has the purpose of reviewing development controls, identifying any further residential development potential around Wainui/Okitu, and resolving issues related to wastewater and water supply.

2.2.3 Urban Stormwater

By the definition "contaminant" in the Resource Management Act most stormwater is probably contaminated. For the purpose of this Strategy, uncontaminated stormwater is defined as having such a low level of contaminants that the contaminants themselves will have minimal adverse effect on the environment. At such low levels the discharge of uncontaminated stormwater can be considered similar to the discharge of water into water. But the discharge of "contaminated" stormwater is no different from the discharge of any other liquid contaminant and the issues and management should be considered accordingly.

Rainwater that washes off hard surfaces such as roofs and roads picks up contaminants in the environment that cause concern e.g. zinc from car tyres and brake pads. These go into the separate stormwater drainage system. In wet weather some stormwater gets into the sewers through cracked pipes and backyard gully traps, or where downpipes have been connected illegally. When too much stormwater overloads the sewer system, overflows occur into backyards, streets and the city's streams and rivers. Sewer overflow has been a major source of urban river and stream contamination. To control stormwater getting into sewers, Council is well through upgrading nearly three-quarters of the city's stormwater system. Overflows have been significantly reduced, but still possible in intensive or prolonged rainfall conditions. Replacement of cracked pipes on private properties is important and there is need to determine how these costs will be met.

The stormwater component of the Gisborne City reticulated wastewater system receives minimal treatment before its subsequent discharge into Poverty Bay waters. There are no systems in place other than the filtering of rubbish and miscellaneous material. The first 'flush' of stormwater after a rainstorm absorbs and picks up toxic material off roads, concrete etc and can be contaminated with heavy metals, oils/greases and silts. Ideally this initial 'flush' of stormwater should be contained and treated prior to its discharge into Poverty Bay, but there is currently no practicable method for doing so.

Some of the ways the stormwater system can become contaminated:

- ▶ Illegal disposal of oils, paints or chemicals down stormwater drains.
- ▶ Cleaning of paintbrushes near stormwater inlets.
- ▶ Littering (discarded waste can wash into stormwater drains).

Council's assessments of stormwater services for 13 rural townships during 2005 have indicated that the current levels of service are appropriate for those communities.

2.2.4 Rural Stormwater

Rural stormwater is any surface water runoff caused by the direct result of precipitation. Discharge of uncontaminated stormwater and water can cause scouring, erosion of watercourse banks and bed around the discharge point and possibly downstream. Also the addition of extra water volume to a watercourse can cause flooding both upstream and downstream.

Animal waste from dairy, pig or poultry farming can benefit the soil as a natural fertilizer but can cause harmful discharges to land and water if applied inappropriately. Similarly leachate from maize waste or silage stored as stock feed can have similar effects.

With the discharge of water to water there is the additional cultural issue of the discharge of mixing water bodies or transfer of water from one catchment to another. Maori find this practice offensive as it degrades the Mauri of both water-bodies.

2.2.5 Mobile stock trucks, camper vans and boats

2.2.5.1 Stock Trucks

In recent years the disposal of stock effluent from trucks onto land, particularly spillage onto roads, has become a prominent issue. Effective disposal of effluent on to land and water needs to be managed. Effluent spillages from stock trucks on to roads can result in slippery road surfaces that can be hazardous to road users, particularly cyclists and motorcyclists, and can cause accelerated decay of the road surface. Effluent spillage has an adverse effect on the pleasantness and general amenity of the incident locations.

Although most stock carriers have effluent tanks fitted to their trucks, many encounter effluent disposal difficulties once they have reached their destination. This is due to inadequate disposal facilities. As a result there have been instances where effluent has been dumped illegally onto roads with resulting contamination of watercourses.

There is an area for effluent disposal at one of the larger stock firms in Gisborne, but there is a need for some other facilities in the area and for farmers to take more responsibility for holding their stock for the required time before transporting them.

While some companies suggested areas for disposal points, further discussions are required between transport and stock companies, farmers and the Gisborne District Council as to the provision and management of a disposal system. Refer Stock Effluent from Trucks: Resource Management Guidelines for Local Authorities.

2.2.5.2 Camper Vans

There are two publicly accessible campervan waste disposal facilities in the Gisborne City area, one at Te Araroa and one at Tokomaru Bay. There are another three at camping grounds in Gisborne City, one at Te Araroa and one at Anaura Bay. Only five of the 11 camping grounds in the District have dump stations.

There are a number of enquiries each year about the facilities available for campervan disposal from members of the public and associations. There appears to be a need for further facilities in the Gisborne District, as was identified in the Solid Waste Strategy. At the present time options are being considered regarding the management and cost of providing more of these facilities.

2.2.5.3 Ships and Boats

The Resource Management (Marine Pollution) Regulations 1998 control dumping and discharges of waste including human sewage into the sea from ships and boats. These regulations came into operation from 1 July 2000. They prohibit the discharge of untreated sewage into the sea unless the discharge is into waters more than 5m deep and more than 500m from shore or a marine farm.

2.2.6 Transients and temporary-campers, shearers, field workers and builders

The Gisborne District is one of the last bastions for freedom camping within New Zealand. Currently beaches and other areas available for freedom camping include Pouawa Beach, Loisel's Beach, Tolaga Bay, Kaihua Beach, Tokomaru Bay, Waipiro Bay, Donneraile Park and Turihau Beach (restricted time). People may camp in these areas from Labour Weekend in October through to Easter. Campers must provide their own toilet facilities.

Council provides liquid waste management stations for caravans and portable toilet waste at these sites. These are emptied and transported to Council / Contractor disposal sites within Gisborne City. Only approved tents, caravans and mobile homes are allowed within the freedom camping areas. Council Officers are employed throughout the freedom camping period to assist campers with information and provide enforcement where required.

Shearer's quarters on large blocks of land are required to have their own facilities, with private disposal usually located on the property. The disposal is often by conventional trenches and usually accommodates all the living quarters on the property.

Temporary toilet facility requirements for field workers and short-term events can be well serviced using chemical containment systems. Temporary use of chemical toilet facilities does not require Resource Consent however consideration must be given to handling and disposal of the contents. In some circumstances long drop toilets may be allowed via resource consent.

Builders of new houses or structures quite often do not have the facilities in place to take care of domestic waste. The use of portaloos or long-drop toilets in rural areas is generally used. Use of long-drops even for temporary use in remote areas is contrary to the Permitted Activity Rules of the Plan. Their use can be considered under application for resource consent as Restricted Discretionary Activities.

