REVIEW OF KAPITI COAST DISTRICT COUNCIL'S ENVIRONMENTAL MANAGEMENT OF WATER SUPPLY AND SEWAGE TREATMENT

Office of the
PARLIAMENTARY COMMISSIONER FOR THE ENVIRONMENT
Te Kaitiaki Taiao a Te Whare Pãremata

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Review Team

Jennifer Boshier	BE (Chem)
Carol Lough	BA, Dip. Nat. Res.

Editor

Judith Broadwith

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PREFACE

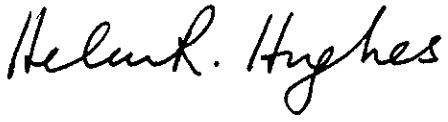
The Kapiti Coast District Council, like many other councils, was unprepared in 1991 for the introduction of the Resource Management Act, and the heightened environmental management performance standards now expected by communities.

My report on the effectiveness of environmental planning and management undertaken by the Council prior to the introduction of the Act identified that the Council would have to face the cost of growth in both financial and environmental terms. I applauded the Council's decision to embark on a strategic planning exercise to examine the infrastructure and implications of different growth scenarios.

The momentum towards strategic planning generated by the 1991 Strategic Planning exercise has been maintained. In particular, detailed information required for the water supply and the sewage treatment and disposal strategies has been obtained. The requirement to renew resource consents for water supply and disposal of treated sewage effluent has resulted in the Council providing detailed environmental assessment and strategic information to the regulatory agency.

Public consultation on a wide variety of issues has been sought by the Council. Many individuals and groups within the community have conscientiously responded and have put forward considered responses. However, some people have felt disenfranchised by the public consultation processes, particularly for planning purposes, and have wondered whether their recommendations have been considered and rejected, or simply ignored.

My evaluation of the Council's role as environmental manager relating to the water supply and sewage treatment and disposal issues is "much improved". However, I believe there are still initiatives that can be carried out to improve the effectiveness of public cooperation and consultation. The community can be involved in planning as they were in the strategic planning exercise. Owning environmental problems, by both the community and the Council, and cooperatively working to resolve them can ensure effective environmental management.



Helen R Hughes
Parliamentary Commissioner for the Environment

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1. INTRODUCTION

1.1 Parliamentary Commissioner for the Environment Report and Recommendations

The Parliamentary Commissioner for the Environment reviewed the environmental management performance of the Kapiti Coast District Council in 1991 when a number of environmental outcomes were examined against the requirements of the legislation then current. The Commissioner also took the opportunity to comment on the impact that the Resource Management Act 1991 (enacted on 1 October 1991) would have on the Council's role as environmental manager.

The investigation identified a number of steps which could be taken by the Kapiti Coast District Council to improve its performance as environmental manager viz:

- the placement of greater emphasis on strategic planning;
- the development of strong linkages between the strategic plan, annual plan and district plan;
- adjustments to certain resource management policies;
- the improvement of staff reporting;
- the clarification and strengthening of accountability procedures;
- the upgrading of staff resources in the planning and monitoring areas;
- improved public, agency and tangata whenua consultation.

The Council has accepted and implemented many of the recommendations made by the Commissioner for the Environment (Kapiti Coast District Council, 1993). The only recommendation to be rejected by the Council was one to refocus the Mission Statement (in the Annual Plan) to better reflect the scope and significance of its responsibilities. Council believes its Mission Statement and Key Goals do not need altering. Recommendations regarding staff reporting arrangements, accountability matters and the upgrading of staff resources in the planning and monitoring areas have been implemented. Implementation of recommendations in the areas of strategic planning, linkages between strategic and annual planning, and consultation are discussed in Sections 5.2 and 5.3.

1.2 Nature of the District

The Kapiti Coast area has, over the last eight years, been one of the fastest growing areas in New Zealand. However, this population growth has been difficult to predict accurately as growth rates have fluctuated. The 1970s was a time of growth in the district but these growth rates were not sustained in the 1980s (Duffill Watts & Tse, 1991). The changing rate of population growth has made it difficult for the Council to accurately predict infrastructure requirements.

A prediction for population growth for the next 20 to 30 years was estimated by the Urban Working Group, which was part of the Strategic Planning Project, to be 62,000 by the year 2021 (Kapiti Coast District Council, 1992a). The Urban Working Group drew up the following population growth scenarios for the District to the year 2021.

High Growth	65,000
Moderate Growth	55,000
Low Growth	45,000
No Growth	35,000

Further pressure on infrastructure was thought to arise from the District's increase in summer population. Additional research was carried out in 1991 (Synergy Applied Research, 1991) and the assumptions previously made about the peak summer population were shown to be incorrect. The peak population occurs for only a ten day period over Christmas and not for all the summer.

The population growth in the 1970s led to a substantial investment in infrastructure being made. Those loans are still being paid off at the same time as new investment in infrastructure is needed to cater for the present growth.

Much of the Council's present dilemma seems to have arisen from decisions made by previous Councils in the 1960s and 1970s resulting in an "over-zoning" of land for residential development. For example the Kotuku Park subdivision in Paraparaumu was zoned residential in 1966 by the then Hutt County Council. The residential zoning was continued in 1978 and 1989 by the then Kapiti Borough Council, with the concept plan being approved by that Council in 1989 (Kapiti Coast District Council, 1994b).

The Urban Working Group for the Strategic Planning Exercise requested information on land, that was zoned and undeveloped, for residential, commercial/retail and industrial purposes. The land zoned residential and undeveloped within the three main urban areas (in 1991) was:

Paraparaumu	510.4 ha
Waikanae	146.2 ha
Otaki	125.4 ha
Total	**782.0 ha**

The above figures did not include possible residential lots obtainable from in-fill development, subdivision of existing lots or rural/residential subdivision outside the three main urban areas.

There are very few mechanisms to control the rate of population growth in this situation. One is to "rezone" land from a residential use to a rural use. This mechanism is present in the Resource Management Act 1991 although as yet there is no case law on this particular provision.

Another mechanism is to impose a development levy on land developers, under the Resource Management Act 1991, to enable local authorities to avoid, remedy or mitigate any adverse effects on the environment (refer Section 2.4). The alternative to imposing development levies could be to compensate landowners for loss of development rights. Council considered it would be cheaper to upgrade public utility systems (at an estimated cost of $38 million) rather than compensate landowners or developers for loss of development rights which, in Waikanae alone, could cost more than $30 million (Kapiti Coast District Council, 1994c).

1.3 Involvement of Public in Decision Making

The Council, in its 1994/95 Annual Plan, stated that one of its goals is to *"identify and respond to community needs and consult with the community where appropriate"*. What is not clear from this goal is whether it is the Council or the community or both who can determine whether consultation on an issue is "appropriate".

Many members of the public understand the issues of sustainable environmental management facing the Council and the community e.g. "At the heart of the matter is whether district growth should have priority over the sustainable management of natural and physical resources to ensure the supply of effective and stable basic services for the existing population"[1].

There is a strong public concern about environmental issues and a willingness to become involved in environmental or ratepayer groups to make views known to the Council. The Strategic Planning Project carried out in 1990/1991 involved many residents, as well as Councillors and Council staff, in the different working groups. There was a sense of "ownership" by the community of the outcomes of that exercise.

However, a number of people and organisations expressed concern to the Commissioner for the Environment during this investigation about the Council's consultation processes for both planning matters and infrastructure matters. People felt their contribution to discussion of issues was not taken seriously and that Council presented plans at a stage where options could not be considered.[2] The plea was made to

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1 Letter from Waikanae District Progressive & Ratepayers Association, 11 February 1995

2 Meeting of PCE with representatives of residents groups, 19 October 1994

the Commissioner to provide guidelines to all councils on pro-active ways to encourage public input.[3]

Consultation over water supply and sewage treatment and disposal issues is outlined in the relevant sections in Chapter 3 and Chapter 4 of this report. Findings and recommendations regarding consultation are given in Chapter 5.

