





# **Quality Record Sheet**

# Wastewater Activity Management Plan

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# WASTEWATER ACTIVITY MANAGEMENT PLAN

# Overview **Operating and Maintenance Financial Requirements** Population Served 11,320 **Number of Connections** 3,421 Number of Council Wastewater Schemes 12 **Number of Treatment Plants** 7 Number of Pump Stations 26 Length of Mains 140km Replacement Value \$41.4m **Historic Yearly Wastewater Volumes Population Predictions** 25000 900 20000 880 per Effluent m3 (,000) 10000 820 760 2001/02 2002/03 2003/04 2004/05 2007 2008 2011 2012 2013 20 Year Renewals Financial Requirements **New Capital Financial Requirements** 600 09/10 13/14 Year



#### The key issues relating to the Management of the Councils Wastewater Schemes are:

- The 2005 ratepayer survey shows that ratepayers in the Selwyn District have a high level of satisfaction with their current wastewater service
- Ensuring treatment and reticulation expansion (design and implementation) proceed in a manner that does not impede development within the district
- Formalise management agreements with EDS to enable Community Outcomes and associated Levels of Service to be achieved
- Internal process within Council be reviewed to ensure succession planning and quality control auditing is at industry standard
- A review of the maintenance contract is required to ensure that future maintenance contracts will allow increased control on expenditure and increased performance reporting by contractor
- The ongoing operation of the two On Site Sludge Disposal Areas are a valuable resource to the community



## WASTEWATER SCHEMES ACTIVITY MANAGEMENT PLAN

#### 1 INTRODUCTION

#### 1.1 Background

The purpose of this plan is to outline, and to summarise in one place, the council's strategic and management long-term approach for the provision and maintenance of wastewater to properties throughout the district (excluding those that service single premises that have their own wastewater treatment and disposal systems) - whether they be provided by public or private means.

The council is responsible for 12 reticulated wastewater systems that services 3,421 properties with the district. The wastewater schemes have a replacement value of approximately \$41.4m (Excluding land value). Overall there are 26 pump stations and 7 wastewater treatment and disposal plants. Total length of the reticulation is 140Km, varying in diameter from DN50 to DN400.

All of the figures are expressed in dollar values as at 30th June 2005 and exclude GST, unless stated to the contrary.

#### 1.2 Community Outcomes to which the Activity Contributes

The draft 2006 community outcomes to which the wastewater schemes activity primarily contributes is:

Community Outcome	The Council Will (Council Role is in Bold)
Safe living environment	<b>Ensure</b> wastewater is removed reliably from properties serviced by Council wastewater schemes.
	<b>Ensure</b> problems associated with Council's wastewater schemes are resolved promptly.
Access to community and public health services	Monitor public health issues for those settlements not currently serviced by a Council wastewater service
	<b>Assist</b> those settlements not currently serviced by a Council wastewater service by providing advise and expertise
Air, land water and general environment to be kept in a healthy condition	<b>Ensure</b> Council manages Wastewater schemes wisely.
	<b>Ensure</b> the natural environment is not polluted by discharge from a Council wastewater scheme.

#### 1.3 Activity Goal and Principal Objectives

The wastewater supply activity goal is stated in the 2004 Selwyn Community Plan as being:

"To ensure the protection of the public health and property of the District by providing cost effective sewage systems relevant to the needs of District townships in an environmentally sensitive manner""

#### 1.4 Strategic Approach

The strategic approach for the Selwyn District Council is to ensure wastewater treatment and disposal for all communities proceed in a manner that does not impede development within the district. This will include the following:



- Community wastewater disposal system will be investigated for the communities of Dunsandel and West Melton
- Upgrading of treatment, pumping and reticulation for Rolleston and Lincoln
- Continue the investigations into the options available for wastewater treatment and disposal for the townships of Kirwee and Darfield
- Investigations into the options available for wastewater treatment and disposal for the expansion of Prebbleton beyond its present design capacity
- Investigations into the integration of wastewater treatment and disposal to ascertain the
  viability and economics of a central treatment and disposal facility which services the
  majority of the Council serviced communities in the plains area.

It is anticipated that the effects of climate change will result in increased frequency and intensity of severe events such as severe droughts and floods. It is therefore essential that Council are aware of the effects of climate change and to integrate these into the standard Council considerations to ensure the wastewater services in the district is meets the future demands.

# 2 LEVELS OF SERVICE, PERFORMANCE MEASURES AND RELATIONSHIP TO COMMUNITY OUTCOMES

#### 2.1 Performance Measures

The Council has modified the existing service levels and associated performance measures to be more meaningful and accurately reflect the wastewater services along with more relevant reporting of the service. Changes to the current Levels of Service will impact on future scheme budgets.

#### **Customer Levels of Service**

The following Customer Levels of Service are proposed:

- Wastewater is removed reliably from my property
- The natural environment is not polluted
- Problems are resolved promptly
- Council manages the Wastewater Service wisely

The underpinning Technical Service Standards are more defined and can be accurately reported on.

Table 2-1: Proposed Levels of Service, Measurement, Monitoring and reporting Requirements

Number	Customer Level of Service		Technical Service Standards	Monitoring Methodology	Reporting Frequency
Nu		Measurement		Wethodology	rrequency
WW1	Wastewater is removed reliably from my property	Customer satisfaction survey with a greater than 85% positive	Number of justifiable complaints	Consumer complaints Data Base	Manthly guartanty
	, property	response of "overall satisfaction"	There is adequate capacity in the wastewater systems	Contract KPI report	Monthly, quarterly and annual report
			There are no pipe blockages	Contract KPI report	
			Infiltration flows minimised	Monthly reporting on SCADA	
WW 2	The natural	Customer	Wastewater is treated and	Inspections,	Monthly, quarterly



Number	Customer	Level of Service			Reporting Frequency
N		Measurement		0,7	1
	environment is not polluted	Satisfaction Survey- Interaction with special interest groups (eg. fish and game, tourist operators)	disposed of in an appropriate manner  Resource consent conditions	sampling and monitoring at frequencies required in operations manuals	and annually
			are complied with	Consents database	
			Treatment processes are operated as specified in operations manuals	Contract KPI report	
WW 3	Problems are resolved promptly	Customer satisfaction survey with a greater than 80% positive	Response and completion time as set out in Maintenance contract are met	Consumer complaints Data Base	Monthly, quarterly and annually
		response of "no problem with the reliability"		Contract KPI report	
WW 4	Council manages Wastewater Schemes wisely	Customer satisfaction survey with a greater than 80% positive response of "value	100% of replacement and improvement programme completed	NCS reporting Projects database	
	,	for money"	Overall cost to be within +10%-5% of Council approved maintenance budget	Via improved NCS reporting system	Monthly, quarterly and annually
			No non compliant consenting	Consents database	

## 3 EXISTING SYSTEMS

## 3.1 Public Wastewater Systems

The wastewater schemes are owned and administered by Selwyn District Council. SDC has overall responsibility for service delivery including formulation and implementation of management systems, policies and rules governing operation of the wastewater schemes. Refer Section 14.2S1 for details of management hierarchy.

The public wastewater schemes that are presently owned by the Selwyn District Council are shown in the table below.

Table 3-1: Overall Scope of the Councils Wastewater Supplies within the District

Community	Method of Treatment and Disposal	Properties Served	Replacement Value
Arthur's Pass	Primary and secondary septic tank followed by sand soakage bed	9	\$223,873
Castle Hill	Oxidation Pond followed by border dyke irrigation	71	\$1,305,536
Doyleston	Via Leeston WWTP	67	\$558,984
Lake Coleridge	Imholf tank, wetland and UV followed by overland flow and discharge to stream	39	\$976,738
Leeston	Multi staged maturation ponds followed by border dyked irrigation	562	\$6,203,383
Lincoln	Aeration followed by oxidation pond with wastewater pumped to Christchurch	763	\$10,614,750



Community	Method of Treatment and Disposal	Properties Served	Replacement Value
Prebbleton	Wastewater pumped to Christchurch City	526	\$3,937,614
Rolleston	Helpet WWTP - Extended aeration with nitrogen removal with spray irrigation Pines WWTP- Activated sludge plant with nitrogen removal with spray irrigation	1094	\$11,914,757
Selwyn Huts	Septic tank followed by oxidation pond with border dyke irrigation		Not available
Southbridge	Via Leeston WWTP	99	\$2,028,850
Springston	Wastewater pumped to Christchurch City	93	\$1,163,274
Tai Tapu	Wastewater pumped to Christchurch City	98	\$2,225,191
Total		3,421	\$41,152,950

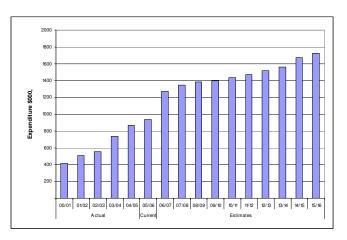
#### 4 MAINTENANCE AND OPERATIONS

#### 4.1 Ownership, Management and Control

SDC has overall responsibility for service delivery including formulation and implementation of management systems, policies and rules governing operation of the wastewater schemes. Some of these responsibilities are delegated to township committees. These committees are very proactive in the operation and management of the individual schemes. SDC's engineering staff is involved in all of the schemes day to day management with the exception of Selwyn Huts.