2.2.7 Hazardous Liquid Wastes

Hazardous liquid wastes, are hazardous substances that are unwanted and economically unusable. They may contribute to the economic and social well being of the community. They are important to agricultural, horticultural, forestry, industrial and domestic sectors, which are generally why they are found, close to people and the environment. Their use can add considerably to the health, prosperity, and quality of life of people. Common examples of hazardous substances include paints, fuels, oils, cleaners, agrichemicals etc. Many common substances can be hazardous at some stage during their existence and benign at others.

The degree of risk depends on the quantity, concentration and form of the substance and how it is managed.

Discharge of hazardous substances into the environment may occur for a number of reasons. It may be for purposes of use, e.g. drenching and weed spraying; or may be a by-product of use, subsequently discharged into the environment as a means of disposal of the substance. The hazardous nature of these substances means that the effects of discharge need to be managed appropriately. The reason for discharge (use, intentional or accidental release or disposal) does not alter the hazardous nature of the discharge and the effects that it may have on the environment. But the reason for discharge may alter the manner in which the chemicals are released and this will subsequently alter the adverse effects that may occur.

The degree of control over discharge of the substance, the location of discharge and the quantity, type, rate and amount of chemical released will all determine what type of adverse effects may occur. It is important therefore that policy addresses not just discharge of hazardous substances generally, but also provides for accidental release and spills and discharge for disposal.

Inappropriate final disposal can be a particular problem if the last owner of the substance no longer acknowledges responsibility for it, or if the owner is unable to be identified, located, or is not in a financial position to address the adverse effects of disposal. Effects may persist for a considerable period of time after disposal and may pass into air, land or water by leaching or decay. There will continue to be a need for the disposal of hazardous substances.

There is a lack of safe disposal sites within the Gisborne region for hazardous substances. A short-term storage facility for hazardous waste is being planned, to enable collection of wastes for transporting to disposal sites outside the District.

2.2.8 Pollution Incidents-intentional and accidents

Adverse effects arising from discharges, accidental spills and/or excessive or unprotected exposure resulting from the transportation, storage, use, treatment and disposal of hazardous substances pose a risk to the health and safety of people and communities, and the natural and physical resources of the region.

2.3 TANGATA WHENUA PERSPECTIVE

Traditional methods for managing human waste by tangata whenua involved discharge to land. The value of the role played by Papatuanuku in the managing of human waste disposal remains as relevant to Maori in modern times as it was in the past. Passage through papatuanuku (or mother earth) is considered necessary to purify/neutralize human waste prior to discharge.

Many Maori are offended by any discharge of human wastes into water. Water has different states, according to its degree of pollution or alteration from its more pure form (rainwater) which is waiora. Water also has Mauri which must be protected in order for the water to remain wholesome and pure. Mauri means literally "life force", "vitality", or "essence" of the resource. Failure to protect the Mauri of water is a failure to preserve the resource for the enjoyment of future generations. Tangata whenua, as kaitiaki, have concern and responsibility for protecting the mauri of the water.

Specific areas of water have their own mana, tapu, taniwha, and waahi tapu that must be respected.

Although the physical effects of discharges to water can be difficult to measure quantitatively, the effects of discharges on perceptions, cultural values, and enjoyment and use of water resources are readily understood. There is a consensus, for example, that the essentially untreated discharge of domestic effluent into Poverty Bay is offensive and that water quality at bathing beaches should meet bathing water standards.

Tangata whenua are opposed to the discharge of human wastes directly into water and are particularly concerned by rural discharges, industrial and urban runoff, leachate, and disposal of dredgings directly into water. Tangata whenua seek to have sewage disposed to land rather than discharged into water so that, by passing through land, the Mauri of the water is restored.

Traditional methods for managing human waste did result in discharges to water that eventually found their way to the sea. Those traditional methods involved discharge to land. Natural bacteria, plants, rainfall, wind and sunlight then broke down the wastes. Soil filtration also helped. Heavy rainfall would however have washed some matter off the land into streams at times, and groundwater seepage would have transported some pollutants down into the groundwater and then out into streams, rivers and the ocean.

The disposal of biosolids is an essential part of any land based treatment system. Site selection criteria for biosolids disposal will ensure that as far as possible, any cultural sites are avoided. Agreed protocols will be put in place to properly manage unexpected site findings.

2.4 LIQUID WASTE MANAGEMENT ISSUES

- ▶ Discharging contaminants to air, land and water can result in adverse effects, to the environment, Maori values, recreational opportunities, and people's health.
- ▶ Developing environmentally sound and cost effective systems for waste management.
- ▶ Establishing and implementing 'minimum levels of service' for treatment and disposal of liquid waste in the district; and the socio-economic impacts caused by costs taken on by ratepayers to pay for treatment improvements.
- ▶ Defining a charging regime for the costs of the district's waste resources management in a way that reflects its full costs, and acts as an incentive for the community to reduce the waste it generates; and ensuring that cost recovery systems are equitable, fair and affordable.
- ▶ Finding alternative septage disposal sites.
- ▶ Use of dyes and other materials to trace movement of water has the potential to be toxic to aquatic organisms. It can create concern among viewers unaware of its true nature.
- ▶ Controlling the significant amount of contaminants entering watercourses and the coastal marine area through diffuse sources cannot be effectively achieved in the short term.
- ▶ Discharges of stormwater and discharges of water from pumped field drainage have the potential to cause erosion of the banks of the receiving waterway by scouring, and flooding of the receiving waterway, both up and downstream.
- ▶ Discharges from water supply reservoirs or pipelines have the potential to introduce water treatment chemicals that may have adverse effects on aquatic life and ecosystem. They could also cause localized flooding and erosion.
- ▶ Runoff of sediment from earthworks has the potential to change the natural clarity and colour of water bodies. It can adversely affect aquatic life.
- ▶ Discharges from temporary lowering of groundwater levels have the potential to cause localized flooding or erosion.
- ▶ Where feasible treating waste as a resource and kua e maumau or do not waste our resources.

2.5 APPROACHES TO MANAGEMENT OF LIQUID WASTES

2.5.1 Physical Works

- ▶ Progressive upgrading of sewer systems so as to reduce the frequency and quantity of sewage overflows into rivers.
- ▶ Upgrading of facilities to better and more efficient systems.
- ▶ Reducing quantity and severity of environmental damaging events.

2.5.2 Education and advocacy

- ▶ Education is a potentially viable means of ensuring adverse effects do not occur (eg, encouragement of urban land use methods that may reduce the frequency and quantity of contaminants entering the stormwater and sewage system).

2.5.3 Regulatory approaches including trade waste bylaws.

- ▶ Charges for water use and wastewater disposal through bylaws and regulatory approaches are probably the most effective means to cement into the community a change in attitude.