1.4 Environmental Management Issues

Major issues facing the Kapiti Coast District Council (which were identified in the Commissioner for the Environment's 1991 report) require the Council to make certain decisions in order to protect and enhance the quality of the environment. These include:

- provision of water supply, particularly during the summer period when supplies fail to match the peak daily demand in some areas;
- the provision of appropriate sewage treatment and disposal facilities which ensure that the environment can be protected and enhanced;
- the management of subdivision in the coastal zone where there are active erosion zones.

As a follow-up review, the Commissioner for the Environment decided to address the progress made in Council's provision of water supply and sewage treatment and disposal facilities and to check whether the recommendations made in 1991 on strategic planning issues had been addressed by Council. The environmental management issue of subdivision in the coastal environment is the subject of a review by the Commissioner for the Environment of local government, due to be carried out in late 1995.

1.5 Terms of Reference

The purpose of the investigation is:

1. to review the Kapiti Coast District Council's progress in developing and implementing strategies to assist in the environmental management of two of the key issues for the District. These two issues are water supply and sewage treatment and disposal;

2. to review the progress made on these two issues by the Kapiti Coast District Council in implementing the relevant

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[3] Letter to Parliamentary Commissioner for the Environment from Ms D Steele Sept 29, 1994

recommendations made by the Parliamentary Commissioner for the Environment in the 1991 report;

3. to provide remedial advice if appropriate.

1.6 Methodology

Evaluation of the progress made by the Kapiti Coast District Council on improving its environmental management of water supply and sewage treatment and disposal was assisted by the supply of relevant documents from:

- the Kapiti Coast District Council;
- the Wellington Regional Council;

and discussions with:

- staff of the Kapiti Coast District Council, the Wellington Regional Council and Hutt Valley Health, residents and ratepayer groups, and environmental groups on the Kapiti Coast.

This investigation was conducted under Section 16(1)(b) of the Environment Act 1986.

2. FRAMEWORK FOR INFRASTRUCTURE MANAGEMENT

Council decisions on infrastructure management are made within a framework of:

- the needs of the district;
- the effects on the environment;
- the ability of the community to pay; and,
- the past decision making of previous councils.

2.1 Needs of the District

The Kapiti Coast District Council's Strategic Planning exercise, carried out in 1990 and 1991, covered the following issues: transport infrastructure, water supply, wastewater and refuse disposal systems, civic amenities, landscape and recreation and the future form of development. Working groups for each topic were formed and included councillors, council officers and members of the public. Five reports were released for public comment in May 1992 with the community being given one month to forward written submissions. The Council adopted the reports in September 1992.

The Council's outcomes in relation to water supplies and wastewater disposal were:

1. *A commitment to ensure the on-going protection of water catchments including the avoidance of inappropriate development.*

2. *Provision within two years of increased reservoir storage in the Otaki water supply system (1994).*

3. *Measures to supplement the existing Hautere/Te Horo rural water supply system within five years (1997).*

4. *A long term objective for Te Horo Beach of providing full water reticulation.*

5. *Commitment to continue with water conservation campaigns for reducing water usage. These include encouraging supplies to be supplemented from groundwater or rainwater for other than domestic uses and consideration of universal metering.*

6. *Recognition of the wishes of the Paekakariki community not to be connected to the Paraparaumu/Waikanae water reticulation system subject to the matter being reviewed on a triennial basis.*

7. *Assessment within three years of options for augmenting the Paekakariki water supply (1995).*

8. *Arranging within three years for a further technical evaluation of groundwater, storage or water from rivers with a view to making a decision within five years on the future source and nature of water supply systems required to meet expected growth demands (1995 - 1997).*

9. *Expansion within at least five years of the Otaki sewage treatment and disposal facilities (1997).*

10. *Continued exploration of the viability of long term sewerage reticulation and disposal systems on an individual community or district-wide basis.*

11. *Acceptance of the principle of a long-term sewerage system for Paekakariki, the nature, timing and funding to be determined in consultation with the local community.*

The need for strategic planning for water supply and sewage treatment and disposal by the Council has been reinforced by the Wellington Regional Council. For example, the conditions on the resource consent issued for the Paraparaumu Sewage Treatment Plant includes a condition for the Council to produce a strategic plan for the disposal of the treated effluent by 1996. Strategic planning carried out by the Council since 1991 for water supply is discussed in Chapter 3 and for sewage treatment and disposal in Chapter 4.

2.2 District and Annual Plan

The process of preparing the new District Plan has included the preparation and dissemination of Discussion Papers on various issues. Some 400 submissions on the nine discussion papers were received by Council over the two-year period.

A District Plan developed under the Resource Management Act 1991 seeks to manage the effects of activities on the environment. The Kapiti Coast District Council decided to defer completion of the District Plan, which would replace the three District Schemes in force in the district, until the Strategic Plan was completed. The Council issued a draft District Plan in March 1995 (Kapiti Coast District Council, 1995) for discussion purposes. The public have one month to respond to the draft Plan as the Council intends to

formally notify the new District Plan when key studies on the roading network have been completed.

The draft District Plan discusses the significant resource management issues in the District and proposes the establishment of seven resource management zones with their own set of objectives, policies, rules and standards.

Subdivision design has a significant effect on the character of the district. Land zoned residential creates expectations by landowners that they can develop their land. This development, either now or in the future, puts pressure on Council's ability to service the development. Two significant issues that are addressed in the District Plan are the design and layout of subdivisions and the availability of Council services.

There was, in 1991, about 782 hectares of residential land in the district that had not been developed. The Council has indicated there is nothing it can do to limit the building of new dwellings on this land and that population growth within the urban areas (except Paekakariki) is inevitable.

The funding of off-site services is discussed in the section of the District Plan on Financial Contributions. Further work has been completed to determine what is a fair and reasonable cost (refer Section 2.4).

The Annual Plan process provides an avenue for public consultation. In the last two years there were 56 public submissions to the 1993/94 Annual Plan and 23 to the 1994/95 Annual Plan. For the 1993/94 Annual Plan, 5 submissions commented, in part, on issues of infrastructure development, while in the 1994/95 Annual Plan there were some 6 submissions about environmental management issues, with 3 of these also making comments on the proposed (and subsequently agreed) Council goal to consult with the public where appropriate. Other issues of interest to the community in the 1993/94 submissions were: funding of the Kapiti Coast Enterprise Trust, grant to Waikanae Croquet Club and grants for maintenance of Maori cemeteries. The 1994/95 submissions included comment on issues of financing and rating policy, a proposed increase in tip charges, and library management.

2.3 Effects on the Environment

In the Commissioner for the Environment's 1991 report, a process for environmental assessment was outlined. Consultation is an essential part of an Environmental Effects Statement (EES) and should be conducted with relevant public agencies as well as the public. Documentation of EES is required to accompany any resource consent applications.

2.4 Financial Considerations

The Kapiti Coast District Council is finalising a ten year financial plan for revenue, borrowing and expenditure in response to a recommendation from the Audit Office in September 1993. The Audit Office noted that the Kapiti Coast District Council is going against the trend for mid-sized and small councils by increasing levels of public debt. Debt servicing costs are rising with the situation worse for the Paraparaumu Ward where the debt-servicing burden, due to infrastructure development in the 1970s, is expected to reach 35% of total rates by 1995.

The Council indicated in June 1993 that work was about to start on devising a system of development levies on all future residential subdivisions to help fund water and sewerage systems. The legislative mandate to extend the nature of financial contributions from those previously obtained, is found in the Resource Management Act 1991. The work is to be completed in time to be included in the District Plan.

In the 1994/95 Annual Plan, the Council signalled that the broader system of development levies was being considered. Firstly, the Council prepared a network analysis of all its water and sewerage infrastructure assets to ascertain what upgrades would be required and to determine the costs of the upgrades. The development levies are expected to ensure that subdividers pay a fair share towards future upgrades of the infrastructure assets.

A Council working group studied the issue of development fees for more than a year. Legal advice to the working group was that long-term levies could not be made enforceable until the new District Plan becomes operative. The working group identified the equity issues as being particularly difficult to solve. In January 1995, Council sought specialist economic advice to complete the task. Although developers currently meet all the on-site development costs, they only pay a fraction of the off-site costs.