#### 4.2 Financial Forecasts

operations and maintenance expenditure for assets within Selwyn District for period 2006/2016 is estimated at \$14.8m. It is considered that efficiencies in the day-to-day activities could be identified and implemented to lower the overall lifecycle cost. Selwyn District Council is committed to optimising the operation, maintenance and management of these assets. The graph details the historic and future estimated Maintenance and Operating Costs for period 2000/01 to 2015/16.



#### 4.3 Councils Maintenance Contract

A 5 year maintenance contract (with the ability for 3 additional yearly extensions) was awarded to SICON in June 2004 following normal Council tendering process. The present contract has a high percentage of dayworks that has the following effects:

- No drive for efficiencies by maintenance contractor
- Council has significantly reduced control on expenditure as it has minimal control on cost of repairs. Implementation of the Hansen system, collating repairs etc into categories over a



minimum of 12 months will assist Council in determining what efficiencies can be made to contract structure.

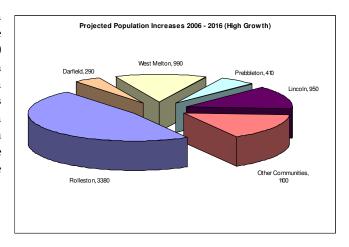
At the same time review of the maintenance contract is required to ensure that future maintenance contracts will allow increased control on expenditure

Significant increase in water (for compliance with DWS2005) and wastewater treatment plants will occur over the next 5 years. The complexity of these plants and their associated resource consent compliance will require skilled and trained engineers for their operation, maintenance and supervision. A review of Council policy on out sourcing the maintenance of treatment plants (water and wastewater) is required to ascertain the most appropriate method for delivery of the required levels of service.

#### 5 FUTURE DEMAND AND DEMAND MANAGEMENT

#### 5.1 Population Predictions

The resident population of Selwyn District at 30 June 2005 was 31,600. The population is projected to reach 38,300 in 2016 under the medium projection and 41,900 in 2016 under the high projection. The current growth rate is between the medium and The projection. high population projection is now considered as the official population predictions for the period 30th June 2005 to 30th June 2016.



#### 5.2 Demand Management

The use of demand management strategies has the benefit of:

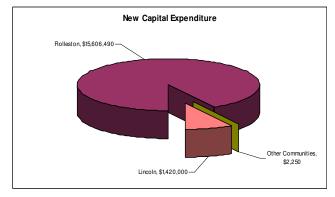
- Increasing the period before additional capital expansion or restrictions imposed
- Complying with consenting authorities requirements
- Reducing operational and maintenance costs

Environment Canterbury as the consenting authority are requiring demand management practices to be implemented (see section H2) as part of the requirements of the proposed Natural Resources Regional Plan (PNRRP) – WQL 45.



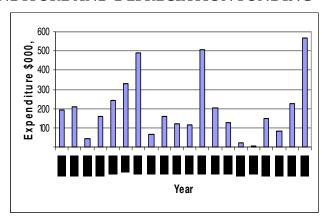
### 6 NEW CAPITAL EXPENDITURE

New capital expenditure is required for servicing the rapid population that is predicted over the next 10 years. The capital costs for the period 2006/07 to 2015/16 are as detail in the graph.



#### 7 RENEWAL CAPITAL EXPENDITURE AND DEPRECIATION FUNDING

The cost of renewal capital work is estimated to total \$2.1m over the next ten years and \$4.1m over the next 20 years. The Council will aim to preserve the service potential capacity of all of its water services assets on a continuous basis. The graph details the forecasted renewal requirements for the period 2006/07 to 2025/26.



#### 8 ENVIRONMENTAL MANAGEMENT AND RESOURCE CONSENTS

A very important aspect of the Wastewater scheme's function is to ensure that the District's natural resources are managed responsibly. Resource consents are held for various activities relating to the wastewater activity such as treatment, disposal and abstraction. These consents have conditions to ensure the resources are managed sustainably.

Proposed Natural Resources Regional Plan (NRRP) Chapter 4 - Water Quality sets out Environment Canterbury's approach to water quality management in the Canterbury region by stating the water quality issues, establishing water quality outcomes for different types of surface and groundwater bodies, and setting out the Policies and methods to achieve these outcomes.

The effect on the operation and management of Wastewater Schemes by the proposed NRRP are detailed in Rule WQL 45 that provides for the use of land for the installation, use and maintenance of sewerage pipeline network as a Controlled Activity. To comply with Rule WQL 45 resource consents for the ongoing operation of the reticulation system will be required.

Of the 24 scheme resource consents presently held (some schemes have a variety of consents):

- Twenty have an expiry date of between 2020 and 2039.
- One has an expiry date of 2010 (Selwyn Huts)



- One has an expiry date of 2006 (Arthur's Pass)
- Two expired (Castle Hill)

Consents renewals for Castle Hill were applied for 6 months prior to their expiry date. This allows the existing consents to be used until the applications have been processed by Environment Canterbury (and any subsequent appeals).

#### 9 RISK MANAGEMENT

Appendix R identifies risks associated with the ongoing Management, Funding, Planning, Development and Operation of the wastewater schemes owned by the Council. The mitigation strategies are detailed and the residual risk is then ascertained. Development of a risk control schedule for all utilities is required and will subsequently be updated on a regular basis to ensure that all risks are relevant and understood. Where required the mitigation strategies have been noted in the improvement programme.

Selwyn District Councils future strategic approach will be to increase the awareness and the implementation of Risk Management Strategies throughout the wastewater scheme areas. The continuous monitoring of these strategies will ensure that changes/modifications in the management/operation of the wastewater schemes are effective.

#### 10 WATER AND SANITARY ASSESSMENTS

#### 10.1 Private Wastewater Schemes

There are very few private wastewater disposal schemes in Selwyn district. Those identified are owned by government institutions and so have good operational procedures in place to ensure compliance with resource consent conditions. There are no major issues regarding these wastewater disposal practices.

### 10.2 Summary of Options for Community Schemes

Council will play a role in the development of wastewater disposal schemes for the areas not currently serviced by a Council scheme. Council will monitor the public heath issues for these settlements and also monitor community requirements and expectations. Council will provide advice and expertise and act as facilitator as required, to help these communities achieved their desired outcomes.

Monitoring the public heath issues for those settlements not currently serviced by a Council scheme will be carried out initially in conjunction with Community and Public Health and the Regional Council.

# 11 SIGNIFICANT ASSUMPTIONS, UNCERTAINTIES AND RISK MANAGEMENT

Forecasting assumptions and uncertainties are essential in the operation of Council's assets to indicate the levels of risks associated with those assumptions. Where necessary additional strategies can be implemented to manage or reduce the risk. The following provides a summary of the significant assumptions and uncertainties which are contained within this Activity Management Plan.



- The information provided has been developed from a sound base, the asset register being of medium quality and renewal projections based on age, rather than condition or performance
- The level of operations and maintenance expenditure is based on existing operating procedures and historic costs
- The renewal programme is based on a small condition sample. Whilst these inspections have indicated that the assets are in good condition, further condition inspections may reveal problems that impact on the required level of renewal funding
- Demand assumptions are based on historical usage
- Population assumptions are based on current trends in natural increase and migration but may vary due to changes to District Plan, review of sewerage discharge agreements with Christchurch City Council and effects of District Plan Appeals

#### 12 BYLAWS AND POLICIES

#### 12.1 Bylaws

The Council presently has no bylaws that are relevant to wastewater schemes. The NZ Standard Model General Bylaws has been review with the revised standard released in 2005. Standard is presently being be reviewed and amended (in conjunction with tradewaste requirements) to suit Council's requirements. It is expected that this will be completed by late 2006.