2.5.4 Waste Minimisation

- ▶ Producers and consumers often generate excessive waste. When resources irretrievably enter the waste-stream the environment is adversely affected through the depletion of resources. Disposal of waste itself may also adversely affect the environment.
- ▶ Effects of disposal of waste can include contamination of water by discharge of contaminants and from leachate, contamination of land with toxic substances, odours and dust, visual degradation, and problems with birds and vermin.
- ▶ Many products are designed for a limited or one-trip life. This means many products are discarded which could be reused or recycled. Replacing disposable products depletes resources, both in the use of raw materials and also in winning processing and transporting the raw materials and the new products.
- ▶ The objective of minimisation is the progressive reduction in the quantity of solid, hazardous and liquid waste generated in the region and consigned for disposal or discharged into the environment.
- ▶ Essentially there are three methods to promote wastewater minimisation: education, economics and enforcement (addressed later in this Strategy).

(Ref: 5.3.4.1 Regional Plan for Discharges to Land and Water)

2.5.5 Reduce, Reuse, Recycle, Recover

- ▶ Continuing to gather waste stream data will provide a database of wastes generated and disposed of within the district in a manner consistent with the National Waste Analysis Protocol. This information can be utilised to assess changing patterns of waste production and disposal techniques in terms of:
 - quantity and characteristics of wastes entering a treatment or disposal facility.
 - quantity of liquid waste generated in the District and consigned for disposal.
 - The quantity of hazardous wastes generated in the District and consigned for direct disposal, or pre-treatment then disposal.

2.5.6 Residue treatment and disposal

Ongoing environmental monitoring of surface and groundwater is undertaken by the Council and will assist in determining the effects associated with the residual management of solid wastes.

Landfills are different to most other activities in that environmental effects can be very slow to appear. For instance a drum of chemicals could take some time to corrode and release its contents, then further time to migrate to a point where a detrimental effect is observed. The Council will therefore undertake monitoring of landfills and composting operations at three levels:

- i) Assessment of appropriate sites for proposed landfills and composting operations.
- ii) Monitoring of management practices to ensure compliance with management plans and other resource consent conditions.
- iii) Monitoring of environmental effects.

This will involve the preparation, by the Council, of a register of operational and closed refuse disposal sites/landfills and composting facilities. As well, the Council will implement a comprehensive compliance-monitoring programme directed at landfill management practices, as well as an impact-monitoring programme.

Specific impact monitoring of the effects associated with any landfill or composting facility will be included as a condition of the resource consent, and is therefore the responsibility of the landfill operator who may contract the Council to carry out some of this work. This may include such things as monitoring of landfill gas. The Council will have an audit role. The results of this impact monitoring can then be combined with the results of the Council environmental monitoring programmes.

2.6 OVERALL GOAL

To meet the overall vision of the District for the management of waste resources from generation to disposal in a way that:

- ▶ Maintains and, where practicable, enhances the physical and cultural quality of natural waters.
- ▶ Addresses community concerns relating to water quality in Poverty Bay.
- ▶ Ensures that water quality generally will not be diminished and that sustainable management will occur.
- ▶ Enables identification and understanding of issues and options from each other's perspective, and building objective, fair ways of assessing management options.
- ▶ Seeks solutions that will be acceptable to as many people as possible.
- ▶ Progressively upgrades the quality of existing point and non-point discharges of wastewaters to the natural environment.
- ▶ Avoids significant adverse effects of wastewater treatment and discharges to the environment.
- ▶ Improves information systems and establishes improved policies, methods, rules, classifications and standards.

2.7 OBJECTIVES

(Key Principles to Achieve the Goal)

1. Progressive reduction in the quantity of solid, hazardous and liquid waste generated in the region and consigned for disposal or discharged into the environment.
2. To have sufficient information on the state of the environment, and the effects of the use of hazardous substances and the disposal of solid, liquid and hazardous wastes, to be able to achieve sustainable management of the District's resources.
3. The quality of existing point and non-point discharges to water is progressively upgraded.
4. There is minimal threat to human health from the collection and disposal of liquid waste.
5. The adverse environmental effects of contaminants entering surface, coastal and ground water from point and non-point sources are avoided, remedied or mitigated.
6. The adverse environmental effects from discharges from non-reticulated domestic waste disposal systems shall be avoided, remedied or mitigated.
7. Discharges of stormwater to watercourses, either directly or via pumped field drainage should be managed to avoid remedy or mitigate adverse effects including contamination of natural water, erosion of the banks or beds, or flooding as far as practicable.
8. Discharges of uncontaminated water to water should be managed to recognise and avoid adverse effects on the Mauri of the waters.
9. Avoidance of the actual or potential adverse effects on human health and the environment arising from the production, transport, storage, use, treatment and disposal of hazardous substances.
10. Minimise the number of spills and consequential adverse environmental effects that may occur during transportation, storage, use and disposal of hazardous substances.
11. The adoption of cleaner production practices by the Council and by industries involved in the production, transportation, storage, use or disposal of hazardous substances in order to reduce the quantity and concentrations of waste.

Sources: Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances; and Proposed Regional Coastal Environment Plan.

2.8 POLICIES and IMPLEMENTATION METHODS

Note 1 ▶ References in this section may be subject to change where the source document has undergone change through the processes prescribed in the Resource Management Act 1991.

Note 2 ▶ Significant parts of the Solid Waste Management Strategy (Section 3) apply to liquid waste also. They are not repeated here but are cross referenced where applicable.

2.8.1 Integrated Management

Policies

<p>1. As far as practicable, the waste management hierarchy of reduce, reuse, recycle, recovery and residual management of wastes will be implemented by all involved in waste generation and management in the Gisborne District. This will require the following:</p> <ul style="list-style-type: none"> ▶ Reducing the amount and toxicity of material entering the waste stream. ▶ Considering the effects on the environment of producing materials in the first place. ▶ Reusing as much material as practicable. ▶ Recycling the material that cannot be reused, if appropriate, after taking account of environmental and economic effects. ▶ Implementing cleaner production in an appropriate manner. ▶ Providing for safe and effective residual management for the material that remains once the waste stream has been reduced through the application of each of the previous steps. 	<p>2.1.2.1 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances</p>
<p>2. Council will provide leadership by example in the reduction of waste.</p>	<p>2.1.2.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>
<p>3. As far as practicable the costs of waste management should be met by waste generators.</p>	<p>2.1.2.3 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>
<p>4. Council will develop an integrated waste management framework in the District and establish an administration system that creates an effective efficient and equitable waste management environment throughout the District.</p>	<p>2.1.2.4 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>
<p>5. Council will liaise with other relevant local authorities with regard to waste management.</p>	<p>2.1.2.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>