A discussion paper on Development Impact Fees (Kapiti Coast District Council, 1994c) was released in December 1994 for public comment by the end of February 1995. The Council intends to include provisions for a development impact levy in the new District Plan.

As the new District Plan will not become operative for some time, the Council is presently working on a proposal to put in place a form of financial contribution as permitted under the Local Government Act 1974. These contributions will be more restrictive than the proposed development impact levies because of the limited nature of the legislative mandate under the Local Government Act 1974 to obtain such contributions.

3. WATER SUPPLY ISSUES

3.1 Background

During the Commissioner for the Environment's investigation in 1991, the future provision of water to the district was one of the most important issues to the Council. The Commissioner recommended *that Council develop a strategy for meeting present and future urban water demand.*

The consumption of water in summer in parts of the Kapiti Coast district is more than twice its average winter use. Summer is the time of minimum river flows in the Waikanae River which therefore results in maximum stress on the river system. The issues investigated in this report are:

- whether a long-term strategy for the supply of water to the Paraparaumu/Raumati/Waikanae area, and the Otaki and Paekakariki areas has been advanced;
- whether water conservation strategies have reduced demand over the summer periods;
- the adequacy of monitoring the effectiveness of the water conservation strategies;
- whether the use of demand management techniques has been investigated; and,
- whether water leaks in the bulk water mains were identified as a significant source of water loss and have been remedied.

3.2 Responsibilities for Water Supply Allocation

The Wellington Regional Council has responsibilities for managing water resources, including water allocation, in the region. The Regional Council needs information on the amount of water available for abstraction, the environmental effects of water abstraction from different sources, and the uses made of any one source in order to make decisions on applications for resource consents. The Kapiti Coast District Council has to apply to the Wellington Regional Council for a resource consent to take water from a source for water supply purposes. The District Council has assumed responsibility for treatment of the water used for supply before reticulation to homes and businesses.

The Kapiti Coast District Council's application to renew abstraction of water from the Waikanae River was granted for two years in February 1990. This interim provision was to enable the Regional Council to obtain an accurate flow regime in the Waikanae River and an appropriate allocation of water to be made. The Regional Council, in March 1992, decided to commission a report, pursuant to s.92(2) of the Resource Management Act 1991, to assist in assessing resource consents for water abstraction from the Waikanae River.

In August 1992, the Wellington Regional Council issued a discussion paper on Kapiti Coast water resources (Wellington Regional Council, 1992). This study evaluated the water resources of the Kapiti Coast area and identified issues and policy options to be developed after public consultation.

The Kapiti Coast Area Water Management Report (Wellington Regional Council, 1993c) was released in August 1993 and was envisaged as the basis for a regional plan under the Resource Management Act 1991 for freshwater in the Kapiti Coast area. The Waikanae River low flow hydrology was reviewed and updated in this report. Previous estimates of the low flow were found to be too low and the average instantaneous minimum flow has been raised from 0.77 m^3/s to 0.95 m^3/s. These changes in the low flow estimates have had a significant impact in determining a " minimum" flow for the Waikanae River and for allocation policies. The report proposed that guidelines by which water can be allocated through the resource consent process be developed. The report indicated that urban development and population growth is placing an increasing demand on available water resources, particularly in the Paraparaumu/Waikanae area.

In March 1994, a report on the hydrology of the Kapiti Coast was produced (Wellington Regional Council, 1994a). This report collated, analysed and updated both groundwater and surface water hydrological data. A report on groundwater was completed in August 1994 by the Wellington Regional Council which gave estimated safe yields for aquifers in the Kapiti Coast (and Wainuiomata) catchments. The Area Water Management Report and the Hydrology Report both noted that groundwater resources include at least three distinct aquifers up to 50 metres under the Waikanae-Paraparaumu-Raumati beach area; very little is known about the Raumati-Paekakariki groundwater. Safe yield estimates suggest only the Otaki and Waitohu zones are near allocation limits.

In April 1995 the Wellington Regional Council released a draft (non-statutory) regional freshwater plan for the Kapiti Coast (Wellington Regional Council, 1995). This document supersedes the *"Kapiti Coast Area Water Management Report."* The Wellington Regional Council has included draft policies on water allocation in the draft Plan and limits on abstractions during low flows.

There are significant changes signalled in the draft policies, as outlined in Table 1.

Table 1: Comparison of Water Allocation from the Waikanae River

	Present Situation	*Draft Policy*
Maintenance river flow	250 l/sec	750 l/sec
Allocative quantity	287 l/sec	250 l/sec
Flow below critical levels		<120 l/sec

The Wellington Regional Council's policy is to control the quantity of water abstracted from a river when that river falls to critical levels. Control actions range from reducing the quantity that can be taken from the river through to requiring cessation of the consent to take water. The draft regional fresh water plan indicates that if the Waikanae River flow, for example, drops to below the maintenance level, the total amount that could be allocated would be 120 l/sec. As water supply is 92% of the present water allocation from the Waikanae River, these draft policy reductions in water allocations could have a significant impact on the future supply of water for the Paraparaumu/ Raumati and Waikanae communities.

3.3 Long-Term Strategies

3.3.1 Paraparaumu/ Waikanae

Kapiti Coast District Council, in 1990, initiated a preliminary study of water supply augmentation options for the Paraparaumu/Raumati and Waikanae areas.

The consultant's study of options (Duffill Watts & Tse, 1991) concluded that the Council could delay any significant capital expenditure by adopting a comprehensive water conservation campaign and educating consumers. If the total water consumption of the Paraparaumu/Raumati/Waikanae community is limited over the next 20 years (to 2011) to a maximum peak consumption of 23 million litres per day (ML/day), to conform to the existing water right conditions, the peak daily use/person will have to progressively reduce as population increases (assuming a high rate of growth of population). If the water conservation option was successful, it was expected to result in deferral of capital expenditure for a new source of supply for up to 20 years.

The Council decided, in 1991, to pursue a water conservation strategy as a means of meeting the demand for water. This is discussed in Section 3.4.

Two of the major assumptions of this 1991 options report have changed within the last year. One assumption was that the Waikanae River would always provide enough water for the Council to take 23ML/day. The subsequent work by Wellington Regional Council (refer Section 3.2) has shown that there is less water to be allocated from the Waikanae River than was assumed in 1991. The higher minimum flows to be maintained in the Waikanae River, as signalled in the draft Freshwater Regional Management Plan, mean that the water conservation strategy, on its own, will not be sufficient to meet the demand for water in the short- to medium-term future.

The assumption of a medium population growth scenario for the District has been found to be incorrect. The population has been growing faster than was predicted in 1990 and so the target of 20 years for establishing reduced water use has been brought forward to about 15 years. The 1993/94 Annual Plan indicated that an additional water source would be required for the Paraparaumu/Raumati and Waikanae areas by the year 2011 and that work on a strategy would need to commence during 1994 to consider alternatives and select the preferred option. (The need for a strategy to be in place by 1997 was recognised in the 1991 Strategic Plan.)

Water supply problems were experienced during February to April 1994, when rainfall was well below the summer average and the flow of the Waikanae River decreased to a level where the Council needed to apply increasingly severe water restrictions. This situation was the impetus for an allocation of staff and Councillor time to the water supply strategy issue including:

- an analysis of the water conservation programmes to date and of population projections in April 1994;
- making provision for a $1.8 million loan in the 1994/95 budget to enable investigation and implementation of groundwater sources to proceed quickly;
- holding a council workshop on bulk water issues in June 1994.

The options for long-term water supply are:

- Conservation. The target is to reduce peak demand from 1000 l/p/d to 650 l/p/d by year 2011;
- Supply from the Otaki River either bringing water to the water treatment plant or diverting water into the headwaters of the Waikanae River (4-5 years to implement);
- Damming Waikanae River tributaries. Suitable dam sites would need to be identified;

- Out of Stream reservoirs - similar to the Te Marua reservoirs. The quantity to be impounded depends on what the community is prepared to pay to avoid restrictions in water supply and the severity of any restrictions (timing 5 years at least);

- Groundwater. The Wellington Regional Council's Groundwater Management Report has indicated a potential that could be tapped and a bore has been drilled in Waikanae. If this proves to have potential for potable water, it could provide a supplementary water supply in the medium term.