#### 12.2 Policies

As policies are a way of indicating strategy (or the principles), it is considered that additional policies are required covering a wider range of functions. This would give additional clarity of the functions and rules of the Township. Policies should be reviewed by Council on a 3 yearly basis to ensure that they remain relevant.

#### 13 PLAN REVIEW / PUBLIC CONSULTATION

### 13.1 Public Consultation

The Council will be carrying out public consultation in 2006 to establish the Community Outcomes for the Long Term Council Community Plan. Selwyn District Council also has a history of actively communicating with the public via extensive public consultation, Annual Plan submissions, annual customer surveys and Project teams for specific significant community projects.

#### 13.2 Plan Review Programme

This Plan will be updated on a continuous basis as circumstances change, and will be comprehensively reviewed at intervals of not less than three years via the Special Consultative Procedure. Each review will be completed not later than nine months before the next review of the Long Term Council Community Plan.

#### 14 IMPROVEMENT PLAN AND FUTURE USE OF THE PLAN

#### 14.1 Improvement Programme

Those items identified in the Improvement Plan will be achieved incrementally as indicated in the timeframe of the Improvement Plan. Council's improvement strategy is focused on Asset



Management practice improvements and Operations Management. An overall Implementation and Improvement Plan is detailed in Appendix V of this Plan.

#### 14.2 Future Use of Plan

Historically Asset Management Plans have been carried out for regulatory requirements and not used on an ongoing basis for the optimisation of the lifecycle of the asset. To ensure the wastewater scheme Activity Plan is used to its full potential the following details the methodology for the ongoing (day to day) use, implementation and updating of the Activity Management Plan that includes:

- Training of people for the use of the plan
- Possible future reporting requirements
- Indicate how Activity Management Plans are best going to be used within the Council to enable the appropriate staff to take ownership of the Plan or sections within those plans.
- Ensuring that individuals are aware of their responsibilities and reporting requirements as detailed in the different sections within the Activity Management Plan



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# **APPENDICES**

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# A RELATIONSHIP WITH LEGISLATION, OTHER DOCUMENTS AND ORGANISATIONS

### A1 Background to the Activity Management Plan

This Activity Management Plan (AMP) is one of four AMP's covering Councils utility assets (water supplies, water races, wastewater and land drainage). Each AMP is of an identical format and structure with planning and process linkages referred back to the LTCCP.

In terms of Councils planning processes, these AMP's are set at a tactical level between the LTCCP (a Strategic document) and numerous process plans (operational documents). It is Council's intention that each of the AMP's once adopted by Council will be a significant living management tool that will guide and influence decision-making.

The objectives of this suite of AMP's are to demonstrate that:

- Council understands how the outcomes delivered by the assets link to the wider community outcomes
- Council understands what asset capacity will be required in the future, and what issues
  drive this capacity requirement
- · Council has shown how it will proactively and continually improve knowledge of its assets
- Council has robust and transparent processes in place for managing, operating, maintaining, renewing and extending assets
- Council has adequately considered the class of risks its activities face, and has systematic processes in place to mitigate identified risks
- Council has made adequate provision for funding asset operations, maintenance, renewals and extensions
- The outcomes delivered by the assets are increasingly aligned to the community's wishes and to other internally and externally imposed levels or standards

#### A2 Legislative and Planning Documents

#### A2.1 Long Term Council Community Plan and Activity Management Plans

Activity Management Plans are a key component of Council's planning process. They are prepared within the context and framework of the Long Term Council Community Plan, District Plan, Annual Plan and Funding Policy. Table A.1 depicts the links and information flows within the Activity Management Plan, other corporate plans and public consultation.

The Local Government Act 2002 requires that Councils produce a Long Term Council Community Plan (LTCCP) that provides a description of the activities, outcomes and decision making of the Council for a period of ten years. Community wastewater schemes are considered to be a significant activity within the LTCCP significant activity description. As part of the Local Government Act 2002 (Schedule 10) requirements the LTCCP must, for the ten years of the Plan, identify for each group of assets:



- Costs for any additional asset capacity required
- Maintenance costs
- Renewal costs
- Replacement costs

This statement of cost for the 10-year period includes the accounting for asset depreciation in accordance with recognised financial standards (FRS 3), and the recording of all significant assumptions in preparing the financials.

This Activity Management Plan will provide the basis for identifying service potential, any losses and determining the long term financial strategies for Council's Wastewater schemes network assets.

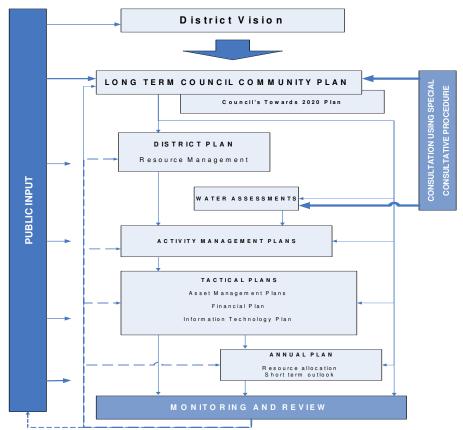


Table A.1 Corporate Links to Activity Management Plans

#### A2.2 Rationale for Council's Involvement

Territorial authorities have numerous responsibilities relating to the provision of wastewater services. One such responsibility is the duty under the Health Act 1956 to improve, promote, and protect public health within their districts. This implies that, in the case of the provision of wastewater services, Councils have the obligation to identify where such a service is required, and to either provide it directly, or to maintain an overview of the service if it is provided by others.



Council's wastewater services assets contribute to conserving public health and therefore enhance the quality of life of residents in urban areas of the District.

In terms of the Local Government Act 2002 the ongoing operation of Wastewater Services is required unless specific approval is sought to withdraw form the activity in whole or part

#### A2.3 Activity Goal and Customer Key Aspects

The wastewater supply activity goal is stated in the 2004 Selwyn Community Plan as being:

"To ensure the protection of the public health and property of the District by providing cost effective sewage systems relevant to the needs of District townships in an environmentally sensitive manner"

In providing a sewerage scheme, the Customer Key Expectations are:

- Wastewater is removed reliably from my property
- The natural environment is not polluted
- Problems are resolved promptly
- Council manages the Wastewater Service wisely

In considering these aspects and the linkage to Community Outcomes and Well Beings, Levels of Service have been developed as described in Appendix R of this Plan.

#### A2.4 Strategic Approach

The strategic approach for the Selwyn District Council is to ensure wastewater treatment and disposal for all communities proceed in a manner that does not impede development within the district. This will include the following:

- Community wastewater disposal system will be investigated for the communities of Dunsandel and West Melton
- Upgrading of treatment, pumping and reticulation for Rolleston and Lincoln
- Continue the investigations into the options available for wastewater treatment and disposal for the townships of Kirwee and Darfield
- Investigations into the options available for wastewater treatment and disposal for the expansion of Prebbleton beyond its present design capacity

It is anticipated that the effects of climate change will result in increased frequency and intensity of severe events such as severe droughts and floods. It is therefore essential that Council are aware of the effects of climate change and to integrate these into the standard Council considerations to ensure the wastewater services in the district is meets the future demands.

Selwyn is one of the country's fastest growing districts. Nationally, Selwyn District's 25 year medium projected rate of growth (57%) puts Selwyn in third place behind the Districts of Queenstown-Lakes (79%) and Rodney (59%). Development is closely associated with the availability of wastewater disposal and as such the District's future development will rely heavily on the availability of appropriate sewerage schemes.

#### A2.5 Legislation and Planning of Documents Affecting this Activity

a) Relevant Legislation and Regulations Affecting This Activity



Building Act 2004

Civil Defence Emergency Management Act 2002

Health and Safety in Employment Act 1992

Health Act 1956

Local Government Act 2002

Resource Management Act 1991

Fisheries Act

New Zealand Coastal Policy Statement

b) Council Policies Affecting This Activity

Trade Waste Bylaw

c) Regional Council Policies Affecting This Activity

Environment Canterbury - Natural Resources Regional Plan

Environment Canterbury - Regional Coastal Environmental Plan

d) Council Planning and Other Documents Affecting This Activity

Selwyn District Council - District Plan

Te Runanga Taumutu – Natural Resource Management Plan

#### A3 How the Council Intends to Work with Others

#### A3.1.1 Tangata Whenua

Selwyn District Council (SDC) will continue to enhance the relationships with the local Iwi through their representative Te Runanga Taumutu. Enhancement of the relationship will be undertaken by the Asset Manager Water by increased discussions on issues that effect both Iwi and Council in relation to water services. (IP A1)

#### A3.1.2 Environment Canterbury

Environment Canterbury is the consent-granting authority for water related activities within the district. The principal documents that Environment Canterbury is concerned with are Regional Council Plans – Water, Waste and Coast. These plans provide a framework for the integrated and sustainable management of Canterbury's resources. Many activities involving the coast or water can only occur if they are expressly allowed by a rule in the Plan or by resource consent.

