

## 11.0 Assessment of Wastewater Services

### 11.1 Travelling Public

#### 11.1.1 Description

The travelling public is described as non residential or residential public travelling through the Hauraki District utilising the district services.

#### 11.1.2 Methods Used to Dispose of Sewage

Methods of disposal for facilities utilised by the travelling public community include public reticulated sewage schemes and on-site effluent disposal.

#### 11.1.3 Risks Attributable to the Absence of a Reticulated Sewerage Network

TRAVELLING PUBLIC UNSERVICED	Current probability of an event occurring	Current consequence of such an event occurrence	TOTAL current risk factor	Future probability of an event occurring	Future consequence of such an event occurrence	TOTAL future risk factor	Difference between Current and future risk
Septic tank failure	3	3	9	N/A	N/A	N/A	N/A
Effluent field failure	3	3	9	N/A	N/A	N/A	N/A
Overloading	3	3	9	N/A	N/A	N/A	N/A
Spillage	3	3	9	N/A	N/A	N/A	N/A
Seepage	3	3	9	N/A	N/A	N/A	N/A
Contamination of a waterway	2	3	6	N/A	N/A	N/A	N/A
Lack of	1	2	2	N/A	N/A	N/A	N/A

<b>TRAVELLING PUBLIC UNSERVICED</b>	Current probability of an event occurring	Current consequence of such an event occurrence	<b>TOTAL current risk factor</b>	Future probability of an event occurring	Future consequence of such an event occurrence	<b>TOTAL future risk factor</b>	Difference between Current and future risk
maintenance							
Vegetation growth over effluent field	2	2	4	N/A	N/A	N/A	N/A
Trade waste entering the septic tank	2	3	6	N/A	N/A	N/A	N/A
Public health	3	3	9	N/A	N/A	N/A	N/A

<b>Community</b>	Current probability of an event occurring	Current consequence of such an event occurrence	<b>TOTAL current risk factor</b>	Future probability of an event occurring	Future consequence of such an event occurrence	<b>TOTAL future risk factor</b>	Difference between existing and future risk
Travelling Public Unserviced	2.5	2.8	7.0	N/A	N/A	N/A	N/A

### 11.1.3.1 Risk Assessment Conclusion

The travelling public community has a high risk for health and environmental impacts compared to other communities assessed. Refer to section 10.2 for overview.

## 11.1.4 Assessment of the Quality and Quantity of Discharged Wastewater

### 11.1.4.1 Collection and Treatment

Public sewerage reticulation and treatment and on-site effluent disposal by way of septic tanks with effluent disposal fields are the predominant disposal methods.

### 11.1.4.2 Operation and Maintenance

Maintenance appears to be as per other communities utilising on-site effluent disposal, that being at least 25% use septic tank cleaning which often indicates soakage field failure. A council run maintenance programme would be beneficial in these instances.

### 11.1.4.3 Treatment Process Effects

For those utilising on-site effluent disposal, treatment process effects are those as described under 11.3.5.3.

### 11.1.4.4 Effluent Disposal Type

Utilisation of on-site effluent disposal as the primary sewage disposal option (septic tanks) is the most widely used disposal method for the travel. Public reticulation and treatment is also used.

### 11.1.4.5 Effluent Disposal Risks

Effluent disposal risks for on-site effluent disposal may include:

- Contamination of a waterway due to non-maintenance, overloading and/or high ground water level.
- Disease.

### 11.1.4.6 Resource Consents

Resource consents are not required unless the average outflow of effluent is more than 3000 litres per day over an entire month.

### 11.1.4.7 AS/NZS 1547:2000 Compliance

A detailed survey and investigation would need to be undertaken to ascertain any compliance variances to AS/NZS 1547:2000. However, it is assumed that a number of on-site disposal systems within the Hauraki District may not comply due to inadequate ground conditions, groundwater levels and/or proximity to waterways. Council have no immediate plans to undertake such a survey in the near future.

#### **11.1.4.8 System Capacity for Future Demands**

A perceived problem of on-site disposal of effluent is the cumulative effect of a large number of small discharges. Therefore, system capacity should be addressed at the time of building consent.

#### **11.1.4.9 Existing System Life Expectancy**

Life expectancy of on-site effluent disposal systems varies greatly from less than 10 years, to 50 years depending on ground and water level conditions as well as maintenance.

#### **11.1.5 Current and Estimated Future Demands**

Health guidelines or possible legislation may influence council's decision to further investigate options with regard to public health.