The investigations required to identify the options for future sources of water were outlined in the 1994/95 Annual Plan, together with an objective of completing the selection of a strategy for bulk water supply for Paraparaumu, Raumati and Waikanae by 30 June 1995. The options also included: investigation of the advantages and disadvantages of metering for the district urban areas, investigating the possibility of linking into the Wellington Regional Council bulk water supply and investigation of the cost of using the Otaki River.

In May 1995, the Council decided that a feasibility study on the recommended option of building a water storage dam on a small stream behind Waikanae should proceed. The study is expected to take six months.

A report on the feasibility of using groundwater sources for medium-term water supply has been presented to the Major Projects Committee. The report's conclusion is that there are two aquifer zones, one located in the coastal area and one further inland. The advantages and disadvantages, both technical and economic, of using either of these aquifer zones to obtain potable water are presently being investigated.

The two options of constructing a water storage dam to replace the water that was formerly available from the Waikanae River and the investigation of groundwater to augment the water supply have been considered by the Council as separate matters.

A long-term strategy for water supply, based on the information collected over the past year, is to be presented to the Council later this year so that decisions on how to provide for capital expenditure for water supply over the next 50 years can be placed in context.

Public consultation on the water supply options takes place in various ways on an "as and when required" basis. The public have had opportunity through the Annual Plan process to comment on the options being investigated. Two submissions to the 1994/95 Annual Plan addressed water supply options, one submission advocating that

the decision to start constructing bores to supplement the water supply should not go ahead until full public consultation on all the options has been held.

The report on reservoir storage assessment was made available to the public in February 1995 through an "open house" at the Waikanae Service Centre, an advertisement in a local newspaper and by staff visiting all affected landowners. The wider community was invited, by means of an advertisement in a local newspaper, to respond to the report. Council staff received about 12 responses including one which urged Council to plan for the 30 to 50 year time-frame. The Major Projects Committee had decided to recommend one option rather than seek community input on which option to proceed with, on the basis that the preferred option had significant environmental, social and cost advantages.

3.3.2 Otaki

Water for Otaki is abstracted from the Waitohu Stream and treated to remove the colour and river sediment. This plant services the plateau area while the rest of the town uses groundwater from two large bores. The groundwater is chlorinated before reticulation through the town. The Wellington Regional Council has indicated that the Waitohu Stream is almost fully allocated and draft policies have been included in the draft Fresh Water Management Plan to set maintenance flows and allocations.

There are issues to be resolved both with the treatment plant and the groundwater supply. The cost of chemical treatment of the Waitohu Stream water is high and the discharge of sludge from the clarifiers at the treatment plant into the river has to cease. The Council is studying alternative sludge handling options ranging from piping the material 3 km to the nearest sewer main to a full mechanical drying process. The plant had a $700,000 upgrade in 1984 and the loans will not be repaid for another 20 years. The use of the bores means an increase in pump costs if the bores are to supply the plateau area of Otaki as well as the main Otaki township. The Council has made provision for the purchase of standby generators which would be needed if the power supply to the pumps failed. (This provision of generators is an alternative to the provision of storage reservoirs, as outlined in the Strategic Plan.)

In January 1994 a draft strategy to determine the most cost-effective option for the Otaki water supply for the next 20 years was supplied to Council staff by consultants. Environmental studies had not been completed on the options at that stage and more technical work was needed. The completed draft strategy was discussed with the Community Board, the Major Projects Committee and the Council in February 1995. The strategy recommends that further work on the options is required before decisions are made. The Council staff have

met with iwi to discuss the draft strategy and have written to all residents who live adjacent to the Waitohu Stream informing them of progress.

3.3.3 Paekakariki

The present water source is Smith's Creek which is unable to meet all unrestricted demand for water. The community has permanent water use restrictions resulting in the lowest per capita water consumption (500 l/p/d) in the district. The quality of the supply was vulnerable to microbiological contamination. However, the installation of filtration equipment to capture giardia and cryptosporidium cysts in 1992 has improved the supply quality. Some investigation work has been carried out on options to augment the water supply, although no objectives for this have been set in Annual Plans over recent years. The network analysis of water infrastructure assets (refer Section 2.4) has shown that the water supply system at Raumati has inadequate pressure to supply Paekakariki. The connection is not economically feasible.

3.4 Water Conservation

Water use measured in mid-winter using a rolling 7-day average for the lowest 7-day period in winter (Table 2) shows a steady increase that reflects the increase in population in the area.

Table 2: Winter Water Use for the Kapiti Coast District Council

Year	7-day water use m^3
1983	39,470
1989	60,010
1994	67,680

The Council decided in 1991 that water conservation was the best option for maintaining future water supply for the Paraparaumu/ Raumati and Waikanae areas. Water conservation strategies have been implemented each year since 1991. An analysis of the data and an evaluation of the strategies was first carried out in 1993 and extended to include the 1993/94 summer period.

The February to April 1994 dry spell highlighted the need for an emergency management plan to supply water for public health purposes during times of water shortage. The Medical Officer of Health, suggested to the Council that a plan was needed. The Council developed an emergency plan which was then discussed, in March 1994, with Civil Defence, the Wellington Regional Council, the Ministry of Health and District Council staff. The key issues for water supply in an emergency are loss of pressure in the system and the time it takes to restore the supply. The plan contains various "trigger" levels

which set in place actions to further restrict water use for the protection of public health during a water supply emergency. This plan was used during the 1994 dry period.

3.4.1 Paraparaumu/ Waikanae

The Council adopted the following targets for water use reduction for the Paraparaumu/Raumati/Waikanae areas (Duffill Watts & Tse, 1991). The peak daily consumption target is a reduction from 903 litres/person/day (l/p/d) in 1991 to 658 l/p/d in 2011.

Daily consumption figures for November 1991 to February 1992 indicated a water use in Paraparaumu of about 600 to 700 l/p while the Waikanae water use was about 1000 l/p. The summer rainfall in 1991/1992 was above average (average based on rainfalls between 1983 and 1994). The Council was unable to determine the effectiveness of this initial conservation campaign because of the adequate rainfall.

For the 1992/1993 summer, the Council set targets to reduce peak daily water use to less than 885 l/p/d in each supply area. The peak daily consumption was (Annual Report, 1992/93) Otaki 895; Waikanae 1077; Paraparaumu/Raumati 700; Paekakariki 506 (Paekakariki has permanent water restrictions). Rainfall through this summer period was low (78% of the average for the preceding 10 years).

For the 1993/94 summer, the Council's target for peak daily demand was 872 l/p/d. Water use in February 1994 was higher than the target water use. For example, on 6 February the peak demand in Waikanae was 1150 l/p/d; Paraparaumu registered a peak demand of 752 l/p/d on 13 February and Otaki had a peak water use of 1127 l/p/d on 14 February. A period of no rainfall from mid-February through to May 1994 significantly reduced the Waikanae River flow and caused the Council to impose stringent water restrictions for 63 days. These restrictions were put in place in advance of the Waikanae River flows reaching critical levels when abstraction may have had to be curtailed. Since mid-February 1994 the community response to the need for conservation saw water use fall to 15 ML/day which is well below the 23 ML/day allowed under the water right.

A strategy for water conservation for the 1994/95 summer included: an advertising campaign asking the public to restrict the use of hoses for gardens and for cleaning their cars and boats; a brochure on tips to save water; promotion of the use of rainwater tanks. The target peak daily demand for water use has been set as <860 l/p/d.

The water conservation campaigns were assessed by the National Institute for Water and Atmosphere (NIWA) in 1993 and the 1993/94 data were included in a further analysis (NIWA, 1994). This report

concluded that the rate of consumption (of water) per person had significantly dropped up to 1993 since which time the water use has stayed relatively constant.

Summer water consumption for Paraparaumu and Raumati has decreased some 35% over the 1990 to 1993 period while the Waikanae summer consumption has decreased some 27% over the 1988 to 1993 period.

3.5 Leak Detection

At the time of the Commissioner's initial investigation, leak detection measures had not been considered as contributing to the high water consumption in the district.