Policies	
6. Within the scope of a "Monitoring Strategy", Council will provide scientifically defensible information on the environment as a basis for the review of the objectives, policies and methods of implementation outlined in the Waste Management Section of the Regional Policy Statement, and as a basis for the issuing of resource consents.	5.3.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
7. To maintain and where appropriate enhance water quality.	
8. Council will promote land use practices that avoid, remedy or mitigate adverse effects on water quality.	2.6.3.1.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
9. Council will continue to work with Tangata Whenua over waste disposal options.	2.6.3.1.9 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
10. Particular regard will be given to avoiding the adverse effects of discharges that: <ul style="list-style-type: none"> ▶ do not degrade readily into harmless forms; or ▶ have the potential to be transformed into a more toxic form; or ▶ when combined with other contaminants, have serious synergistic effects; or ▶ have poorly understood effects. 	2.6.2.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
11. Avoid, remedy or mitigate the adverse effects of discharges on the amenity of the environment, having particular regard to the amenity values in particular locations.	2.6.2.3 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
12. In assessing a resource consent application for point source discharges, RMA Consent Authorities should pay particular regard to: <ul style="list-style-type: none"> i. whether the proposals to avoid, remedy or mitigate the effects of discharges are the best practicable option; whether the site is suitably located, having regard to alternatives; ii. Classification of receiving waters pursuant to section 69 of the Resource Management Act 1991. 	2.6.2.6 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
13. All point source discharges of contaminants to water should avoid creating significant adverse effects on the life supporting capacity of ecosystems and habitats.	2.6.2.1 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances (part).
14. Adverse effects of discharge of liquid wastes to land should be avoided by: <ul style="list-style-type: none"> a) Ensuring that the cumulative effects of discharges to land are fully assessed b) Requiring waste treatment facilities to contain adequate provisions to avoid the escape of untreated effluent during emergencies. 	2.6.2.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.

Policies	
<ul style="list-style-type: none"> c) Ensuring that waste which contains toxic contaminants is adequately contained to prevent leakage into soils, or waterbodies. d) Avoiding locating discharges in areas of high amenity or natural character. e) Avoiding locating waste disposal sites where they are prone to inundation or other natural hazard. f) Requiring after-care of waste disposal sites at the end of their useful lives to ensure that the sites are secure and do not have an adverse effect on the local amenity. 	
<p>15. When considering applications to discharge water to water, RMA Consent Authorities should take into account:</p> <ul style="list-style-type: none"> ▶ The sensitivity of the receiving environment, ▶ Classification of receiving waters pursuant to section 69 of the Resource Management Act 1991. ▶ The values of tangata whenua that may be affected, the physical processes acting on the area of discharge including temperature change, scouring, erosion, and flooding. 	2.8.2.2 (1-2) Regional Plan for Discharges to land and water.
Refer also to solid waste policies.	Integrated Management 1-4 Reduction 1 & 2 Hazardous Waste 1-3 Semi-liquid Special Wastes 1 & 2 Promotion, Publicity, Education & Facilitation 1 and 2 Provision of services 1, 4 & 5 Cost allocation 1 & 2 Monitoring 1-3
Implementation	
A. Physical Works	
<p>1. Manage the Council's role as provider of services, particularly, infrastructure systems that serve the District, in a manner which takes account of, and does not adversely affect, the amenity values of the residential environment.</p>	17.13.4 Proposed Combined Regional Land & District Plan.
Refer also solid waste implementation methods.	Semi-liquid Implementation 1-4. Provision of Services Implementation.
B. Regulatory and Financial	
<p>1. Within 6 months of the PRCEP becoming operative Council will initiate a review of permits to discharge contaminants to the Coastal Marine Area with a view to amending the conditions of those permits that do not conform with policies or rules in that plan.</p>	3.4.5B Proposed Regional Coastal Environmental Plan.
<p>2. Point source discharge of untreated sewage and/or untreated agricultural effluent directly into the district's fresh water bodies shall be a Prohibited Activity, for which no resource consent shall be granted.</p>	2.6.3.2.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
<p>3. Discharge of storm water within the district is subject to the restrictions and conditions stated hereunder.</p>	Detailed in Transitional Regional Plan Part A, 6. Also Transitional Regional Coastal Plan.

Policies	
B. Regulatory and Financial	
Refer also solid waste implementation methods.	Cost Allocation Implementation 1.
C. Monitoring	
1. Council will continue to gather waste stream data including the quantity and characteristics of wastes entering a treatment or disposal facility.	2.1.3.1 and 5.3.4.1 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Based on information associated with discharge permits and annual returns, Council will establish a system for recording and comparing the volumes of liquid effluent to be discharged into the environment. Information relating to individual consents as well as cumulative totals for the region as a whole, individual districts or sectors can then be generated. Council will also undertake audit monitoring of the effects associated with the disposal of trade wastes to the sewer to ensure that the constituent territorial authorities continue to enforce compliance with trade waste bylaws.	5.3.4.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
3. Council will develop a database of number, location and nature of known point source discharges of contaminants to the District's water bodies.	2.6.3.1.13 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
Refer also solid waste implementation methods.	Monitoring Implementation 1 & 3-5
D. Education, Advice and Advocacy	
1. Council will monitor initiatives by central government and industry on waste management matters and, where necessary, will actively advocate and liaise on matters that affect the district in the development of policies and strategies which need to be co-ordinated at a national level and to promote the implementation of cleaner production and other waste minimisation initiatives in the District on an on-going basis.	2.1.3.13 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Rural and urban land use activities will be encouraged to adopt practices that minimise the use or creation of potential contaminants, and reduce the quantity of contaminants entering land, air or the waters of the Coastal Environment.	3.4.5A Proposed Regional Coastal Environment Plan.
3. Council will promote the adoption of cleaner production technologies in trade and agriculture premises.	2.6.3.1.1 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
4. Council will promote land use practices that avoid, remedy or mitigate adverse effects on water quality.	2.6.3.1.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
5. Council will encourage businesses, residents and community groups to separate at source wastes with practical alternative uses and to compost organic waste where possible. Specific information and educational material will be produced for this purpose.	2.1.3.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.

Policies
D. Education, Advice and Advocacy

6. Council will consider using incentives for waste reduction.	2.1.3.3(part) Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
7. Council will provide an advisory service for the exchange of wastes.	2.1.3.6 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
8. In conjunction with any approved Waste Minimisation Groups, industry and the community, Council will conduct research into and, where appropriate, carry out trials of, options and the economics of waste re-use, recycling and resource recovery.	2.1.3.9 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
9. Council will take active steps to educate and disseminate information on waste minimisation and cleaner production.	2.1.3.10 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.