#### A3.1.3 New Zealand Water & Waste Association (NZWWA)

The NZWWA provides a forum for the exchange of ideas between wastewater scheme managers. The NZWWA also manages projects such as the development of national codes of practice. In recent times, the NZWWA has taken on the role of lobbyist to Government on water issues.

Table A.2 - Other Organisations and Bodies who Council Intends to Work with Relating to this Activity

Organisation	Role	
Council Committees		



Organisation	Role	
Township committees	Governance <sup>1</sup>	
Regional Organisations		
Environment Canterbury	Regulatory	
Fish and Game North Canterbury	Consultative	
Christchurch City	Consultative	
Maori		
Te Runanga Taumutu	Iwi	

# A4 Matters for Consideration

There are no matters that are required for consideration.

# A5 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table A.3 - Improvement Plan

Improvement Number	Description	Time Table
A1	IWI/COUNCIL RELATIONSHIP	
	Enhancement of the relationship will be undertaken by the Asset Manager Water by increased discussions on issues that effect both Iwi and Council in relation to water services	2006/07 onward

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 $<sup>^{\</sup>rm 1}$  Councils policy on –Functions, Duties and Powers of the Community Committees with regard to Community Utilities dated  $16^{\rm th}$  November 2005





#### B OVERVIEW OF COUNCILS WASTEWATER SCHEMES

#### **B1** Introduction

The council is responsible for 12 reticulated wastewater systems that services 3,421 properties within the district. The wastewater schemes have a replacement value of approximately \$41.4m (Excluding land value). Council is also responsible for the operation of two septic tank sludge disposal areas.

Overall there are 26 pump stations and 7 wastewater treatment and disposal plants. Total length of the reticulation is 140Km, varying in diameter from DN50 to DN400.

# **B2** Management

The wastewater schemes are owned and administered by Selwyn District Council. SDC has overall responsibility for service delivery including formulation and implementation of management systems, policies and rules governing operation of the wastewater schemes. Refer Section S1 for details of management hierarchy.

#### B3 Overview of all Schemes

The details of the individual Councils owned schemes are explained in the supplementary section. Section B4Error! Reference source not found. Table 14-1illustrates the scope of the Councils wastewater schemes within the district and Table B.1 illustrates the locations of the schemes on a map of the district.



Table 14-1 - Scope of the Councils Wastewater Schemes within the District

Community	Length of Reticulation (km)	Pump Stations	Method of Treatment and Disposal	Properties Served	Annual Discharge Volumes (2004/05)	Replacement Value	Actual Operating Costs (2004/05)
Arthur's Pass	0.18	-	Primary and secondary septic tank followed by sand soakage bed	9	??	\$223,873	\$8,862
Castle Hill	2.24	-	Oxidation Pond followed by border dyke irrigation	71	??	\$1,305,536	\$12,908
Doyleston	4.58	2	Via Leeston WWTP	67	??	\$558,984	\$19,200
Lake Coleridge	2.34	1	Imholf tank, wetland and UV followed by overland flow and discharge to stream	39	<mark>??</mark>	\$976,738	\$15,587
Leeston	12.9	2	Multi staged maturation ponds followed by border dyked irrigation	562	??	\$6,203,383	\$117,037
Lincoln	37.55	10	Aeration followed by oxidation pond with wastewater pumped to Christchurch	763	<mark>??</mark>	\$10,614,750	\$205,646
Prebbleton	15.45	4	Wastewater pumped to Christchurch City	526	??	\$3,937,614	\$103,377
Rolleston	32.4	3	Helpet WWTP - Extended aeration with nitrogen removal with spray irrigation Pines WWTP- Activated sludge plant with nitrogen removal with spray irrigation	1094	??	\$11,914,757	\$339,266
Selwyn Huts	4.58	1	Septic tank followed by oxidation pond with border dyke irrigation		<mark>??</mark>	Not available	-
Southbridge	10.26	1	Via Leeston WWTP	99	??	\$2,028,850	\$10,355
Springston	5.77	1	Wastewater pumped to Christchurch City	93	??	\$1,163,274	\$12,435
Tai Tapu	12.62	1	Wastewater pumped to Christchurch City	98	<mark>??</mark>	\$2,225,191	\$24,660
Total	140	26		3,421	<mark>??</mark>	\$41,152,950	\$869,333

Properties served are from rateable sections within the individual schemes



# Table B.1: Councils Wastewater Schemes within the District

Insert Map of District

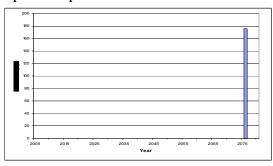


# **B4** Executive Summary of all Councils Wastewater schemes

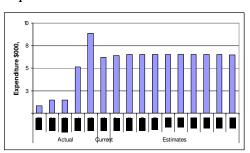
#### **B4.1** Arthur's Pass

Description		Quantity
Population Served		10 -142 (estimate)
Deprivation Index		NA
Physical	Reticulation Length (km)	0.18
Statistics	Manholes	3
	Pump Stations	Nil
Value (\$)	Replacement	\$223,873
	Depreciated Replacement	\$198,642
Flows	Annual average over last 3 years	825
	Average daily	2.3m³/day
	Peak daily	13.9 m³/day
	Minimum daily	? m³/day
Treatment	Primary and secondary septic tank	
Disposal	Sand soakage bed	
Infiltration		Unknown
Properties	Connected	9
	Not connected	1

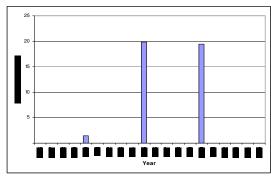
# **Pipework Replacement Dates**



# Operating and Maintenance Financial Requirements



## **Renewals Financial Requirements**



## **New Capital Financial Requirements**

There are no capital requirements



The key issues for the Arthur's Pass wastewater scheme are:

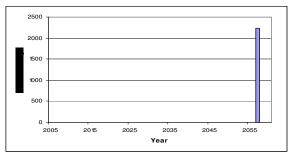
- Small rating area. Unlikely that rating base will increase
- High cost of operation, maintenance and compliance monitoring as treatment plant in isolated area



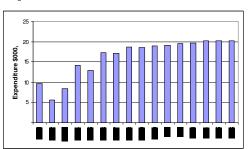
#### **B4.2** Castle Hill

Description		Quantity		
Population Served		Up to 220 (estimate)		
Deprivation Index		NA		
Physical	Reticulation Length (km)	2.24		
Statistics	Manholes	36		
	Pump Stations	Nil		
Value (\$)	Replacement	\$1,305,536		
	Depreciated Replacement	\$862,275		
Flows	Annual average over last 4 years	20,100 m³/yr – based on water meter data		
	Average daily	38.5 m³/day – based on water meter data		
	Peak daily	385.6 m³/day – based on water meter data		
	Minimum daily	? m³/day		
Treatment	Oxidation Pond			
Disposal	Land treatment			
Infiltration		Unknown		
Properties	Connected	68		
	Not connected	10		

### **Pipework Replacement Dates**



# Operating and Maintenance Financial Requirements



## **Renewals Financial Requirements**

No renewals foreseen (Resource consent conditions will drive any renewal requirements)

# New Capital Financial Requirements

Connection to SCADA/Telemetry
Installation of partial flow meter(s)

The key issues relating to the management of the Castle Hill sewerage scheme are:

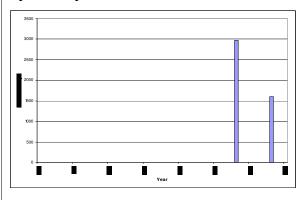
- The wastewater disposal consent has expired, an application is still under discussion with Environment Canterbury
- Purchase of land on which oxidation pond and land disposal area is located has still to be resolved. Discussions with LINZ and pastoral lease owner have been initiated.