A leak detection and repair programme which began as a pilot project in Waikanae in March 1992 was extended during 1993 to cover the remainder of the district. The district was divided into 14 zones and all zones and sub-zones were metered for night-time flow. The initial results demonstrated high flows in Paekakariki, Otaki, Waikanae and 3 out of 8 zones in Paraparaumu. Although analysis of the results of the repairs was complicated, test night flows decreased from 9% to 22% in different areas of the district. The overall saving in water retained by the reticulation is difficult to estimate.

3.6 Demand Management

Three years ago the Council considered the metering of all residences but a capital cost of $3 million to install meters, together with no firm predictions of the expected reduction in water use that could result, influenced Council's decision not to proceed.

In November 1994, Council commissioned consultants to investigate the advantages and disadvantages of metering for the district's urban areas. This study was completed in early 1995. The reason for metering would be to assist in reducing the summer peak water use. The extent to which water demand in the district can be reduced by metering is unknown. The Council considered the report and decided that the cost of installing meters did not compare favourably with the marginal cost of increasing the dam size for higher water use without metering. However, this analysis did not include considerations of conservation measures the Council may need to put in place.

A proposed water supply by-law to replace the existing by-law was developed in December 1994. The purpose of the by-law is, inter alia, to detail the responsibilities of both the Council and the consumers with respect to the public water supply and to provide a mechanism for demand management. There are some drafting issues that need resolution before Council can confirm the by-law.

The only demand management mechanism outlined in the proposed by-law for ordinary water supply is garden watering restrictions to control high seasonal (or other) demands.

Arising from a report on the leak detection programme, a policy of metering all extraordinary users was recommended for consideration in March 1994. Both the existing and the proposed water supply by-law appear to intend that all extraordinary water supplies shall be metered. However, this issue is yet to be considered by the Council's Policy Committee.

3.7 Resource Consents

3.7.1 Water Supply from Waikanae River

An application to renew the consent to take water from the Waikanae River for water supply purposes was made by the Council in December 1991 and notified by the Wellington Regional Council in January 1992. In March 1992, the Wellington Regional Council resolved to commission a draft allocation plan for the Waikanae River before hearing the application. That was completed in September 1993 (refer to Section 2.2). Wellington Regional Council also requested further information from the Council including the environmental effects of the existing abstractions and the water conservation programme. This further information has taken some time to assemble and the revised resource consent application has yet to be lodged. The delay has been due to a number of factors including the need to evaluate the Regional Council information of residual flows in the Waikanae River, the expanded programme of work on water supply options undertaken by the Council after the dry spell in 1994 and the lack of staff resources within the Council to progress the several infrastructure issues and meet the requirements of the Wellington Regional Council for information for resource consent applications.

3.7.2 Water Supply from Waitohu Stream

An application was made to the Wellington Regional Council in March 1993 to renew the consent to take water from the Waitohu Stream. The application was received by the Wellington Regional Council in July 1993 but the Regional Council was awaiting further information, pursuant to s.92(2) of the Management Act 1991, before proceeding with the consent process.

In December 1993 the Wellington Regional Council advised that consents were required for the discharge of sludge from the clarifiers and filters at the plant to the Waitohu Stream. Applications for consents associated with the water treatment plant have been lodged with the Wellington Regional Council. The Regional Council has requested some further information before the applications are notified.

4. SEWAGE TREATMENT AND DISPOSAL ISSUES

4.1 Background

During the Commissioner for the Environment's investigation in 1991, it was confirmed that effluent from the Paraparaumu Sewage Treatment Plant and runoff from the Waikanae Sewage Treatment Plant contained high levels of coliform bacteria and nutrients. The Paraparaumu plant had been identified as seriously overloaded. The Waikanae plant had sufficient treatment capacity but the land disposal area was inadequate for treatment of all the effluent.

The Commissioner for the Environment recommended that the Council develop an overall strategy for sewage treatment and disposal in the District by exploring options for disposal of treated effluent as well as appropriate treatment options and link this strategy into the forward planning project. The Commissioner also recommended that the Council, in consultation with the Wellington Regional Council, develop programmes to monitor the effects on the environment of effluent from wastewater treatment plants.

A further recommendation was that the Council, in consultation with the Wellington Area Health Board, establish an adequate programme to monitor the health effects of effluent from wastewater treatment plants and take appropriate action to ensure that risks to public health are minimised.

This chapter examines the Kapiti Coast District Council's progress in carrying out these recommendations.

4.2 Framework for the Kapiti Coast District Council Decision Making

Any future decisions by the Council on sewage disposal in the coastal marine area must be consistent with the New Zealand Coastal Policy Statement and the Wellington Regional Coastal Plan.

The preservation of the natural character of the coastal environment is one of the outcomes of the New Zealand Coastal Policy Statement. The Wellington Regional Coastal Plan must be consistent with the New Zealand Coastal Policy Statement.

The Proposed Wellington Regional Coastal Plan was released for public submissions in June 1994. Until the latter is finalised, the transitional regional coastal plan is operative. This includes important provisions such as coastal water quality classification.

One of the proposed regional coastal plan environmental policies for discharges to land and water covers the discharge of human sewage into water. An explanation to the policy is given as follows: "A discharge of sewage to water or land in the coastal marine area would better meet the purpose of the Act than a land discharge if the adverse effects of the discharge to water were significantly less than those of a land discharge. Adverse effects would include effects on mauri and the values of both the tangata whenua and the community at large."

Any discharge of human sewage onto land or into water in the coastal marine area or inland of this area would also require resource consents under the Resource Management Act 1991.

Future Council sewage disposal decisions must also be consistent with the Wellington Regional Policy Statement and the district plan. Any regional plans on discharges to land, air, freshwater and soils may also be relevant.

4.3 Present Plant and Capacity

At the present time there are three sewage treatment plants - located at Paraparaumu, Waikanae and Otaki. The other communities in the Kapiti District are served by on-site wastewater disposal systems.

A summary of present and proposed sewage treatment and disposal methods is given in Table 3.

Paraparaumu Sewage Treatment Plant

The upgraded Paraparaumu Sewage Treatment Plant was opened in February 1995. Treatment capacity has been expanded from 12,500 to 25,000 people and effluent quality has improved. As part of this upgrade, ultra violet (UV) treatment is used to disinfect the aerobically-treated effluent. The discharge consent requirements are 500 MPN (most probable number) faecal coliform/100mls. Currently the plant achieves an effluent standard of about 10 to 50 MPN faecal coliform/100mls. The plant discharge then flows across grass plots and through a wetland before entering the Mazengarb Drain. But by the time the effluent reaches the Drain, it is contaminated back up to 2000 to 4000 MPN faecal coliform/100mls. Discharge directly to the Drain is being considered. Flow balancing and nutrient removal have also been significant improvements introduced as part of the upgrade.

However, the present system of sludge ponds to store sludge is reaching the limit of its capacity, given that it takes 2-4 years for

the sludge to dry out sufficiently to be handled by earthmoving equipment. It is then stockpiled on site.

Waikanae Sewage Treatment Plant

The Plant provides two oxidation ponds for treatment of sewage and stormwater, and land for the disposal of treated effluent from the ponds by spray irrigation. The area available for use was reduced by 40% compared with the design area because the bordering area of land was unsuitable. It sloped too much and towards the neighbouring property so there could be runoff onto that property. A proposal to purchase land to extend the disposal area was defeated by a loan poll in 1990.

The raw sewage is directed first to Pond 1. About 1200 m^3/day of wastewater goes to the spray irrigation area and what is not evaporated or infiltrates into the ground, goes into Pond 2 from where it is discharged into a waterway known as the Black Drain (more than 700 m^3/day). The Drain runs into the Ngarara Stream which runs along the side of an environmentally sensitive natural wetland. This is the Kawakahia wetland. Recently completed mass balances on pond inflows and outflows have shown that leakage occurs between the two ponds. The outflow from Pond 2 is frequently contaminated with diluted effluent.

Baffles were installed in both oxidation ponds and were working satisfactorily by the end of 1993. The intention was to create maturation areas to improve effluent quality to that which has historically been discharged. The baffles were designed so that they could be removed at a later stage depending on the long-term disposal option chosen.