D. Education, Advice and Advocacy

10. Council will liaise with other Councils with similar waste streams so that data can be cross-utilised and in so doing reduce the data gathering required.	2.1.3.14 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
11. Council will support the preparation of Iwi Waste Management Plans.	2.1.3.16 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
12. Council will provide information, and where appropriate develop guidelines relating to acceptable standards of effluent treatment.	2.6.3.1.7 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
13. Council will encourage and promote better land management and land use practices to avoid diffuse source pollution of waterways, by a combination of education and non-statutory guidelines, service delivery and regulation. Council will educate and advise landowners about how they can minimise run-off and leachate from agricultural waste, fertiliser, pesticides and herbicide applications.	2.6.3.1.6 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
14. Council will use both education and enforcement to minimise the occurrence of unauthorised discharges. Council will work with communities to identify the causes of unauthorised discharges and will educate the wider community and specific industries about the effects of illegal discharges.	2.6.3.1.3 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
15. Council will provide information, including codes of practice and government guidelines, and where appropriate develop guidelines relating to acceptable standards of effluent treatment and the alternative systems and management practices that will enable these standards to be met.	2.6.3.1.7 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.

Policies

16. Council will continue to work with tangata whenua over waste disposal options and give particular consideration to any relevant lwi management plans or statements of tangata whenua views.	2.6.3.1.9 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
Refer also solid waste implementation methods.	Promotion, Publicity, Education and Facilitation Implementation 1 & 5.

2.8.2 Reticulated Sewage

Policies

Council will progressively upgrade the Gisborne City sewer system so as to reduce the frequency and quantity of sewage overflows into rivers.	3.4.5K Proposed Regional Coastal Environment Plan.
1. Council will implement a phased Waste Water Strategy for Gisborne City. The Strategy continues sewer and stormwater remedial works; and anticipates significant reductions in microbiological loadings, oil and grease loadings, and suspended sediment loadings in the discharge. Investigations into the feasibility of disposal through land, and disposal to land, will also be made. Alternative strategies based on new technologies or further investigations may be considered provided equivalent or better discharge quality is achieved.	3.4.5C Proposed Regional Coastal Environment Plan).
2. Council will upgrade and manage the Gisborne City sewer system in order to eliminate overflows to private property caused by stormwater infiltration.	2.6.3.1.14 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
3. Council will maintain the Te Karaka sewer system.	

Implementation

A. Physical Works

- Up-grade of Gisborne City wastewater treatment will be carried out in the following stages, subject to Resource Management Act proceedings.

Stage One

City sewer and stormwater systems upgrading to minimise rainfall – induced overflows and high flows. Scheduled to be completed in 2010.

Stage Two

Upgrading to primary treatment level at major industry sites. Continued milliscreening of entire flow before outfall discharge. Scheduled 2004/05.

Stage Three

Separate pipelines for major industries to allow discharge to the sea outfall after on-site primary treatment. Primary treatment of remaining City flow at airport site then outfall discharge. Scheduled to be completed in 2010.

Stage Four

Upgrade to secondary treatment and ultraviolet disinfection (or equivalent) of City flow at airport site. Scheduled to be completed in 2016.

Gisborne City Wastewater Strategy

This strategy was amended in April 2005 by deleting trials of “through land” treatment (was Stage 5) and deleting investigation of “to land” disposal (was Stage 7).

Installation of through land treatment, previously Stage 6, is now Stage 5.

Investigation of “to land” disposal options was carried out in the 2004/05 year.

Refer section 2.2.1 of this plan.

<p>Stage Five Installation of through land treatment before sea outfall discharge. Scheduled to be to be completed in 2017.</p> <p>2. Continue up-grades of Gisborne City sewer reticulation</p>	
<p>B. Regulatory and Financial</p>	
<p>1. Use of water saving and wastewater reduction technologies could be promoted by the introduction of bylaws. There is however a break-even point when water reduction will result in a need to flush the sewers.</p>	
<p>2. Council will maintain and enforce a trade waste bylaw under which it will require industry to treat its own effluent prior to discharge to the sea through the reticulated system.</p>	<p>3.4.5D Proposed Regional Coastal Environmental Plan.</p>
<p>3. Overflows of untreated sewage from sewage reticulation are permitted activities provided that:</p> <ul style="list-style-type: none"> ▶ The overflow occurs only in periods of heavy rainfall events, and ▶ Regular monitoring of identified points of overflow is undertaken at determined points. 	<p>Rule 2.6.3.2.1 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>
<p>C. Monitoring</p>	
<p>1. Council will undertake audit monitoring of the effects associated with the disposal of trade wastes to the sewer to ensure that compliance with trade waste bylaws is enforced.</p>	<p>5.3.4.5 Liquid Waste (PART) Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>
<p>2. Council will develop and implement a three tier monitoring strategy for monitoring of coastal water quality.</p>	<p>3.4.5F Proposed Regional Coastal Environment Plan.</p>
<p>D. Education and Advice and Advocacy</p>	
<p>1. Council will encourage urban land use that reduces the frequency and quantity of contaminants entering the storm water and sewerage systems by:</p> <ul style="list-style-type: none"> a) Facilitating public and industry understanding of the causes and consequences of water pollution; b) Initiating a specific education programme for householders and businesses to discourage inappropriate waste entering the storm water system. c) Increasing awareness of appropriate alternatives and disposal methods. d) Supporting the use of unleaded fuels, pedestrian, cycle and public transport. e) Encouraging the separation of waste materials from stormwater in new subdivisions. 	<p>3.4.5J Proposed Regional Coastal Environmental Plan).</p>

2.8.3 Non-Reticulated Sewage

Policies

1. Systems used for disposal of effluent in non-reticulated areas shall be suitably designed for the local conditions. They shall be maintained so as to operate without causing adverse environmental effects.	2.7.2.1	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Where a reticulated sewerage system is available sanitary fixtures should generally be connected to it.	2.7.2.2	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
4. Ensure that new and existing developments have a wastewater treatment system installed and suitably maintained to treat all wastewater on site.	Policy 17.12 (15)	Combined Regional Land & District Plan.
5. Non-reticulated systems shall be designed and operated to ensure the avoidance of disease, contamination of water, odours, ponding and adverse effects on ecosystems.	2.7.2.3	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances (condensed).
5. Council will investigate and provide sewer reticulation for the Wainui/Okitu if supported by that community.		
Refer also solid waste implementation methods.		Semi Liquid Special Waste Policies.