#### **11.1.6 Options to Meet Demands and their Suitability**

Will be guided by definition of demand size.

#### **11.1.7 Intended Role of the Hauraki District Council in Meeting the Demands**

Council has not formulated any intention to undertake a role at this present time.

#### **11.1.8 Hauraki District Council's Proposal for Meeting the Demands**

No proposal has been formulated at present.

## 11.2 Urban & Rural Serviced

### 11.2.1 Description

Residents located in an urban reticulated area such as Whiritoa, Waihi, Paeroa, Kerepehi, Turua, and Ngatea form the urban serviced community.

Residents located in a rural reticulated area such as Waitakaruru form the rural serviced community.

### 11.2.2 Methods Used to Dispose of Sewage

Typically, sewage disposal is provided by public reticulation network from the dwelling to a public wastewater treatment facility. This system is owned, operated and maintained by the Hauraki District Council from the treatment facility to the boundary of the lot.

Refer to appendix B of the HDC Wastewater Asset Management Plan for detailed descriptions of the urban and rural reticulation networks.

### 11.2.3 Risks Attributable to the Absence of A Reticulated Sewerage Network

Community	Risk factor for current health impacts of discharges	Risk factor for current environmental impacts of discharges	<b>TOTAL current risk factor</b>	Risk factor for future health impacts	Risk factor for future environmental impacts	<b>TOTAL future risk factor</b>	Difference between existing and future risk
Urban and Rural serviced	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>0</b>

#### 11.2.3.1 Risk Assessment Conclusion

The urban and rural serviced community has a low risk assessment for health and environmental impacts compared to other communities assessed. Refer to section 10.2 for overview.

### 11.2.4 Assessment of the Quality and Quantity of Discharged Wastewater

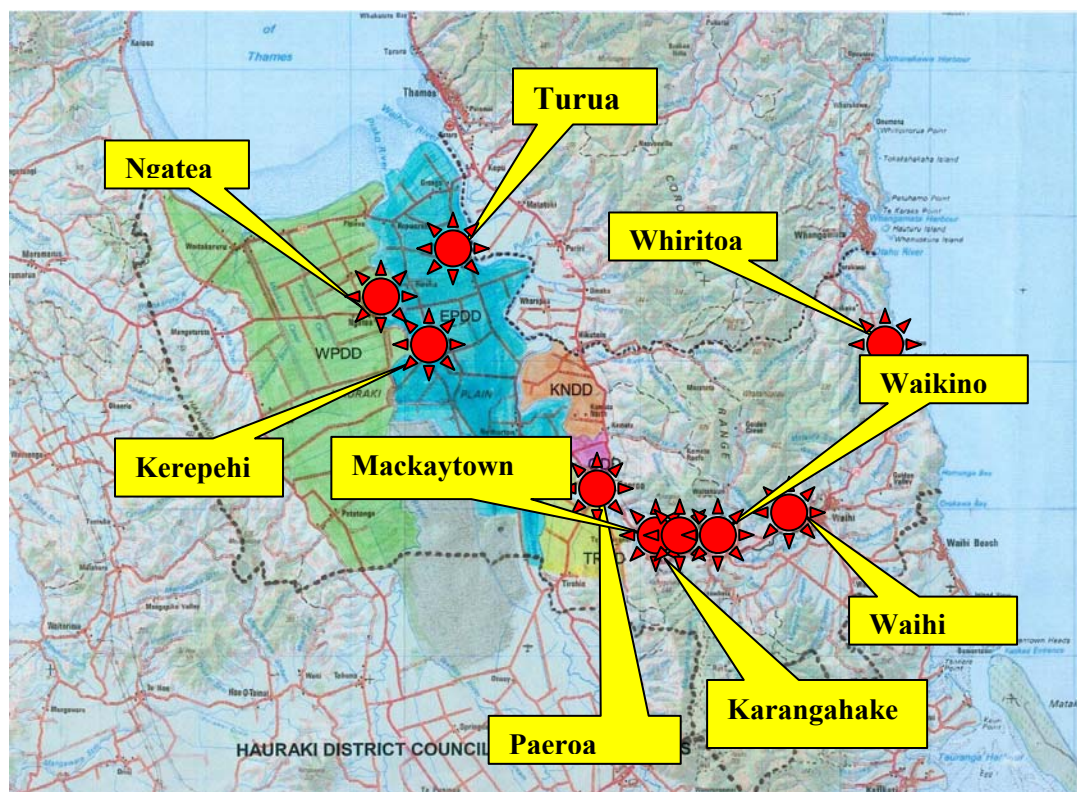


Table 3.2.1.1 – Plan of Hauraki District Council “URBAN SERVICED” community.