The problem has been that although the baffles are working, the faecal coliform count of the incoming sewage is much higher than the design figure. This results in a higher coliform count at the point of discharge. Monitoring by the Council of the adjacent streams has indicated that these streams were also contaminated from other sources in the catchment.

Proposed improvements to the Waikanae Sewage Treatment Plant are described in Section 4.5.

Otaki Sewage Treatment Plant

The Otaki Sewage Treatment Plant receives domestic wastewater from the township and its associated commercial and industrial activities and pre-treated wastewater from the Richmond Otaki meat processing plant. Domestic wastewater is pre-treated in an

aerated lagoon at the plant before it combines with the abattoir wastewater in two oxidation ponds. Final effluent disposal is onto a 10.8 hectare block of land to the west of the Otaki Sewage Treatment Plant.

A study of the upgrade requirements at Otaki has been completed. The findings of the study were that the oxidation ponds were consistently overloaded and producing a poor quality effluent. Similarly the disposal area was not functioning as it should be, with very low infiltration rates.

The proposed improvements are outlined in Section 4.5.

4.4 Monitoring of Present Operations

Paraparaumu Sewage Treatment Plant

The Council is required by the resource consent to conduct summer surveys of the Mazengarb Drain and the Waikanae Estuary to monitor the impacts of the effluent discharge from the Paraparaumu Sewage Treatment Plant on the quality and biology of these receiving waters.

The key points arising from the March 1995 monitoring survey of the Mazengarb Drain and the Waikanae River (Kingett Mitchell, 1995) included:

- The Paraparaumu Sewage Treatment Plant discharge does not contribute to the poor water clarity of the Mazengarb Drain and tributaries.

- Concentrations of dissolved oxygen are naturally low in the Mazengarb Drain and are not influenced by the Paraparaumu Sewage Treatment Plant discharge.

- Concentrations of ammonia-nitrogen and dissolved reactive phosphorus are significantly lower in the Mazengarb Drain as a result of the 1994 upgrading of the Paraparaumu Sewage Treatment Plant.

- The discharge from the Mazengarb Drain contributes nitrogen and phosphorus to the Waikanae River. The discharge increases the concentration of dissolved inorganic nitrogen in the lower river waters.

- Faecal coliform counts in the drain have been significantly reduced, however enterococci numbers are similar to levels previously recorded.

- The microbiological quality in the upper (uninfluenced by the Paraparaumu Sewage Treatment Plant discharge) and lower Waikanae River is poor. Faecal coliform and enterococci numbers both exceed the proposed guidelines for recreational water quality. This indicates there is still high contamination from other sources in the Waikanae River.

Water quality within the Tikotu Stream and at the point of outflow onto Paraparaumu Beach had been affected by the effluent discharge from the Paraparaumu Sewage Treatment Plant. Because of concerns about the water quality on the Beach, the Council blocked off the flow into the Tikotu Stream as it was largely treated sewage effluent. The quality of the stream deteriorated but the flows were less. It appears the Tikotu Stream is being polluted from many sources.

The Council had agreed with Ministry of Health to participate in the 1994/95 national bathing beach survey by including Paraparaumu Beach. This study will examine the relationship between gastro-intestinal illnesses and swimming. Suitable indicators for monitoring will be assessed, then the current guidelines for bathing suitability will be re-evaluated.

There is improved monitoring of the Paraparaumu Sewage Treatment Plant, compared to 1991, now that the plant has been upgraded and is more complex to operate.

Waikanae Sewage Treatment Plant

A monitoring programme was set up to provide information for the 1995 renewal of the resource consent for the spray irrigation area.

The performance of the baffles on the ponds is monitored weekly. Dissolved oxygen and pH levels are taken daily and there is monitoring of the Waimeha Stream (now including measures of the bacterial group enterococci, in line with the 1992 Department of Health guidelines for bathing suitability).

There have been two major setbacks in compiling information for the resource consent renewal. The first was the discovery that the back-up pump was being used in the spray irrigation area which meant that the flow balance analysis was wrong. The pump has been changed and the flow balance for the ponds reassessed.

The second issue has been the performance of the baffles. Information on the effectiveness of the baffles was delayed by the need to modify the baffles on two occasions to stop recirculation between the areas.

The first oxidation pond is overloaded and the outflow from the second pond is frequently contaminated with diluted effluent. Surface matting from accumulation of algae can limit the ability of the land to absorb the spray-irrigated effluent. However, the spray irrigation area is operated in such a manner as to avoid the high application rates which lead to surface matting. Ponding of effluent occurs in low-lying areas where fine sediment and sludge have accumulated. These conditions lead to increased runoff to the oxidation ponds.

Otaki Sewage Treatment Plant

Council staff take monthly grab samples from the two ponds and samples the bores which monitor the groundwater. The flow to the land infiltration plots is recorded on a daily basis and the dissolved oxygen is measured on a weekly basis.

As mentioned in Section 4.3, a 1994 study found that the oxidation ponds were overloaded and there was insufficient infiltration on the disposal area.

4.5 Future Options for Sewage Treatment and Disposal

District-wide

Kapiti Coast District Council has stated in their 1994-95 Annual Plan that it is intended that the long-term sewage effluent strategy for the district and detailed site investigations for the preferred options will be completed by 30 June 1995. Current indications are that this strategy is expected to be completed in July 1995.

Paraparaumu and Waikanae

An Options Report on Wastewater Treatment and Disposal Options for Paraparaumu and Waikanae was released by the Council in 1992.

Because of the local body elections in 1992 and the large number of submissions objecting to a proposal to use land at Peka Peka for sewage disposal, the Council deferred a decision on a long-term strategy but approved short-term upgrades for both the Paraparaumu and Waikanae plants.

Many of the submissions stated that not all of the effluent disposal options had been considered. For example, there was no consideration of other land areas, minimal consideration of ocean outfalls and waterway disposal, as it was considered by the Council that these options were not likely to be acceptable.

There were also parochial issues in that residents north of Waikanae River did not want effluent brought over the river. This extends to concerns about cross-subsidisation, with Paraparaumu having higher debt and rate levels than Waikanae.

Work done since then indicates there are very few areas of land suitable for effluent disposal in the district. It is likely that any land disposal site would have to be further north than Peka Peka because of recent subdivisional activity and a more detailed assessment of soil suitability. Soil types within the district (other than sand dunes) are generally peat and have a very high water table with flooding in winter at times (particularly around Peka Peka).

In February 1993, the Wellington Regional Council responded to the Council's applications for wastewater discharge permits for Paraparaumu, Waikanae and Otaki.[1] The Regional Council recommended that a strategy for addressing both the short- and long-term treatment and disposal for all of the district's wastewater should be pursued. The need to co-ordinate with the Water Allocation Plan was emphasised.

The Kapiti Coast District Council set up the Wastewater Consultation Group (the successor to the constituted Wastewater Consultative Committee) comprising representatives of the District Council, the Wellington Regional Council, Hutt Valley Health Public Health Service, local interest groups and all parties who made submissions on consents. This informal group aims to discuss the environmental requirements of the community. At its December 1993 meeting the group agreed to focus on an estimate of costs for wastewater disposal rather than on outcomes (which was preferred by Council staff). The group also wanted to include consideration of water supply as this was seen as having significant bearing on wastewater disposal.

A draft *Review of Options and Costs for Sewage Treatment and Disposal* was completed by the Council in March 1994. This was reported over the following months to a variety of fora including the three iwi in the district at an Iwi Consultation Group Meeting. From these fora, further ideas were developed with the intention of completing a report by the end of 1994. The report has not been completed because of the effort being put into upgrading the Paraparaumu Sewage Treatment Plant and the limited staff resources available. A draft environmental scoping report, together with the revised options report, is expected to be included in the long-term strategy for the District, due for completion in July 1995.