Implementation

A. Physical Works

1. Council will establish or facilitate as necessary disposal facilities for septic tank wastes.	2.7.3.1.4	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Council will establish or facilitate as necessary disposal facilities for campervan waste.		
3. Council will provide sewer reticulation for the Wainui/Okitu community if required in accordance with Policy 5 above.		
Refer also solid waste implementation methods.		Semi-Liquid Special Waste- Implementation 1-4.

B. Regulatory

1. Where necessary because of soil or ground water conditions, Council will require that alternative specialised systems be installed.	2.7.3.1.3	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Council will develop appropriate guidelines for the control of non-reticulated domestic waste in new subdivisions and developments.	2.7.3.1.6	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
3. Council will have rules for discharges arising from non-reticulated waste disposal systems in unreticulated areas relating to new systems, existing systems, upgraded systems and discharge of septage to land.		Rules are located in Regional Plan for Discharges to Land and Water and the Transitional Regional Coastal Plan (Discharge of Waste: Septic Tanks).
4. Ensure that new and existing developments have a wastewater treatment system installed and suitably maintained to treat all wastewater on site.	17.2	Combined Regional Land & District Plan.

Policies	
5. It shall be demonstrated that all new allotments can be provided with a practical means of disposing of sewage, except where the allotment is for a network utility service, road, reserve or access purposes.	Combined Regional Land & District Plan 12.6.6.
6. (a) Every dwelling shall be connected to a reticulated water and sewerage system where the system is no more than 30 metres from the boundary of the land and no more than 60 metres from the nearest part of the building containing the fixture; otherwise. (b) A wastewater treatment system in accordance with the Gisborne Regional Discharges to Land and Water, Waste Management and Hazardous Substances Plan shall be installed to adequately service the activities likely to occur on the site.	Combined Regional Land & District Plan 17.14.5 Combined Plan.
C. Monitoring	
1. Council will monitor the effects of non-reticulated domestic liquid waste disposal on ground and surface water.	2.7.3.1.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Access to facilities will be limited to approved operators who are responsible for adequate and safe disposal practices, which will be monitored by council.	Refer Solid Waste Management Strategy – Semi-liquid Waste. Section 3.6.10 of this plan.
3. Based on information associated with discharge permits and the annual returns required, Council will establish a system for recording and comparing the volumes of liquid effluent to be discharged into the environment. Information relating to individual consents as well as cumulative totals for the region as a whole, individual districts or sectors can then be generated. Council will also undertake audit monitoring of the effects associated with the disposal of trade wastes to the sewer to ensure that the constituent territorial authorities continue to enforce compliance with trade waste bylaws.	5.3.4.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
4. Council will help facilitate surveys of individual wastewater systems in dwellings in non-reticulated areas, to assist with developing a strategy to ensure that minimum standards can be met and maintained.	Refer assessments of water and sanitary services.
Refer also solid waste implementation methods.	Semi Liquid Special Waste- Implementation 6.
D. Education and Advice and Advocacy	
1. Council will develop a programme aimed at informing and/or educating homeowners about how to manage their non-reticulated domestic waste disposal systems and options for new installations.	2.7.3.1.1 (part) (1-6) Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Council will facilitate in the dissemination of information on the disposal of camper van waste, and the maintenance and disposal of waste from septic tanks.	2.7.3.1.4 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
3. Council will promote land use practices that avoid, remedy or mitigate adverse effects on water quality, including: ▶ the application of fertiliser in a manner consistent with the Fertiliser Code of Practice (New Zealand Fertiliser Manufacturers Research Association, 1998);	2.6.3.1.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.

Policies	
<ul style="list-style-type: none"> ▶ the proper use of agrichemicals; ▶ land development and restoration of disturbed land to reduce diffuse source discharge of contaminants to water; ▶ stock management procedures to prevent excessive stock entry to waterbodies and their margins and reduce accelerated erosion from overgrazing; ▶ land management practices, including the discharge of contaminants to land that avoid or reduce contamination of groundwater aquifers; and ▶ land management practices that avoid the rendering of freshwater unsuitable for consumption by farm animals. 	
4. Council will encourage and promote better land management and land use practices to avoid diffuse source pollution of waterways, by a combination of education and non-statutory guidelines, service delivery and regulation. The Council will educate and advise landowners about how they can minimise run-off and leachate from agricultural waste, fertiliser, pesticides and herbicide applications	2.6.3.1.6 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
Refer also solid waste implementation methods.	Semi Liquid Special Waste- Implementation 7

2.8.4 Stormwater and Runoff

Policies	
1. Provide for the discharge of water-to-water that have minor or no adverse effects on the receiving water body without the need for a resource consent.	2.8.2.1 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. When considering applications to discharge water to water, RMA consent authorities should take into account: <ul style="list-style-type: none"> ▶ The sensitivity of the receiving environment, ▶ Classification of receiving waters pursuant to section 69 of the Resource Management Act 1991. ▶ The values of tangata whenua that may be affected, the physical processes acting on the area of discharge including temperature change, scouring, erosion, and flooding. 	2.8.2.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
3. Council will maintain community stormwater drains in accordance with Stormwater Asset Management Plans.	
Implementation	
A. Physical Works	
1. Maintain community stormwater drainage systems.	Refer assessments of water and sanitary services (2005).
B. Regulatory	
1. Council will research the issues and values of the Gisborne City urban rivers and streams which include the Turanganui River, its riparian margins, and tributaries including the Kopuawhakapata Creek and the Port Basin. This research will culminate in the development of a systems-based management plan for urban waterbodies.	3.4.5E Proposed Regional Coastal Environment Plan

Policies	
2. Council will identify areas where urban stormwater is having unacceptable effects on natural water, and develop systems necessary to mitigate or overcome these problems.	2.6.3.1.4 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances
3. Provide rules for Pumped Stormwater Drainage, and Point source discharge of stormwater, discharge of water from groundwater pump tests and temporary ground water level lowering activities; discharges from water supply reservoirs or pipelines and dye tracing.	Refer Discharges Plan and Transitional Regional Plan Part A, 5. A-6, A-8; also Transitional Regional Coastal Plan.
C. Monitoring	
D. Education and Advice and Advocacy	
1 Council will provide information, and where appropriate develop guidelines relating to acceptable standards of effluent treatment and the alternative systems and management practices that will enable these standards to be met.	2.6.3.1.7 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Promotion, publicity, facilitation, education and information circulation will be targeted to the community groups or individuals where attitude and behavioural change is required.	3.6.11 Promotion, Publicity, Education and Facilitation - Solid Waste Management Strategy.
3 Education programmes designed to change individual, group or community attitudes will be designed and implemented.	3.6.11 Promotion, Publicity, Education and Facilitation - Solid Waste Management Strategy.
Refer also solid waste implementation methods.	Promotion, Publicity, Education and Facilitation Implementation 1 & 5