#### 11.2.4.1 Collection and Treatment

##### Whiritoa

The township of Whiritoa is Hauraki District Councils only coastal town. It established a reticulated system and treatment plant in 1989/90.

Unlike other towns within the Hauraki District, Whiritoa has high seasonal population fluctuations due to its beachside location. The permanent residential population is approximately 243, while the present summertime peak population is approximately 2200. This causes significant fluctuations in wastewater volumes.

The Whiritoa wastewater treatment and disposal system comprises a facultative aerated pond followed by a storage pond, followed by spray irrigation onto a Eucalyptus plantation. The ponds are located adjacent to a tributary of the Whiritoa Stream, about 300m to the west of Whiritoa and State Highway 25. The first pond has a normal operating depth of 2.4 m and a volume of 2600 m<sup>3</sup>. The pond has a 5.6 kW floating aerator which operates when the dissolved oxygen level drops below a threshold level.

The storage pond has a maximum liquid depth of 2.6 m, and a storage capacity of 5600 m<sup>3</sup>. The purpose of the storage pond is to allow storage of effluent over the peak Christmas/New Year holiday period. Effluent is gradually drawn down by irrigation.

The irrigation system has two 37 kW pumps which deliver effluent to separate parts of the irrigation area. The effluent is applied to the ground with a range of sprinklers. The area of the irrigation site is 5.8 ha. The area is planted with about 8260 Eucalyptus Botryoides. The initial trees were planted in 1989. It is intended that these trees be coppiced every 7 years. Coppicing involves cutting the tree back to the stump, from which the tree will sprout again. The coppiced timber can be used as firewood.

Additions and alterations to this wastewater treatment plant are as follows:

- Aerator added to storage pond approx. 1994 to resolve problems of occasional odour.
- Aerator on First pond converted to Dissolved Oxygen control, approx. 1996 to improve treatment and optimise aerator usage.

The condition rating assessment for the Whiritoa wastewater system is "Excellent".

### **Waihi**

The Waihi Borough Council established a reticulated wastewater system in Waihi in 1979. A small oxidation pond was built at this time for treatment purposes. Approximately one-third of the current reticulation system was established at this time.

From 1985 to 1990 the remaining two-thirds of the reticulation was established, the oxidation pond was enlarged, and a second pond was installed. Minor extensions have been made to the system over time due to infill subdivisions occurring.

The Waihi wastewater treatment system comprises a two-stage oxidation pond located off Frankton Road, about 1 km to the southwest of Waihi, on the south bank of the Ohinemuri River. The first pond has a surface area of 4.2 ha (42,000 m<sup>2</sup>). The second pond has a surface area of 1.7ha (17,000 m<sup>2</sup>). The design depth of the ponds is 1.5 m. A step-screen has been installed at the inlet to the first pond. A baffled pipe connects the ponds. The first pond has two 4 kW aerators. A further two 4 kW aerators could be installed in the first pond. A Cipoletti weir has been installed at the outlet of the second pond to monitor flow rates. Effluent from the second oxidation pond is discharged via a 200mm pipe into the Ohinemuri River, adjacent to the oxidation ponds.

This treatment plant facility is undergoing a major upgrade due for completion June 2005 to improve suspended solids and phosphorus removal.

The reticulation system was constructed in two stages, the first in 1979, servicing about one third of the town, and the second commencing in 1986, servicing the remainder. Thus the reticulation system should be in relatively good condition. However, there is a certain degree of inflow/infiltration to the system during heavy rainfalls, which causes occasional wastewater overflows at low-lying manholes and pumpstations.

The condition rating assessment for Waihi wastewater system is "Excellent".

### **Paeroa**

Paeroa's population of 3900 is serviced by a fully reticulated sewerage scheme. Approximately one third of the 26 kilometres of sewerage reticulation was installed 80 years ago and now suffers from large volumes of storm water entering the sewage pipelines. The storm water increases the peak sewage flow

to over 21 times dry weather flow. Due to capacity limitations of the previous sewage treatment facility, large volumes of untreated sewage flows were bypassing the treatment plant and discharged directly to the Ohinemuri River.