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1 3 February 1993 letter from Wellington Regional Council to Kapiti Coast District Council

Paraparaumu Sewage Treatment Plant

A resource consent was given, on 30 November 1993, for the discharge of tertiary-treated domestic sewage from the Paraparaumu Sewage Treatment Plant until 1 March 2001. One of the conditions of the resource consent was that the Council should enter into a programme of investigation and consultation that will lead to the construction of a suitable long-term sewage effluent disposal option. The Council is required to make a decision on a preferred option before 31 March 1996. The construction and commissioning of all new works must be carried out by March 2001 at the latest.

A variety of long-term options for Paraparaumu sewage disposal have been researched. There has been some preliminary public consultation and a report is expected in July 1995, as part of the long-term strategy for the District.

The upgraded Paraparaumu Sewage Treatment Plant currently serves a population of 19,000. The anticipated population in 2003 is 25,000. Future upgrades can be done incrementally with the next being a clarifier in about 2004. By increasing flow balance capacity, and running the treatment process at capacity all day, the plant can handle 50,000 person equivalents. This would need extensions to the UV treatment and yet another clarifier.

The Paraparaumu Sewage Treatment Plant is the only plant in the district requiring sludge disposal. The disposing of dewatered sludge in the landfill is very expensive to meet Ministry of Health and Resource Management Act 1991 requirements, given the landfill does not have leachate control systems and the sludge is not stabilised.

Work is being done on identifying suitable farmland for disposal of the dewatered sludge. This is successfully done in New Plymouth.

The Council's 1994-95 Annual Plan states that the Council intends completing and commissioning the installation of sludge handling at Paraparaumu Sewage Treatment Plant by 30 June 1995. Once tests on the characterisation of the sludge have been completed, sludge management plans are expected to be finalised.

Waikanae Sewage Treatment Plant

All the Waikanae Sewage Treatment Plant resource consents expire in September 1995, except for the spray irrigation area. The Council and the Wellington Regional Council have agreed to

consider all the consents for the Waikanae Sewage Treatment Plant together, that is:

- consent to discharge treated effluent onto ground
- consent to discharge effluent to groundwater from the spray irrigation and ponds
- consent to discharge treated effluent to the Black Drain
- consent to discharge contaminants to the air, being aerosols and gases.

Minor upgrading of the spray irrigation area is currently under way. This involves replacing the electrical supply and pumps, removing the pine trees in the spray area, putting in a ring main, filling the ponded area and extending the irrigation area to the extremities of the useable land.

These resource consents will be concerned with the present sewage treatment and disposal system. A long-term strategy still needs to be developed.

Long-term options for upgrading the Waikanae Sewage Treatment Plant have been developed over the last three years. This plant poses the most difficult problem because high levels of algae in the effluent restrict some further treatment options. Treatment options include:

- divert part of Waikanae flow to Paraparaumu Sewage Treatment Plant and limit Waikanae Sewage Treatment Plant to existing irrigation area
- disinfection using UV with removal of algae by duckweed wetlands or rock filters
- Memtec with pre-treatment and sludge disposal
- wetland treatment
- modified activated sludge process and decommission ponds
- plant similar to Paraparaumu Sewage Treatment Plant and decommission ponds.

A range of treatment options is possible across the district depending on the ultimate disposal options chosen by the community. The sewage disposal options are waterway disposal, land disposal, ocean outfall, or reuse of treated effluent.

Otaki Sewage Treatment Plant

A Review of the Options for Upgrading of the Otaki Sewage Treatment Plant was released in May 1994. It is proposed that the upgrading will design for a population in 2011 of 8,317. A two-stage modification of the sewage treatment plant and conversion of

the land disposal area to an infiltration wetland are proposed. The options report recommended that an area of 8 hectares to the west of the Otaki Sewage Treatment Plant owned by the Council should be reserved for future land disposal as required.

Community consultation has involved all interest groups and neighbours being contacted prior to consents being lodged.

In its completed form, it is anticipated that the proposed upgrading plan should remedy most of the problems at the Otaki Sewage Treatment Plant. However, there is public concern about the need to spend all this money and the need to charge the meat processing plant for the upgrade. Trade waste bylaws are currently being drafted and these will determine the quality of effluent the abattoir can send to the plant.

Paekakariki Sewage Treatment Plant

At present the residents of Paekakariki have stated that they wish to retain their present system of on-site wastewater disposal using septic tanks. The community is concerned that upgrading to a reticulated sewage system would be expensive for ratepayers and lead to further development whereby the character of their village would be lost. However, it may be necessary in the future to upgrade to a municipal system for public health and/or increased capacity reasons. The character of the community could be maintained through provisions in the District Plan. Alternatively, planning controls could ensure that sections are of sufficient size for on-site effluent disposal. The Council could reduce the risk of public health problems by ensuring septic tanks are adequately maintained.

Te Horo/Peka Peka

These are rural communities which do not have a need for municipal sewerage at present and have on-site water supply. The existing septic tank disposal systems are assumed to be sufficient until 2021, provided planning controls are implemented to ensure section areas are adequate for effluent disposal.

4.6 Resource Consents

It appears that the process of applying for resource consents for the different sewage treatment and disposal developments has been delayed by either inadequate information having been included with the applications or by the regulatory agency's need for resource information. For example, the Paraparaumu Sewage Treatment Plant resource consent process took nearly two years to complete. The process included:

- resource consent application made on 23 December 1991 and eleven submissions were received in response to the notification

- Wellington Regional Council sought further information from the Council on August 1992 on:
  - Effects of discharge and alternatives:
  - Consultation that had been undertaken:
  - Mitigation measures, including how discharge will meet water quality standards;

- Wellington Regional Council requested short- and long-term strategies for wastewater treatment and disposal in February 1993;

  The Kapiti Coast District Council sent information on upgrading to the Wellington Regional Council in March and July 1993;

- Wellington Regional Council granted a resource consent for the discharge of tertiary treated domestic sewage from the Paraparaumu Sewage Treatment Plant on 30 November 1993. The consent conditions included plant upgrading to be completed by 1 January 1995 and a Council decision on a long-term sewage effluent disposal option being made by 31 March 1996.

The resource consent for the Otaki sewage treatment plant, which was renewed in 1993 for a term of 5 years, requires the Council to undertake investigations and upgrade the treatment plant if necessary.

Applications for all the consents for the Waikanae sewage treatment plant (refer Section 4.5) have been lodged with the Wellington Regional Council who is requesting further information from the Kapiti Coast District Council.

TABLE 3: SUMMARY OF PRESENT AND PROPOSED SEWAGE TREATMENT AND DISPOSAL METHODS

Location	Present Treatment System	Present Disposal System	Population/ Present Capacity	Constraints	Proposed Treatment	Disposal Options	Timetable
Paekakariki	Septic Tanks	Ground		No capacity for growth; Potential public health problems	Depends on disposal option chosen	To waterway, land or pump north to Paraparaumu	Long-term disposal decision expected by 31 March 1996
Raumati/ Paraparaumu (part)	Septic Tanks (400?)	Ground			Can join reticulated system	To waterway, land or pump north to Paraparaumu	Long-term disposal decision expected by 31 March 1996
Raumati / Paraparaumu	2-stage Treatment Plant & UV Disinfection	Mazengarb Drain to Waikanae River	19,000 / 25,000-30,000	Insufficient sludge disposal capacity	Long-term disposal uncertain	To waterway, land or sea	Long-term disposal decision required by 31 March 1996
Waikanae (part)	Septic Tanks (number?)	Ground					
Waikanae	Oxidation and Maturation Ponds	Spray Irrigation, overflow to Black Drain and Ngarara Stream	7,500 / 6,000	Overloaded pond; Insufficient land area; Polluted drain	Commissioning Pond 2 in the short-term; Long-term depends on disposal option	To waterway, land or sea	Long-term disposal decision expected by 31 March 1996
Peka Peka	Septic Tanks	Ground					
Te Horo	Septic Tanks	Ground					
Te Horo Beach	Septic Tanks	Ground					
Otaki	Oxidation Ponds	Land (border dyke)	6,000 / overloaded	Overloaded ponds; Poor land infiltration	2-stage treatment plant	Infiltration wetland	Upgrading has commenced

5. EVALUATION OF PROGRESS

In order to evaluate progress on the Council's infrastructure management, the relevant steps to improve environmental management performance as outlined in the Commissioner for the Environment's 1991 report are examined, as are the outcomes of the Council's 1991 Strategic Plan. Next, Council policy and actions taken from October 1991 to May 1995 are examined against the Commissioner for the Environment's 1991 recommendations. Finally, recommendations are made to the Council.