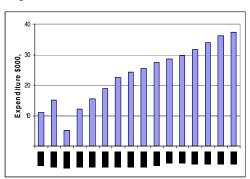
# B4.3 Doyleston

Description		Quantity
Population Served		190 (estimate)
Deprivation Index		NA
Physical	Reticulation Length (km)	4.58
Statistics	Manholes	27
	Pump Stations	2
Value (\$)	Replacement	\$558,984
	Depreciated Replacement	\$454,512
Flows	Annual average over 6 years	8,034 m³/yr
	Average daily	22 m³/day
	Peak daily	494 m³/day
	Minimum daily	? m³/day
Treatment	Via Leeston WWTP	
Disposal	Via Leeston WWTP	
Infiltration		Unknown
Properties	Connected	68
	Not connected	10

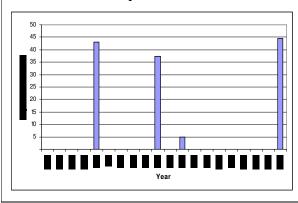
# **Pipework Replacement Dates**



# Operating and Maintenance Financial Requirements



## **Renewals Financial Requirements**



# New Capital Financial Requirements

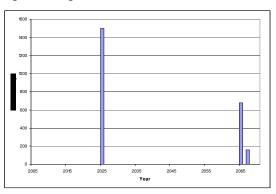
There are no capital requirements



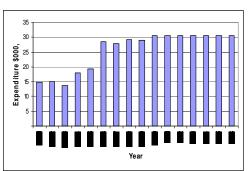
# **B4.4** Lake Coleridge

Description		Quantity			
Population Served		Up to 130 (estimate)			
Deprivation Index		NA			
Physical	Reticulation Length (km)	2.34			
Statistics	Manholes	54			
	Pump Stations	1			
Value (\$)	Replacement	\$976,738			
	Depreciated Replacement	\$523,626			
Flows	Annual average over last 7 years	4,705 m³/day			
	Average daily	12.9 m³/day			
Peak daily		42.2 m <sup>3</sup> /day			
	Minimum daily	? m³/day			
Treatment	Imholf tank, wetland and UV				
Disposal	Overland flow and discharge to stream				
Infiltration		Unknown			
Properties	Connected	40			
Not connected		13			

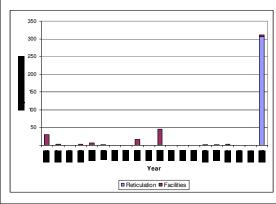
# **Pipework Replacement Dates**



# Operating and Maintenance Financial Requirements



# **Renewals Financial Requirements**



# New Capital Financial Requirements

There are no capital requirements

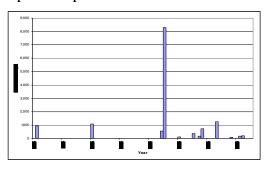
There are no key issues for the Lake Coleridge wastewater services



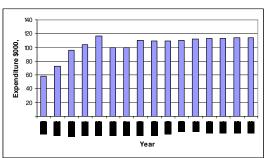
### B4.5 Leeston

Description		Quantity
Population Served		1590
Deprivation In	dex	3
Physical	Reticulation Length (km)	12.9
Statistics	Manholes	135
	Pump Stations	2
Value (\$)	Replacement	\$6,203,383
	Depreciated Replacement	\$4,668,077
Flows	Annual average over 5 years	238,108 m³/ yr – includes Doyleston
	Average daily	4,240 m³/day – includes Doyleston
	Peak daily	23,143 m³/day – includes Doyleston
Treatment	Multi staged maturation ponds	8
Disposal	Border dyked irrigation	10.6ha
	Infiltration basins with final discharge to waterway	Utilised during high ground water levels >0.9 m
Infiltration		High during high ground water periods
Properties	Connected	566
	Not connected	61

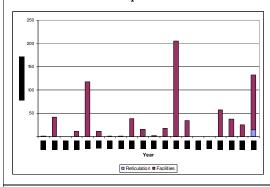
## **Pipework Replacement Dates**



# Operating and Maintenance Financial Requirements



## **Renewals Financial Requirements**



### **New Capital Financial Requirements**

There are no capital requirements

The key issues for the Leeston wastewater scheme are:

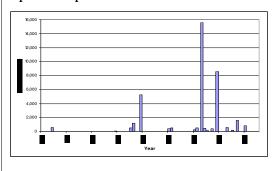
• High levels of infiltration that can occur during periods of high ground water



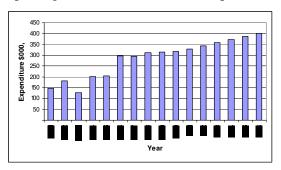
### B4.6 Lincoln

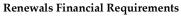
Description		Quantity		
Population Served		2300		
Deprivation In	dex	3		
Physical	Reticulation Length (km)	37.55		
Statistics	Manholes	174		
	Pump Stations	10		
Value (\$)	Replacement	\$10,614,750		
	Depreciated Replacement	\$8,210,756		
Flows	Annual average over 5 years	313,000 m³/day		
	Average daily	857 m³/day		
Peak daily		1,904 m³/day – influenced by buffering capacity of ponds		
	Minimum daily	- m³/day		
Treatment	Aeration followed by oxidation pond			
Disposal To Christchurch City				
Infiltration		Unknown		
Properties	Connected	763		
	Not connected	117		

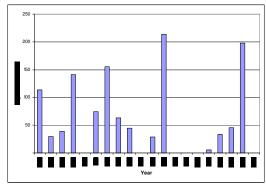
## **Pipework Replacement Dates**



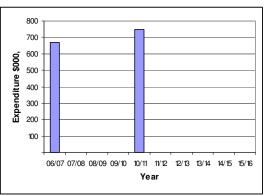
## **Operating and Maintenance Financial Requirements**







## **New Capital Financial Requirements**





The key issues for the Lincoln wastewater services are:

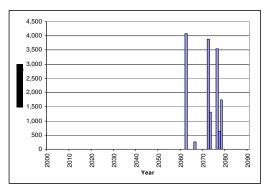
- Increase growth within township that has required the rationalisation of pumping system
- Upgrade of treatment system by 2010/11
- Minimise infiltration thereby reducing Christchurch City Council flow charges

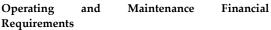


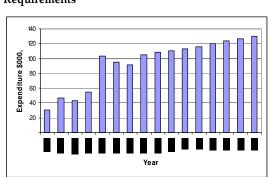
## B4.7 Prebbleton

	Quantity
d	1660 (estimate)
x	2
Reticulation Length (km)	15.45
1anholes	193
Pump Stations	4
Replacement	\$3,937,614
Depreciated Replacement	\$3,542,349
Annual average over last 3 years	119,000 m³/day
Average daily	254 m³/day
Peak daily	397 m³/day
1inimum daily	- m³/day
Nil	
/ia Christchurch City	
	Unknown
Connected	533
Not connected	104
	deticulation Length (km)  Itanholes  Itanhol

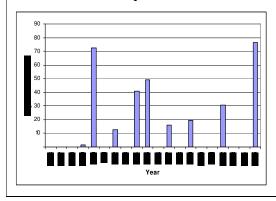
## **Pipework Replacement Dates**







## **Renewals Financial Requirements**



# New Capital Financial Requirements

There are no capital requirements



The key issues relating to the management of the Prebbleton Sewerage scheme are:

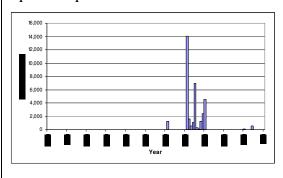
- Ensuring infiltration is monitored and minimised
- Treatment and disposal options for expansion of the Township



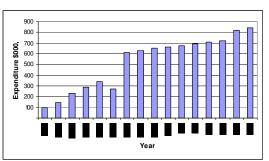
## B4.8 Rolleston

Description		Quantity	
Population Served		3900 (estimate)	
Deprivation In	dex	1	
Physical	Reticulation Length (km)	32.4	
Statistics	Manholes	478	
	Pump Stations	3	
Value (\$)	Replacement	\$11,914,757	
	Depreciated Replacement	\$10,574,572	
Flows	Annual average over last 4 years	175,590 m³/yr	
	Average daily	480 m³/day	
	Peak daily	- m³/day	
	Minimum daily	- m³/day	
Treatment	Helpet WWTP - Extended aeration with nitrogen removal		
	Pines WWTP- Activated sludge plant with nitrogen removal	TO be installed to 6,000 p.e. initially	
Disposal	Helpet - Spray Irrigation		
Pines - Spray Irrigation			
Infiltration		Low	
Properties	Connected (March 2005)	1265	
	Not connected	715	