Stormwater inflow is mainly through faulty manholes, faulty joints in lines and in laterals from house connections, broken pipes and illegal diversion of stormwater into the wastewater reticulation.

Although Council has started a programme of resolving these problems, it will be some years before this programme is completed. The programme is aimed at reducing the frequency and intensity of overflow events to acceptable levels.

A new wastewater treatment facility was constructed in Irwin Rd and commissioned in January 2002. The new capacity allows for significant stormwater infiltration.

The condition rating assessment for Paeroa wastewater reticulation system is 4 "Significant renewals/upgrades required" and for the treatment facility, the condition rating is "Excellent".

### **Kerepehi**

Kerepehi is a small rural town situated 15.5 km from Paeroa and 7.2 km from Ngatea, originally a residential town for a large dairy factory, developing onto a rural service town. Local work opportunities were reduced when the factory ceased operating in 1987, although Tanners Sawmill now occupies the factory buildings. Predominantly domestic waste water is received by the system.

The Kerepehi wastewater treatment system comprises a two-stage oxidation pond located about 0.5 km to the southwest of Kerepehi, adjacent to the Awaiti Canal. The first pond is 137 m long by 74 m wide with an average depth of 1.35m. Surface area is 10140 m<sup>2</sup>, and volume is 13380 m<sup>3</sup>. The second pond is 85 m long by 60 m wide with an average depth of 1.4 m. Surface area is 5100 m<sup>2</sup>, and volume is 6570 m<sup>3</sup>.

Both ponds have a concrete wave protection band around the inside bank perimeters to protect the embankments from erosion. A 1.1 kW aerator was installed on pond 1 in 1997.

Effluent from the second oxidation pond is discharged via a 150 mm pipe into a 750 mm pipe carrying stormwater from the Tanners Sawmills. The outflow from the oxidation ponds mixes with this discharge before discharging into the Awaiti Canal some 150 m upstream from the oxidation ponds. At times of high water levels in the canal a non-return valve in the 150 mm pipe prevents backflow into the ponds.

The Kerepehi Wastewater reticulation was constructed in two sections. The first was installed in 1959 to service the Kerepehi Dairy Factory and associated housing area. 1318 metres of pipeline is involved in this area. The second section was constructed between 1976 and 1978. It is expected that the pipelines installed in the 1976-78 period are in relatively good condition. The private laterals and pipelines serving the Dairy Factory section are likely to be in a poorer condition due to their age.

The condition rating assessment for Kerepehi wastewater system is 2 "minor defects only".

### **Turua**

The Turua wastewater treatment system comprises a single oxidation pond located at the end of Abattoir Road, about 1 km to the south of Turua, adjacent to the Waihou River. The pond was designed for a population loading of 500 persons. The current number of sewer connections in Turua urban area is 142.

The pond has a surface area of 3,300 m<sup>2</sup>, is about 1.2 m deep, and has a volume of about 3,700 m<sup>3</sup>. There is no inlet screening. The pond has an outflow flow rate meter and 1.1 kW cage aerator. The pond has a concrete wave protection band around the inside bank perimeter to protect the embankment from erosion.

Effluent from the oxidation pond is discharged to the Waihou River at a point approximately 50 m from the West Bank of the river, adjacent to the pond. At times of high water levels in the river a non-return valve prevents backflow into the ponds.

Complaints from local residents regarding offensive odours have been recorded in the past when the pond has become anaerobic. This problem is managed by use of a 1.1 kW caged aerator installed in 1997.

The wastewater reticulation system was installed between 1982 and 1983, thus the system should be in relatively good condition. The Raratuna Street pump station has been identified as exceeding its capacity. It is suspected that there is a degree of inflow/infiltration to the system during winter and further investigation (including causes) has been programmed.

The condition rating assessment for Turua wastewater system is 2 "minor defects only".

### **Ngatea**

The Ngatea wastewater treatment system comprises a 1.1 ha (11,000 m<sup>2</sup>) oxidation pond located on Phillips Road, to the south of Ngatea. The pond depth is about 1.2 m and volume is about 13,200 m<sup>3</sup>. The pond has a concrete wave protection band around the inside bank perimeter to protect the embankment from wave erosion. An outflow meter and aerator have been installed.

Effluent is discharged by gravity (assisted by pump at times of high pond level) via a pipeline to the Piako River. The discharge is adjacent to the Puhunga Island Bridge.