5.1 Focus of Parliamentary Commissioner for the Environment Report

The Commissioner for the Environment's 1991 investigation identified a number of steps which could be taken by the Kapiti Coast District Council to improve its performance as environmental manager. This investigation has focused on the following:

- the placement of greater emphasis on strategic planning; and
- the development of strong linkages between the strategic plan, annual plan and district plan.

During this investigation, issues of consultation with the community were raised by community and environmental groups, as discussed in Section 1.3.

5.2 Evaluation of Kapiti Coast District Council Strategic Plan Outcomes

The Council's 1991 Strategic Plan's outcomes in relation to water supplies and wastewater disposal were:

> *1. A commitment to ensure the on-going protection of water catchments including the avoidance of inappropriate development.*
>
> This issue is being addressed through objectives and policies for the rural zone in the draft District Plan. Draft rules in the Plan aim to discourage close subdivision in these catchments in order to protect the water catchments.
>
> *2. Provision within two years of increased reservoir storage in the Otaki water supply system (1994).*
>
> Council decided in 1994 that standby generators should be provided instead of water storage reservoirs (refer Section 3.3.2).

3. Measures to supplement the existing Hautere/Te Horo rural water supply system within five years (1997).

Although there has been no indication in the Annual Plans of recent years, a detailed report has been prepared by consultants reviewing the Hautere water scheme.

4. A long-term objective for Te Horo Beach of providing full water reticulation.

There have been no investigations carried out and no indication in recent Annual Plans of a likely timeframe in which to progress this issue. The residents rejected a proposal to establish a water supply using Wellington Regional Council bores.

5. Commitment to continue with water conservation campaigns for reducing water usage. These include encouraging supplies to be supplemented from groundwater or rainwater for other than domestic uses and consideration of universal metering.

Council has continued with water conservation campaigns, has encouraged the use of other water sources for non-potable uses and has considered metering of domestic dwellings (refer Section 3.4, 3.6). Implementation of a policy to meter extraordinary water users has not been considered yet (refer Section 3.6).

6. Recognition of the wishes of the Paekakariki community not to be connected to the Paraparaumu/Waikanae water reticulation system subject to the matter being reviewed on a triennial basis.

No such review has been carried out in the 1992 to 1995 triennium, nor signalled in the relevant Annual Plans. However, the network analysis has shown that this option is not economically feasible (refer Section 3.3).

7. Assessment within three years of options for augmenting the Paekakariki water supply (1995).

Preliminary work only has been carried out to assess options.

8. Arranging within three years for a further technical evaluation of groundwater, storage or water from rivers with a view to making a decision within five years on the future source and nature of water supply systems required to meet expected growth demands (1995 - 1997).

Council has carried out *investigative* work on the options and is expecting to make decisions within this timeframe (refer Section 3.3).

9. Expansion within at least five years of the Otaki sewage treatment and disposal facilities (1997).

Upgrading to a 2-stage treatment plant with disposal to an infiltration wetland has now commenced. It is anticipated that the proposed upgrading will remedy most of the problems at the Otaki Sewage Treatment Plant (refer Section 4.5).

10. Continued exploration of the viability of long-term sewerage reticulation and disposal systems on an individual community or district-wide basis.

The 1994/95 Annual Plan indicates Council intends to complete a long-term sewage effluent strategy for the district and undertake detailed site investigations for the preferred options by 30 June 1995 (refer Section 4.5).

11. Acceptance of the principle of a long-term sewerage system for Paekakariki. The nature, timing and funding to be determined in consultation with the local community.

The Paekakariki community has decided not to pursue a reticulated sewerage system for the town (refer Section 4.5).

5.3 Findings

Based on Kapiti Coast District Council actions over the last four years, the Parliamentary Commissioner for the Environment has concluded that:

Water supply

- Information on the water resources of the Kapiti Coast gathered by the Wellington Regional Council over the last four years has shown that the Waikanae River cannot supply the present and future water demand of the Paraparaumu/Raumati/Waikanae communities.

  Council has investigated several options for the future supply of water to the Paraparaumu/Raumati/Waikanae communities over the last four years and is expecting to complete a long-term strategy by the end of 1995 which will provide a framework for future capital expenditure.

- In considering the option of a dam for augmenting water supply to the urban areas, Council does not appear to have studied the implications for water conservation in the long term.

- The dry weather in early 1994 showed the vulnerability of relying on the Waikanae River as the sole source of supply for the Paraparaumu/Raumati/Waikanae areas.

- A long-term strategy for the Otaki water supply is being prepared.

- Water conservation campaigns have resulted in summer water consumption decreasing up to 1992 but in 1993 and early 1994 water consumption has remained about the same .

- Leakage of water from the bulk water supply system has been investigated but was not found to be the cause of significant water loss.

- The monitoring of the effectiveness of water conservation campaigns is not carried out on a yearly basis to assess long-term trends.

- Not all of the outcomes relating to water supply in the 1991 Strategic Plan have been reflected in the Council's Annual Plans over recent years.

Sewage Treatment and Disposal

- A long-term sewage effluent strategy for the district is being undertaken and is expected to be completed in July 1995. Work on the environmental impact of sewage treatment and disposal options is being carried out with the aim of incorporating this into the strategy.

- The Paraparaumu Sewage Treatment Plant has been upgraded recently to increase its capacity and effluent quality. However, sludge management has yet to be finalised. Decisions on choice of a long-term disposal option are dependent upon the district's long-term strategy for wastewater treatment and disposal.

- A sewage effluent strategy for the Waikanae community is dependent on choosing an appropriate disposal option. The choice of a receiving environment for the treated sewage from the Waikanae Sewage Treatment Plant is a major strategic decision yet to be made by the community and the Council. Information on the quality of incoming effluent and flow balances between the ponds, the Black Drain and the spray irrigation area has assisted Council to improve operation of the plant.

- The Paekakariki residents have chosen to retain their present system of on-site wastewater disposal using septic tanks.

- Upgrading at the Otaki Sewage Treatment Plant to 2-stage treatment with disposal to an infiltration wetland has now commenced.

- Monitoring of the Paraparaumu, Otaki and Waikanae sewage treatment plants and receiving waters is now carried out on a systematic basis to meet resource consent requirements and to assess operational performance of the plants.

- Council participation in the Ministry of Health 1994/95 national bathing beach survey will assist both Council and public health monitoring of any potential health effects arising from the disposal of treated sewage effluent.

- As with water supply, not all of the issues relating to sewage treatment and disposal identified in the 1991 Strategic Plan have been included in the Council's Annual Plans over recent years.

Resource Consent Process

- The resource consent process for some of the water supply and sewage treatment and disposal development has been subject to delay. In some instances background information has been deemed insufficient by the Regional Council. In other instances there have been delays in assembling the required information.

Consultation

These findings relate only to consultation regarding water supply and sewage treatment and disposal issues:

- The complex nature of the issues surrounding water supply and sewage treatment and disposal, plus the increase in information available, has resulted in changes to former assumptions and made it difficult for the public to follow and contribute to strategic issues.

- The Council has made an adequate effort to consult with the community on both the strategic and operational aspects of water and wastewater management.

- There is scope to improve public participation, particularly in regard to the strategic issues facing the Council.

5.4 Recommendations

It is recommended that the Kapiti Coast District Council:

1. Reassess the target for water conservation in light of the indication that the actual summer water consumption is not reducing steadily towards the target of 650 litres/person/day.

2. Reassess the 1991 Strategic Plan during the next triennium, as many of the objectives for water supply and sewage treatment and disposal have now been met.

3. Perform yearly monitoring on the effectiveness of the water conservation campaign.

4. Develop ways of facilitating early consultation with the community on major strategic issues.

5. Establish working groups for community consultation and input on the strategic infrastructure issues facing the district.

6. Consider the need for additional project management skills to meet the on-going demand for strategic project management.

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