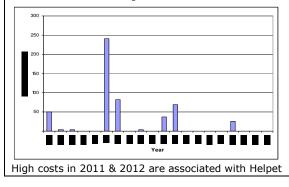
### **Pipework Replacement Dates**



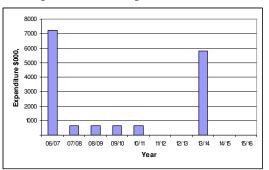
# Operating and Maintenance Financial Requirements



## **Renewals Financial Requirements**



## **New Capital Financial Requirements**





WWTP, should the plant be operational

The key issues for the Rolleston wastewater services are:

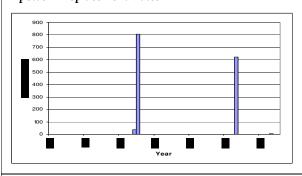
• Ensuring treatment, disposal and reticulation expansion proceed in a manner that does not impede development



## B4.9 Selwyn Huts

Description Quantity Up to 300 (estimate) Population Served Unknown **Deprivation Index** Reticulation Length (km) 4.58 Physical **Statistics** Manholes Not available 1 **Pump Stations** Replacement Not available Value (\$) Not available Depreciated Replacement Annual average over last 5 years 4,606 m<sup>3</sup>/day - based on potable usage Flows 14.8 m<sup>3</sup>/day Average daily 34.5 m<sup>3</sup>/day Peak daily - m<sup>3</sup>/day Minimum daily Septic tank followed by oxidation pond **Treatment** Disposal Border dyke irrigation Infiltration High Connected Unknown **Properties** 

### Pipework Replacement Dates



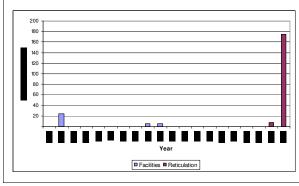
Not connected

# Operating and Maintenance Financial Requirements

Not available

Unknown

#### **Renewals Financial Requirements**



#### **New Capital Financial Requirements**

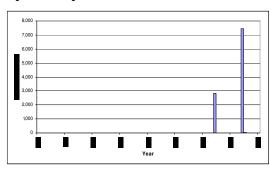
There are no capital requirements



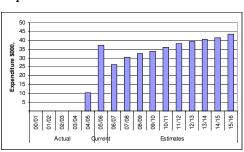
## B4.10 Southbridge

Description		Quantity
Population Serv	ved	800
Deprivation Inc	dex	3
Physical	Reticulation Length (km)	10.26
Statistics	Manholes	86
	Pump Stations	1
Value (\$)	Replacement	\$2,028,850
	Depreciated Replacement	\$2,012,618
Flows	Annual average over last 0 years	Not available
	Average daily	m³/day
	Peak daily	m³/day
	Minimum daily	m³/day
Treatment & Disposal	Via Leeston WWTP	
Infiltration		Low
Properties	Connected (April 2006)	138
	Not connected	228

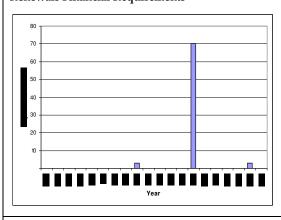
## **Pipework Replacement Dates**



# Operating and Maintenance Financial Requirements



## **Renewals Financial Requirements**



## New Capital Financial Requirements

There are no capital requirements

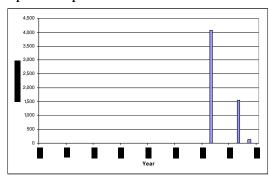
There are no key issues for Southbridge wastewater scheme



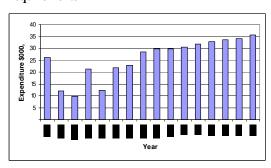
## **B4.11** Springston

Description		Quantity	
Population Ser	ved	300 (estimate)	
Deprivation In	dex	Unknown	
Physical	Reticulation Length (km)	5.77	
Statistics	Manholes	22	
	Pump Stations	1	
Value (\$)	Replacement	\$1,163,274	
	Depreciated Replacement	\$958,152	
Flows	Annual average over last 6 years	17,251 m³/yr	
	Average daily	55.8 m³/day	
	Peak daily	81 m³/day	
	Minimum daily	- m³/day	
Treatment & Disposal	Pumped to Christchurch City		
Infiltration		Low	
Properties	Connected	97	
	Not connected	64	

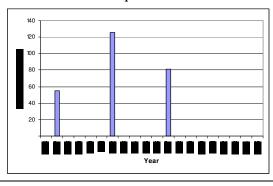
## **Pipework Replacement Dates**



# Operating and Maintenance Financial Requirements



## **Renewals Financial Requirements**



## **New Capital Financial Requirements**

There are no capital requirements

The key issue relating to the management of the Springston sewerage scheme are:

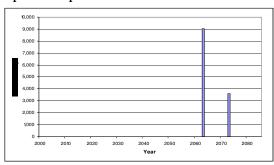
• Ensuring infiltration is monitored and minimised



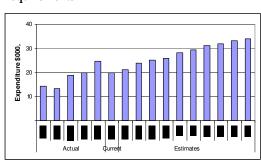
## B4.12 Tai Tapu

Description		Quantity	
Population Serv	ved	330 (estimate)	
Deprivation Inc	dex	Unknown	
Physical	Reticulation Length (km)	12.62	
Statistics	Manholes	42	
	Pump Stations	1	
Value (\$)	Replacement	\$2,225,191	
	Depreciated Replacement	\$1,905,218	
Flows	Annual average over last 6 years	17,908 m³/day	
	Average daily	49 m³/day	
	Peak daily	79.7 m³/day	
	Minimum daily	- m³/day	
Treatment & Disposal	To Christchurch City		
Infiltration		Unknown	
Properties	Connected	107	
	Not connected	23	

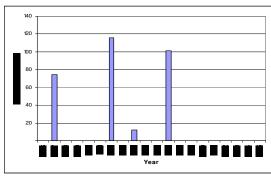
## **Pipework Replacement Dates**



# Operating and Maintenance Financial Requirements



## Renewals Financial Requirements



## New Capital Financial Requirements

There are no capital requirements

The key issue relating to the management of the Springston sewerage scheme are:

• Ensuring infiltration is monitored and minimised





## C WATER AND SANITARY ASSESSMENTS

#### C1 Summary of Key Issues for Private Wastewater schemes

Although the Water and Sanitary Assessments (WSSA) considered both public and private wastewater schemes as per the requirements of the LGA 2002; this chapter only details the private wastewater schemes. The findings of the public supplies are incorporated through out this Plan.

#### C2 General

## C2.1 Communities without Wastewater Systems

Within Selwyn there are numerous townships, small settlements and individual households that utilise septic tanks or other on-site methods to dispose of their wastewater.

Septic tanks provide a cheap and effective method of disposing of household waste generated by toilet flushing, washing machines, baths, showers, dishwashers and from cooking and cleaning. A septic tank can remove over half of the harmful bacteria and three quarters of the solids from the wastewater. It does this by allowing solids to settle out from the liquid, oxidation of the organic material, followed by further treatment in the soil.

The effectiveness of a septic tank depends upon several factors. The tank must be:

- Correctly designed and sized,
- Correctly maintained and operated

In addition, the nature of soils and groundwater are extremely important. Some soils are poor draining and do not allow wastes to soak away. Conversely, soils that are free draining may allow the wastewater to drain directly into the groundwater, contaminating water that might be used for drinking. These two factors are further affected by the density of the housing. As townships increase, each on-site system has less area for the natural processes in the soil to work. For most farms and lifestyle blocks there is plenty of space for an on-site system to work well, even in areas where soil conditions are not ideal.

In Selwyn the nature of some the soil and low lying topography may mean that, unless on-site systems are carefully managed and operated, adequate soak-away capacity is not always achievable. In some cases, due to small section size, it is not possible to install an on-site system that will adequately dispose of the effluent within the section boundary. If the subsoil drainage is inadequate, there is a likelihood of surface flows and consequential public health risks to property owners and their neighbours. In these areas, community based disposal schemes offer the best public health and environmental protection. At present, Dunsandel is the only township in this category that does not have a community based wastewater disposal scheme.