The Ngatea wastewater reticulation and oxidation pond were built by the Hauraki Plains County Council. As a result of subdivision there have been significant extensions to the reticulation system since its installation.

High pond levels were experienced in times of very high rainfall. Partial blockages were found in the discharge line, these were cleared during the mid 1990's. The problem of high pond levels has not reoccurred.

Ngatea pond had a history of developing anaerobic conditions indicating that the pond was at or near capacity.

Population growth in Ngatea has been such that extension to the treatment plant has been undertaken in 2003. This upgrade consisted of the following:

- Baffled Oxidation pond to provide initial breakdown of organic material. Baffle consists of a 1.5 mm thick PE curtain, weighted at the bottom with a continuous concrete filled PE pipe.
- Addition of a second aerator. This is a 4 kW HPE aerator.
- Addition of Gravel Filter beds. These are two 134 m x 25 m gravel filter beds with a total area of 6,700m<sup>2</sup>. The slag in the beds varies between 0.5 m and 0.8 m deep.
- Addition of an inlet Screen. This is a Sindico screw press with a 3 mm aperture stepscreen.
- Addition of an outfall pumpstation and new 200 OD PN 6.3 PE 100 outfall pipeline.

The bulk of the Ngatea wastewater reticulation system was constructed between 1980 and 1984. The condition of the system has not been physically investigated for the purpose of this assessment, but given the age of the system and service history it is expected to be in relatively good condition.

A condition rating assessment for Ngatea wastewater system is 1 "Excellent Condition".

### Waitakaruru

The community of Waitakaruru is located in the northern Hauraki Plains on SH 25 and adjacent to the Waitakaruru River. The township of Waitakaruru supported a dairy factory (closed many years ago), and the dairy company of the day installed a simple sewerage scheme to service the factory and the dairy company houses. The sewerage scheme was taken over and operated by the Hauraki District Council (i.e. "the Council") after the dairy factory closed. So now part of the township is connected to a Council operated sewerage scheme, and the remainder of the properties have onsite wastewater disposal.

The existing Waitakaruru wastewater system services 14 properties through 14 connections. One property is unconnected.

The scheme was installed in 1963, and taken over by the Hauraki Plains County Council when the Dairy Company ceased operation in the mid 1980's.

The township is very low lying and the subsoil consists of very fine-grained estuarine clays. These conditions are considered to be poorly suited for the general use of on-site septic tank effluent disposal.

The existing system comprises an "Effluent Drainage System" (EDS) which leads to a 22 m<sup>3</sup> (5,000 gallon) treatment tank located on the old peat factory site. The treatment tank is understood to have been designed as a type of Imhoff tank (modified form of septic tank). Effluent from the tank is discharged into the Maukoro Canal.

In 1996, a high level alarm was fitted to the Imhoff tank and since mid 1998, the pumpstations have been upgraded.

Council has received an effluent discharge consent for a new sewerage scheme and has purchased the treatment plant site which is located off Duffin Rd. The works are to be constructed in 2 stages. Stage 1 (the area serviced by the existing scheme plus the school, along with the treatment plant) is to be constructed in February/April 2005. The remainder of the area is to be serviced

in April/June 2005. These construction times have been selected due to the potentially high water table in this area at other times of the year.