2.8.5 Rural Effluent

(excludes sewage, but includes liquid discharge from animals or vegetation to land)

Policies	
1. All point-source discharges of contaminants to water shall avoid creating public health risks and /or significant adverse effects on the life supporting capacity of ecosystems and habitats including breeding sites and feeding grounds by: <ul style="list-style-type: none"> a) Not locating where locally important habitats feeding grounds; or ecosystems are likely to be adversely affected by the contaminant b) Not having physical properties which are likely to cause fish mortality, a failure of fish spawning or passage or significant changes in the abundance, distribution and composition of aquatic flora and fauna in the receiving environment. Such physical properties include temperature, pH, turbidity and suspended solids, nutrient content, heavy metals adsorbed into particulate matter and high Biochemical Oxygen Demand (B.O.D.). These properties may act alone or in combination with other discharge properties; unless it can be demonstrated with a high level of certainty that the effects of these contaminants on the environment will be minor.	2.6.2.1 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances

Policies	
<p>2. The discharge to land of liquid wastes which contain high levels of organic waste, contaminants that are likely to be toxic to organisms living in the receiving environment, or other wastes the effects of which are either uncertain or likely to be adverse to the receiving environment shall be avoided in or adjacent to the following locations:</p> <ul style="list-style-type: none"> a) areas aquifers recharge from b) the margins of lakes, rivers, streams or wetlands. c) areas where contaminants are likely to pass readily into water. 	<p>2.6.2.4 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>
<p>3. The adverse effects of the discharge of liquid wastes to land shall be avoided by:</p> <ul style="list-style-type: none"> ▶ Ensuring that the cumulative effects of discharges to land are fully assessed ▶ Requiring waste treatment facilities to contain adequate provisions to avoid the escape of untreated effluent during emergencies. ▶ Ensuring that waste which contains toxic contaminants is adequately contained to prevent leakage into soils, or waterbodies. ▶ Avoiding locating discharges in areas of high amenity or natural character. ▶ Avoiding locating waste disposal sites where they are prone to inundation or other natural hazard. ▶ Requiring after-care of waste disposal sites at the end of their useful lives to ensure that the sites are secure and do not have an adverse effect on the local amenity. 	<p>2.6.2.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>
<p>4. Effluent collection and treatment systems shall be appropriately designed, well maintained and managed.</p>	<p>2.6.2.8 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>
<p>5. When considering applications for resource consents for point-source discharges of liquid waste to land or water, Council may require as a condition of consent specific Discharge Management Plans. These Management Plans shall deal with any relevant matters listed in Section 3 Schedule B Section 7 of this Plan. Conditions of consent should require that holders of such consents shall annually review the Discharge Management Plan and provide an annual report to the Council identifying the matters specified in Section 3: Schedule C of this Plan that are relevant to the consent.</p>	<p>2.6.2.9 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.</p>

Implementation	
A. Physical Works	
B. Regulation	Transitional Regional Plan A-2, A-8, A-10, plus equivalent rules in Transitional Regional Coastal Plan and rule 2.6.3.2.3 of the Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
1. Refer to rules in other plans as described.	
2. Council will further develop standards for agricultural waste disposal. These standards will be used to define accepted practices for permitted activities and to guide discretionary decision making on consents. These standards will include consideration of factors such as soil type, waste constituent loadings, hydraulic loadings and climatic conditions. Input from Government Departments and other interested parties will be sought during development of these standards.	2.6.3.1.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
C. Monitoring	
1. Council will continue to investigate and monitor the performance and associated effects of the disposal of liquid waste from individual agricultural activities. It will also monitor the cumulative effects of agricultural waste disposal on a catchment basis.	2.6.3.1.12 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances
D. Education and Advice	
1. Council will define and guide on standards for agricultural waste disposal.	2.6.3.1.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Council will work with industry to ensure that sufficient facilities for cleaning of trucks are provided and that appropriate Codes related to truck wastes are actively promoted via the industry. This will include liaison with appropriate national agencies.	2.6.3.1.10 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances

2.8.6 Mobile-Stock Trucks, Campervans, Boats

Policies	
Refer to solid waste policies.	Semi Liquid Special Waste- Policies 1&2.
Implementation	
A. Physical Works	
1. Assess in conjunction with interested parties and ensure that appropriate facilities are provided for stock truck, camper van and boat waste.	Refer Solid Waste Management Strategy.

Policies		
2. Council will work with industry to ensure that sufficient facilities for cleaning of trucks are provided for, and that the appropriate codes for truck wastes are promoted via the industry.	2.6.3.1.10	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
B. Regulatory and Financial		
C. Monitoring		
D. Education, Advice and Advocacy		
1. Council will promote land use practices that avoid, remedy or mitigate adverse effects on water quality.	2.6.3.1.1	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.

2.8.7 Hazardous Liquid Wastes

Policies		
1. All hazardous wastes generated in the district must be stored at or disposed of in a facility or manner approved by the Consent Authority and receive treatment prior to disposal appropriate for the proposed method and timing of the disposal.	2.3.3.2	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. To encourage users of hazardous substances to use cleaner production methods where these alternatives exist.	2.3.3.3	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
3. Council will take into account and rely on relevant national legislation, national guidelines, industry codes of practice and other relevant documents wherever appropriate in regard to hazardous substances decision-making.	2.3.3.5	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
4. When considering a resource consent application for hazardous waste disposal facilities, consideration shall be given to the desirability of excluding hazardous wastes from the incoming waste stream and redirecting them so that alternative use or disposal is undertaken in a manner suitable for the substance.	2.3.3.6	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
Refer also to solid waste policies.	Hazardous Waste Policies 1-3	

Implementation

A. Physical Works		
1. Refer to solid waste implementation.	Hazardous Waste Implementation 4	
2. Council will investigate the feasibility of providing facilities for the treatment and disposal of hazardous wastes and will develop and operate a hazardous substances disposal approval system for disposal of all hazardous substances. This will encompass advice or systems to provide for the collection, drop off, treatment, disposal, exchange, temporary storage and redirection of hazardous substances.	2.3.4.12	Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.