In other areas the very free draining soils create a hazard of groundwater contamination. On-site systems appear to operate very well but locally groundwater sources risk contamination from nitrates and possibly faecal bacteria. At present on-site systems are not thought to be causing groundwater contamination, although Council are planning to monitor water quality at Darfield and Kirwee. Table C.1 details the issues for wastewater disposal in Selwyn district.



Table C.1 Issues for Wastewater Disposal in Selwyn District

Township	Key Issues	Adequacy		
		Short tern	Long term	
Darfield	Large township with possible groundwater contamination issues.	Yes	Unknown	
Dunsandel	Minor existing on-site disposal problems. Community expectations.	No No		
Kirwee	Township with possible groundwater contamination issues.	Unknown	No	
Sheffield	Townships that may face future	Yes	Unknown	
Springfield	groundwater contamination issues.	Yes	Unknown	
Waddington		Yes	Unknown	
West Melton	Township with possible groundwater contamination issues. Sub-division development.	Unknown	No	

#### C2.1.1 Darfield and Kirwee Communities

In early 2004 MWH Consultants completed a study on wastewater servicing options for Darfield and Kirwee. The review concluded for Darfield that:

- There are no strong compelling reasons for a community sewerage scheme
- On-site septic tanks with discharge to soakage pits is the preferred option
- Global resource consenting should be applied for each township

The review concluded for Kirwee that:

- Provided that there was a community water supply to all residents, there was no public health reason for changing the present on-site systems
- That there was a greater impact on groundwater and microbiological contamination than for Darfield
- There was no clear answer as in the case of Darfield but their initial preference would be to retain the present system

With Environment Canterbury requiring more stringent on-site wastewater performance than the MWH report may have anticipated further reviews are being investigated. Details of Investigation funding for Darfield is detailed in Table C.2 below.

**Table C.2 Darfield Investigation Expenditure Requirements** 

Do avissom onto	Projected Expenditure									
Requirements	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Water Testing in Plume	7500	7500	7500	7500	7500	7500	7500	7500	5000	5000
Policy formation	7500									
Global Resource Consent	30,000	50000								
Consent Monitoring		1500	1500	1500	1500	1500	1500	1500	1500	1500
Total	45,000	59,000	9,000	9,000	9,000	9,000	9,000	9,000	6,500	6,500



#### C2.2 Private Wastewater Systems

There are very few private wastewater disposal schemes in Selwyn district. Those identified are owned by government institutions and so have good operational procedures in place to ensure compliance with resource consent conditions. There are no major issues regarding these wastewater disposal practices.

#### C3 Councils Role

Council will play a role in the development of wastewater disposal schemes for the areas not currently serviced by a Council scheme. They will monitor the public heath issues for these settlements and also monitor community requirements and expectations (IP C1). They will provide advice and expertise and act as facilitator as required, to help these communities achieved their desired outcomes.

Monitoring the public heath issues for those settlements not currently serviced by a Council scheme will be carried out initially in conjunction with Community and Public Health and the Regional Council.

### C4 Matters for Consideration

There are no matters that are required for consideration.

## C5 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table C.3 - Improvement Plan

Improvement Number	Description	Time Table
C1	Monitor the public heath issues for settlements not serviced by a community wastewater scheme	2006/07 onward





### D ASSET VALUATIONS

#### D1 Introduction

In 1991 following local body amalgamation, all Councils in New Zealand recorded assets and began depreciating them for the first time. The assets recorded included land and buildings, water and waste reticulation networks, treatment plants and pumping stations, and roading assets. Subsequently SDC carried out their utilities valuation based on the best information available. In many cases this was minimal, resulting in "global best guess" estimates being made.

Since then, much more accurate, detailed and reliable information on assets has been collected, meaning that regular and more reliable valuations have take place.

Council now has improved quality of information about its assets and will, through the more comprehensive activity management plans being developed, enable staff to make better decisions about the short, medium and long term operational and financial planning management of these assets, in a way that provides the services that ratepayers require.

The most recent valuation (1 July 2005) of the treatment facilities and reticulation system was carried out by Council staff. Opus International Consultants Limited peer reviewed the valuation and provided a valuation certificate.

### D2 Fixed Assets Processes

An important interface exists between the fixed assets register and the Asset Management planning process. It involves accurately reflecting the optimised depreciation replacement costs for the asset components within the Council's financial system, and capturing the ongoing renewal, acquisition and disposal of assets.

Assets are recorded by asset type in the Council fixed asset register. The asset is recorded at "component" level in the Hansen database. An asset is initially recorded at cost with the constructed asset including direct materials and labour. The total cost of an asset includes but is not limited to

- Survey costs
- The cost of obtaining resource consent
- Site preparation
- Physical installation costs
- Architectural and Engineering fees (design and contract supervision)
- Commissioning

The cost does not include:

- Feasibility costs
- Options evaluation costs



Asset costs are initially recorded in the capital expenditure ledger, for the initial aggregation of costs and Annual Plan reporting. The balance in this ledger represents the amount of work in progress at any given time.

On a yearly basis, the value of completed assets or completed stages of major assets are to be transferred out of work in progress into the fixed asset register. The transfer is driven by the Certificate of Practical Completion and 224 Certificate in relation to subdivisions. The value of the assets is broken down into asset type.

Any significant subsequent expenditure after the initial recording of an asset can be capitalised under two conditions. These are:

- It is probable that the expenditure will result in a higher Level of Service, or increase the useful life over the initial expected Level of Service or useful life.
- The expenditure was necessary to obtain the previously expected Level of Service or useful life, and would have been considered part of the initial costs, but for period of expenditure.

#### D3 Vested Assets

The Council receives assets that are vested in it, but there has been no direct exchange of funds. In the case of infrastructural assets, the value of exchange is deemed to be at the current valuation at time of issue of the 224 Certificate. For all donated and subsidised assets, the initial value recorded is the current valuation value at the date of acquisition.

#### D4 2005 Valuation Details

The valuation procedure for the 2005 valuation are detailed in Table D.1 below

Table D.1 - Valuation Explanation

Description	Details
Date Completed	October 2005
Undertaken by	OPUS International Consultants Ltd
Standard Compliant with	Accounting Standard FRS - 3
Valid for Period Ending	1 <sup>st</sup> July 2005
Valuation Approach	Replacement Cost Basis
Confidence Levels	Reliable for ORC (Quantity, Cost & Value)
	Reliable for ODRC (Quantity, Cost & Value)
Method of Depreciation	Straight line depreciation, with some adjustment for condition. Residual value = 0%
Date of next Valuation	1 <sup>st</sup> July 2008

It is intended that the two fields essential for a valuation (expected life and replacement unit rate) will be maintained by EDS as part of updating Hansen with quality assurance carried out by SDC Asset Management Department. This will allow a valuation to be carried out quickly and easily at any date following review of the unit rates.

### D5 Asset Register

To enable valuations to be carried out in an efficient manner all reticulation and facilities attributes are stored in the Hansen Asset register (with the exception of water race facilities and drains which



are to be completed in 2006). An enhanced valuation process is required to reduce the time and associated costs associated with the valuation.

### D6 Matters for consideration

There are no matters that are required for consideration.

## D7 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table D.2 - Improvement Plan

Improvement Number	Description	Time Table
D1	D1 An enhanced valuation process is required to reduce the time and associated costs associated with the valuation	





## E MAINTENANCE AND OPERATING ISSUES

#### E1 Introduction

The council is responsible for 12 Wastewater schemes. Total operating costs are 1.3m in 2006/07 rising to \$1.7m in 2016/17. Details of the individual Council owned schemes are provided in the supplementary section of this plan

### E2 Operation and Maintenance Management Approach

#### E2.1 Objectives

The objective of maintenance and operational strategies is to maintain existing assets to:

- Achieve their service potential through efficient operation
- Achieve customer levels of service
- Achieve health and safety standards
- Reduce Council's exposure to risk due to unforeseen failure of assets

#### **E2.2** Introduction

#### **E2.2.1** Planned and Unplanned Maintenance

The operations and maintenance expenditure for assets within Selwyn District for period 2006/2016 is estimated at \$14.8m. It is considered that efficiencies in the day-to-day activities could be identified and implemented to lower the overall lifecycle cost. Selwyn District Council is committed to optimising the operation, maintenance and management of these assets.