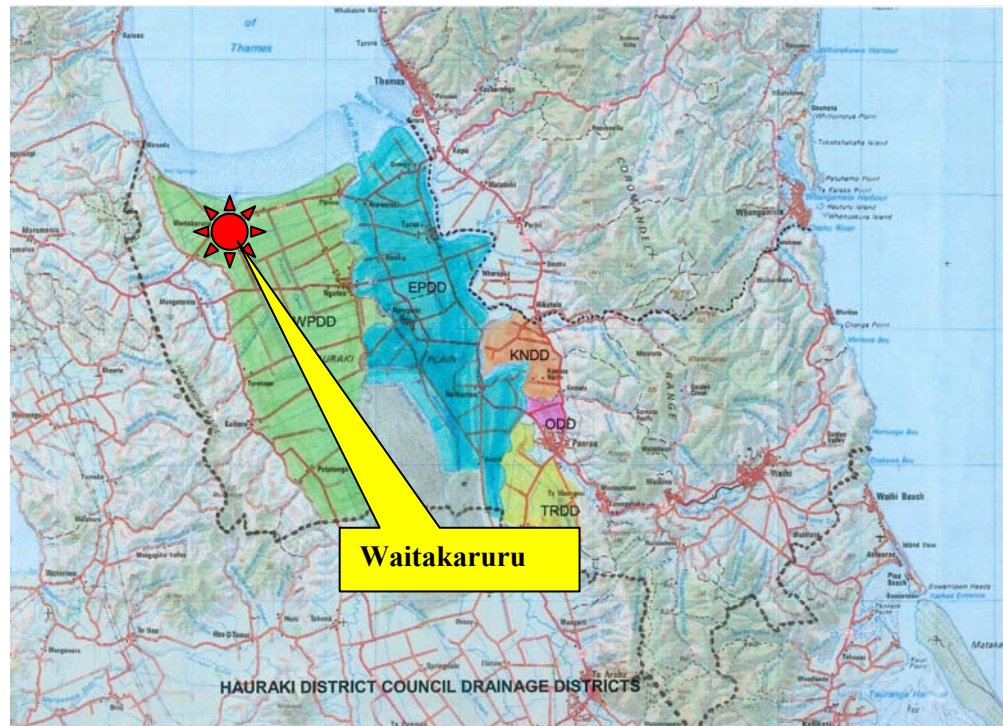
The Hauraki District Council has provided funding in its budget for 2004/05 for stage 1 & 2 of this project which will be matched by an equal amount of subsidy under the Ministry of Health Sanitary Works Subsidy Scheme.

### Scope of new scheme

The new sewerage scheme for Waitakaruru has the following basis:

- Each lot designated by Council will be provided with a new sewerage interceptor tank which is manufactured in accordance with NZS 1546.1:1998 and sized in accordance with clause 6.2.5.1(c) of the Job Specification. The tanks will be connected to the premises serviced by new gravity pipes.
- All interceptor tanks will be provided with high quality pumps that pump effluent to the pressure reticulation network.
- The pressure reticulation network is to feed effluent to the effluent treatment plant.
- The pressure reticulation is to be sized to cope with the effluent from full area of benefit (including two future subdivisions).
- The effluent treatment plant is to be located on the site off Duffin Road and is to be safe, economical, robust, not complex, and to involve minimal operator input. The effluent treatment plant is to have an effluent treatment capacity of 42m<sup>3</sup> day.
- The effluent is to be discharged to the Waitakaruru River and the output from the effluent treatment plant is to meet the requirements of Environment Waikato Consent No.109502.

The condition rating assessment for the existing Waitakaruru wastewater system is 5 “Major defects”. The new system currently under construction is expected to result in a condition rating of excellent.



### 11.2.4.2 Operation and Maintenance

The council intends to continue to own, control, manage and operate all of the public reticulation and treatment systems within the District, with their operation and maintenance conducted by Council's Construction & Maintenance (C & M) and Technical Services (TS) Business Units.

Service Level Agreements (SLA) are being produced to formalise the arrangement with Council's Business Units. Significant effectiveness and efficiency improvements are expected.

Maintenance of Council's wastewater systems has generally been on an 'as required' basis in the past. Generally this has been sufficient.

In the past maintenance, on the Waitakaruru treatment plant and pump stations have been less than necessary. The pump stations are now subject to the maintenance regime used for the other wastewater systems. An appropriate maintenance regime will be put in place for the new sewerage scheme.

Blockages in the reticulation system are cleared as soon as possible, but within 24 hours of being reported.

Paeroa reticulation has approximately 500m of sagged mains. These are mains that have settled, resulting in inadequate falls and a tendency to accumulate sediment. These mains are "Hydrojetted" annually, to remove debris.

For each system, property inspections are carried out on a five-year cycle to identify stormwater inflow problems. Notices to repair will be served on property owners where stormwater inflow problems have been identified. Flow monitoring may also be carried out to identify the level of inflow/infiltration. Where significant inflow/infiltration problems are identified by flow monitoring, appropriate action (e.g. CCTV, smoke testing) will be carried out to more clearly identify the cause of the high flows.

The Council's "Oxidation Pond Maintenance and Management Instructions" includes a maintenance schedule, as well as operating guidelines.

De-sludging of the ponds has not been detailed as this is site specific and infrequent (i.e. De-sludging occurs between 20-30 years). De-sludging is expensive; indications are it could cost in the order of \$200,000 for the smaller systems (Kerepehi, Ngatea, Whiritoa and Turua) and \$400,000 for the Waihi and Paeroa ponds (Waitakaruru do not have ponds).