Policies	
B. Regulatory	
1. Establish and maintain a register of codes of practice, national standards and guidelines for the storage, use transport and disposal of hazardous substances that meet the requirements of the relevant objectives, policies and rules of this plan.	2.3.4.2 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. The Council will carry out research and work with industry and communities to develop, implement and maintain a 'Hazardous Substances Site Register' (HSSR) using accurate information to identify and evaluate sites associated with the storage or use of hazardous substances. Pertinent information contained in this register will be incorporated into Project and Land Information Memoranda.	2.4.5.3 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
Refer also solid waste Implementation methods.	Hazardous Waste Implementation 1-3, 5-8 &10.
C. Monitoring	
1. Refer to solid waste implementation methods.	Hazardous Waste Implementation.
D. Education, Advice and Advocacy	
1. Council will, through the Hazardous Substances Technical Liaison Committee, adopt an inter-agency co-ordinated approach to the prevention, management and clean up of hazardous spills and provide technical assistance to emergency services dealing with hazardous spills.	2.3.4.6 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Council will provide assistance to appropriate agencies on matters related to the storage and disposal of hazardous substances that have been removed from use, i.e. asbestos wastes and PCBs. This assistance may include: The production and distribution of information packages. Liaison with other agencies regarding future handling and disposal methods.	2.3.4.13 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
3. Council will encourage the development of, and will develop and publicise, methods to render certain hazardous substances as harmless as possible before disposal.	2.3.4.14 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
D. Education, Advice and Advocacy	
4. Council will encourage industry groups to develop and implement voluntary take back schemes where vendors take back from users or retail vendors, any used, spent or otherwise unwanted quantities of that substance or it's container, including: <ul style="list-style-type: none"> ▶ Lubricating oils ▶ Timber treatment chemicals ▶ Pesticides ▶ Animal remedies ▶ Chlorinated solvents The Council will expand the list of substances included in voluntary take back schemes if noticeable adverse environmental effects arising from inappropriate disposal of other substances become evident.	2.3.4.11 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
Refer also solid waste Implementation methods.	Hazardous Waste Implementation 3 & 9.

2.8.8 Pollution Incidents - Intentional and Accidents

Policies	
1. To minimise the potential occurrence of hazardous substance spills and ensure that the adverse environmental effects associated with these events are avoided, remedied or mitigated.	2.3.3.1 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
2. Council adopts the 'polluter pays' principle for spillage and inappropriate management of hazardous waste.	Refer Solid Waste Management Strategy.
Refer also to Solid Waste policies.	Solid Waste Section – Hazardous Waste Policies 2 & 3.
Implementation	
A. Physical Works	
B. Regulatory and Financial	
1. Council, in consultation with relevant industries and organisations, will develop emergency preparedness plans, for activities for which it has responsibilities or obligations, including spill contingency plans, and in doing so will have regard to guidelines detailed in Part 3, Section 7 of the report "Our Waste: Our Responsibility", Centre for Advanced Engineering, University of Canterbury, 1992 or subsequent equivalent publication.	2.3.4.7 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
C. Monitoring	
1. Council may monitor industries and organisations for implementation of and compliance with appropriate national or government guidelines.	2.3.4.1 (1-14) Proposed Regional Plan for discharges to Land & Water).
Refer also solid waste Implementation methods.	Hazardous Waste implementation 1 & 3.
D. Education, Advice and Advocacy	
1. Council, in conjunction with relevant agencies and industry, will: Develop and implement education programmes targeting: Minimisation of the use of hazardous substances through the use of cleaner technology; and reuse /recycling techniques; and The safe storage, use, transportation, treatment and disposal of hazardous substances;	2.3.4.7 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances (varied wording).
2. Council will directly, or via any community based group with an interest in waste minimisation, raise public awareness through information and education programmes targeting: <ul style="list-style-type: none"> ▶ What types of household waste are hazardous, how to minimise the amount of this waste produced, and how it should be disposed of. ▶ The environmental effects associated with the inappropriate disposal of waste oil, where and how oil could be appropriately disposed of and the use of re-refined oil. ▶ Encourage the return of unwanted hazardous substances and their containers to manufacturers for reuse by others. 	2.3.4.5 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.

Policies	
3. Council will, through the Hazardous Substances Technical Liaison Committee, adopt an inter-agency co-ordinated approach to the prevention, management and clean up of hazardous spills and provide technical assistance to emergency services dealing with hazardous spills	2.3.4.6 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
4. Provide an advisory education service on minimising the potential for hazardous spills and what to do in the event of a spill.	2.3.4.7 Proposed Regional Plan for Discharges to Land and Water, Waste Management and Hazardous Substances.
Refer also solid waste Implementation methods.	Hazardous Waste Implementation 3.

2.9 MONITORING and REVIEW

The Council will monitor:

- ▶ The "state of the environment" - i.e. the quality/quantity of resources.
- ▶ Its performance as a resource manager (ie, the effectiveness of its policies and plans).
- ▶ Compliance with resource consents.

In addition, Section 67(1) of the RMA requires the Council to include in any Regional Plan, the procedures that will be used to monitor the effectiveness of the Plan in achieving the stated objectives and environmental results.

Procedures are required that will enable the Council to assess whether or not the objectives identified in this Plan are being achieved, and if not, why not. That is, procedures for monitoring and review must be capable of assessing whether the policies and methods of implementation specified in this Plan are appropriate over time, and/or whether they are not being implemented adequately.

Poverty Bay Coastal Monitoring

A programme to collect water samples from various sites in the Poverty Bay river mouth, adjacent beaches, tidal areas, and analyse these for various water quality parameters, and forward data is in operation. Monitoring sites are located by GPS to a minimum accuracy of ± 15 metres. Water Samples are collected monthly except for the months of November to March inclusive when samples are collected fortnightly.

Groundwater Monitoring

A programme to measure static water levels at groundwater bores in the Waipaoa basin, collect water samples, and analyse for various water quality parameters and forward data is in operation. The groundwater bores are monitored in runs, with each single run to be completed within one 24-hour period. Groundwater bores are monitored at 14-day intervals, with the cycle repeating at the conclusion of run 9, after 18 weeks.

Waipaoa/Gisborne Rivers Monitoring

A programme to measure discharges of rivers south and west of the Waipaoa River catchment, collect water samples, analyse for various water quality parameters and forward data is in operation. Flow gaugings or weir stage recordings to measure discharge are carried out at specific hydrological location on streams and rivers to obtain relevant data. During times of increased flow or during droughts sites may be gauged several times a week. Samples of suspended sediment are also collected, provided significant discoloration is present.

Miscellaneous Monitoring

Occasionally unauthorized discharges to water or land occur. There is a need to act quickly before any evidence dissipates, so as to assess the nature of contaminants involved and give advice on likely environmental impacts and mitigation measures.

Specific programmes to monitor the effect from current or historical activities on land or water may be required from time to time. This may involve establishing monitoring sites, pump test aquifers, water/soil sampling, profiling and provision of advice.