Maintenance of the All Treatment Plants is carried out in accordance with Council's Operating Guidelines for the relative Treatment Plant.

### 11.2.4.3 Treatment Process Effects

Council has a number of service level targets each year. These include:

- No sewerage overflows into habitable buildings due to faults in the public wastewater system.
- No discernable sewage odour or noise at pumpstation or treatment facility boundaries.
- Less than 30 dry weather sewage overflows each year due to public sewage faults.
- Overflows cleaned up within 12 hours.

There have been no breaches of these targets this year.

#### 11.2.4.4 Effluent Disposal Type

Physical Parameters of Treatment and Disposal Systems

Location	System type	Pond 1		Pond 2	
		Area m <sup>2</sup>	Volume m <sup>3</sup>	Area m <sup>2</sup>	Volume m <sup>3</sup>
Kerepehi	2 Cell Oxidation Pond	7,370	6,377	4,940	5,065
Ngatea	Single Cell Oxidation Pond	11,000	13,200	NA	NA
Paeroa	Activated Sludge Pond	NA	NA	NA	NA
Turua	Single Cell Oxidation Pond	3,300	4,000	NA	NA
Waihi	Twin Cell Oxidation Pond	42,000	63,000	17,000	25,300
Waitakaruru	Imhoff Tank	NA	NA	NA	NA
Whiritoa	Facultative Aerated pond	1080	2,600	2,150	5,600

#### 11.2.4.5 Effluent Disposal Risks

No effluent disposal health risks are perceived.

#### 11.2.4.6 Resource Consents

A significant issue in relation to the wastewater asset is the requirement to obtain and periodically renew resource consents, under the Resource Management Act. This requirement is leading to upgrades of four of Council's wastewater schemes over the next 10 years. It can be expected that the wastewater assets (and in particular the treatment plants and disposal systems) will continue to change over the next 10 years, requiring ongoing capital expenditure and review of maintenance budgets.

##### Waihi

A new resource consent has been obtained for the design and construction of an upgraded Wastewater Treatment System. Construction is expected to begin February 2005 with full compliance with the New Resource Consent expected June 2005.

Presently the Waihi wastewater treatment facility does not comply with the resource consent. With the completion of the upgrade, it is anticipated that full compliance will be achieved.

##### Turua

A new Resource Consent has been obtained in November 2003. This consent expires May 2018 and requires the upgrading of the Turua Wastewater Facility, expected to be completed June 2006.

Sampling results related to consent compliance monitoring of the performance of the treatment plant, from February 1996 to present are available at the Hauraki District Council offices.

##### Waitakaruru

A new Resource Consent has been obtained in December 2003. This consent expires November 2023 and requires the upgrading of the Waitakaruru Wastewater Network. Construction is expected to begin February 2005 with full compliance with the new resource consent expected June 2005.

### **Kerepehi**

The existing Resource Consent expires 30 April 2005. A consultant has been engaged to prepare an application for a new consent. This was lodged 29<sup>th</sup> October 2004. Council is still waiting for notification.

Present sampling results related to consent compliance monitoring of the performance of the treatment plant, from September 1996 to present are available at the Hauraki District Council offices.

Other wastewater resource consents held by the HDC:

### **Whiritoa**

The present resource consent expires October 2019.

Sampling results related to consent compliance monitoring of the performance of the treatment plant, from June 1995 to present are available at the Hauraki District Council offices.

### **Paeroa**

The present resource consent expires June 2020.

Sampling results related to consent compliance monitoring of the performance of the treatment plant, from February 1996 to present are available at the Hauraki District Council offices.

### **Ngatea**

The present resource consent expires October 2015.

Sampling results related to consent compliance monitoring of the performance of the treatment plant, from September 1996 to present are available at the Hauraki District Council offices.

### **Cultural and Spiritual Issues**

A significant issue, which must be considered for the wastewater assets, is the Maori perspective of discharge of wastewater to watercourses. Discharge of wastewater to watercourses (even if well treated) is generally considered offensive to Tangata Whenua, on spiritual and cultural grounds. Tangata Whenua believes that contaminated water in general and human wastes in particular, should be discharged to the ground to allow the wastewater to be spiritually "cleansed". Cultural and spiritual issues are addressed during the resource consent process.

#### **11.2.4.7 AS/NZS 1547:2000 Compliance**

The new wastewater interceptor tanks designed for Waitakaruru have been designed to comply with AS/NZS 1547:2000.

#### **11.2.4.8 System Capacity for Future Demands**

An increasing environmental awareness is expected to continue. The effect of this awareness on current discharge consent renewals may be experienced at

some future time. An ongoing issue may well be the means adopted to dispose of sludge from the base of oxidation ponds.

There is currently pressure by the Regional Council to reduce the impact of septic tanks and to reticulate other smaller communities. In the Hauraki District these could include Waikino, Waihi East and Paeroa fringe areas, Karangahake and Mackaytown.

Along with the problem of treatment plant sludge disposal, there is a problem with private septic tank sludge disposal. It is becoming difficult for private operators to gain resource consents to provide adequate facilities for septic tank sludge disposal. It may be an area where Council will have to take the initiative.

The current programme of Asset Management Plan development may highlight the need for more spending on renewals.

Throughout New Zealand there has been a growing public expectation of improvement in environmental standards over the past 20 years. In particular, a reduction of pollution of water bodies (both real and perceived) is increasingly expected. It is likely that these expectations will continue to grow in the foreseeable future.

As previously discussed, Tangata Whenua also have an expectation of a reduction (if not complete elimination) of discharges of wastewater to water bodies. It is likely that this “demand” will increase in the future.

These expectations could lead to further upgrades of Council’s wastewater treatment and disposal systems being required.

Changes in the use of water are influenced by many factors including; water meter installation, water conservation devices, increases in consumer charges, improvements in appliances and increased public awareness of conservation/environmental issues. These tend to lead to a reduction in volumes of wastewater flow. It is difficult at this time to quantify the impact. It is expected that this will become clearer over time and is likely to be reflected in lower dry weather flow design criteria.

#### **11.2.4.9 Existing System Life Expectancy**

Life expectancy of existing public networks depends on a number of factors. Council is presently working through these factors as part of the Asset Management Improvement Plan.

A monitoring programme has been initiated utilising flow monitoring, pipe sampling and manhole surveys to help in this determination. Paeroa is the first network to receive this monitoring programme, with Waihi to follow four years later and Ngatea to follow Waihi. The other networks will then be investigated to determine the priority for further network investigation.

#### **11.2.5 Current and Estimated Future Demands**

Current trends show that the Hauraki District is experiencing zero population growth. However, local knowledge is that Waihi, Paeroa and Ngatea are experiencing growth in residential units. This will place extra load on the infrastructure.

Both Ngatea and Paeroa have had their Wastewater Treatment Facilities upgraded within the last two years. These new facilities have been designed with future growth in mind.

Waihi is presently undergoing an upgrade of its Wastewater Treatment Facility that is expected to be completed late June 2005. This upgrade will see Waihi through for many years to come.

The bulk of Paeroa's reticulation was installed 80 years ago and now suffers from large volumes of stormwater entering the network. The flow monitoring programme that has been initialised is designed to help identify and eventually address this inflow and infiltration.

Waihi has been identified as a growth community with very little residential land to develop. Council is presently investigation alternative land areas adjacent to Waihi township that may be able to be re-zoned residential. These areas would require new public sewerage reticulation to be installed. It is assumed that one of these areas would be Waihi East that is presently predominantly rural-residential. These dwellings have existing on-site effluent disposal and would be prime candidates for public reticulation.

Ngatea sewerage reticulation was installed mainly between 1980 and 1984 with a few council constructed subdivisions every few years ever since. Council is presently developing a 56 lot subdivision at the south end of Ngatea, with another development planned for construction within 12 months of 120 lots at the north end of Ngatea. Council has no immediate plans for further council initiated developments for Ngatea after this, however it is assumed that a further 250 lots could be developed at the north end of Ngatea in the future by private developers. Council is currently investigating the impact of this future development on its infrastructure.

### **11.2.6 Options to Meet Demands and their Suitability**

Options may include upgrading of bulk mains and reticulation. It could include construction of new networks. These options will be further investigated as sufficient monitoring and survey information is obtained.

### **11.2.7 Intended Role of the Hauraki District Council in Meeting the Demands**

The Hauraki District Council intends to thoroughly investigate options for the townships of Waihi, Paeroa and Ngatea by conducting and analysis of existing infrastructure, population trends and future development. Council will be the co-ordinator of development in these areas.

### **11.2.8 Hauraki District Council's Proposal for Meeting the Demands**

Council's proposal is to co-ordinate various parties who have an interest in these areas and to assemble a future directions plan. Once this plan has been developed, council would oversee development.