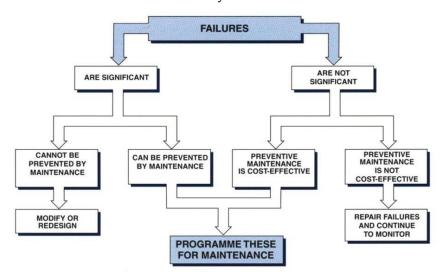
Maintenance work is defined as "All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal". Maintenance strategies which apply to Council owned assets are classed as "Asset Strategies" and are divided into:

- Unplanned Maintenance strategies includes all reactive maintenance such as repairs and modifications usually following a reported fault or failure by the public.
- Planned Maintenance strategies includes Preventive Maintenance, Servicing and Condition
  Monitoring. Planned Maintenance is usually carried out at a given frequency either at fixed
  intervals or 'on condition' to preserve the required levels of service at a minimum cost. On
  Condition means that once an asset has degraded to a certain condition (detected through
  condition monitoring) a decision as to the most appropriate maintenance must be made (this
  does not mean once an asset has failed).

The process for the identification of whether planned maintenance strategies will be effective for an individual asset is as per the chart below.



**Table E.1 Planned Maintenance Analysis Process** 



All existing and new strategies will be reviewed and analysed periodically and any findings recorded in this plan.

### **E2.2.2** Reliability Centred Maintenance Approach

A recent development in maintenance planning is the Reliability Centred Maintenance approach which can be very effective for plant/equipment assets but not so for reticulation assets. This approach is implemented by asking the following questions about the system/asset under review:

- What are the functions and associated performance standards of the asset in its present operating context?
- In what ways does it fail to fulfil its functions?
- What causes each functional failure?
- What happens when each failure occurs?
- In what way does each failure matter?
- What can be done to predict or prevent each failure?
- What should be done if a suitable proactive task cannot be found?

Selwyn District Council is aware of this trend in maintenance planning and intends to investigate the appropriateness of this approach for facilities (treatment facilities, pump stations, SCADA). (IP E1)

### **E2.3** Level of Service Delivery Strategies

Council has a number of strategies to achieve the objectives detailed in Section E2.1 and are detailed in Table E.2 and Table E.3 below.



# Table E.2 Level of Service Delivery

Existing effectiveness	1 = Very Good (Industry Standard)	2 = Good	3 = Moderate	4 =Poor	5 = Very Poor

No	Strategy	Description	Existing Effectiveness	Strategies to Improve Effectiveness	How Effectiveness is to be Monitored
1	Alternative Technologies	Alternative technologies are considered as appropriate.	1	Monitor market equipment available	
2	Approved Materials	Only approved materials shall be used in the water supply to ensure the quality and longevity of the asset.	3	List approved materials and complete Code of practice	
3	Energy Efficiency	Energy savings and management carried out in a logical manner for the facilities	4	Efficiency investigations to be instigated in 2006/07	Energy consumption
4	Health and Safety Audits	Audits undertaken randomly to ensure all work completed by Council and Contractor staff complies with the Health and Safety in Employment Act and Traffic Management Regulations	4	Enforcement of separate tools for water and wastewater	Regular inspection
5	Infiltration Detection	To proactively detect and repair infiltration within the wastewater schemes.	5	Implementation of EDS /Asset agreement that will define infiltration strategy	
6	Monitoring Planned vs Unplanned Maintenance	The mix of Planned vs Unplanned Maintenance will be analysed periodically to allow optimising of the activities	4	Use of Hansen system for reporting on trends	
7	Monitoring Planned and Unplanned Maintenance	Repairs and maintenance carried out to the required standards	4	Additional inspection of repairs (when they are occurring) 1-5% random inspection of all monthly maintenance claimed	Quarterly reporting by EDS
8	Network Modelling	Network Modelling is carried out to ensure renewal and capital works are programmed appropriately	1-4	Calibration of models. Updating models as appropriate. Ensuring GIS data is correct	Annual reporting by EDS
9	Supervision of Facilities	Supervision of Facilities to ensure these buildings and critical assets are maintained appropriately	3	Increase site visits by SDC staff (minimum of 2 inspection of facilities per annum)	Annual reports from EDS to Assets and detailed in the Hansen system

### Wastewater Activity Management Plan

No	Strategy	Description	Existing Effectiveness	Strategies to Improve Effectiveness	How Effectiveness is to be Monitored
10	SCADA	SCADA will be utilised to assist in alarm monitoring/response, controlling operations and increase the knowledge of the asset operation therefore enabling efficiencies to be introduced.	2	Additional exception reporting	
11	Effluent Quality	Effluent quality to comply with resource consent requirements	2	Instruments to monitor critical values i.e. Dissolved oxygen	Reporting via SCADA on exceptions, quarterly and annually by EDS



## Table E.3 Overview of Asset Strategies (Planned and Unplanned Maintenance)

Existing effectiveness	1 = Very Good (Industry Standard)	2 = Good	3 = Moderate	4 =Poor	5 = Very Poor

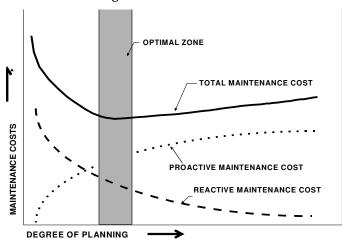
No	ASSET	ACTIVITY	FREQUENCY	COMMENTS	Existing Effectiveness	Strategies to Improve Effectiveness	How Effectiveness be Monitored
1	Treatment Plants	Inspection	Daily to Weekly	Or as appropriate	1		
2	Pump Stations	Inspection	Weekly	Formal programme exists (in maintenance contract) for the cleaning and internal inspection	1	Ensuring compliance of maintenance contract provisions	Annual reporting by EDS to Asset Management
3	Pumps	Tested	Yearly		1		
4	SCADA	Inspection by technician	Yearly		1		
5	Flow meters (large)	Testing	3-5 years	Mag flows tested by manufacture representative	5	Engage manufactures representative to test for % error	
6	Safe Working Load on Lifting Gear	Certification & Inspection	Yearly		4	Inspection	
7	Switchboards	Inspection by Electrician	Yearly		4	Inspection by Electrical contractor	
8	Generators and standby diesel pumps	Inspection	Monthly	Or as appropriate	1		
9	Programmable systems (VFD etc)	Testing	Yearly		5	Have backup copy of programmes	



### E2.4 Optimising Planned and Unplanned Maintenance

The key element of asset management planning is determining the most cost-effective blend of Planned and Unplanned Maintenance as illustrated<sup>2</sup> in Table E.4 below.

**Table E.4 Balancing Proactive and Reactive Maintenance** 



#### **E2.5** Present Performance

There is currently insufficient data to trend complaints or maintenance performance, however, it is intended that following the completion of the Hansen system as mentioned in E2.9.1 this will be included in subsequent reviews of this Plan.

#### **E2.6** Treatment Plant Operation

The complexity of the Rolleston wastewater plants and their associated resource consent compliance is a challenge to the plant operators. Significant Council engineering staff input has and will continue to be required to ensure that compliance requirements are meet and the treatment plants operate efficiently.

Considering the extent of Council engineering resources that has and will be required to assist the efficient operation of treatment plants it is considered that a review of the Council existing policy on out sourcing the maintenance of treatment plants (both water and wastewater) is required. This would ascertain the most appropriate method for the future delivery of the required levels of service. (IP E2)

## E2.7 Operations and Maintenance Standards, Manuals and Procedures

### E2.7.1 Standards and Regulations

The assets are operated to comply with:

- All relevant Acts, Regulations, Bylaws and Statutory plans
- This Activity Management Plan

-

<sup>&</sup>lt;sup>2</sup> Figure 3.8.2 of the International Infrastructure Management Manual



- Operations and maintenance manuals, procedures and defined processes
- Contract 849 Utilities Operations and Maintenance
- Manufacturer's recommendations
- Industry Best practices
- Operations Manuals and Procedures

Formal procedure manuals for treatment plants and pump stations are required to provide Council's Engineers and Contractors with documented operations, maintenance and emergency procedures required for Council's wastewater assets.

To maintain the appropriate level of service the operations and maintenance manuals should thoroughly cover the following:

- 1. Full integration with Levels of Service, Activity Management Plans and Maintenance Contracts
- 2. Contain the major elements of Risk Plans , Demand requirements, Renewals, Standards & Policies, Health and Safety, Environmental and Operational Plans
- 3. Be updated on an ongoing basis (minimum of every three years) with input from a representative group of customers
- 4. Fully accessible to both Council officers and maintenance contractors (electronic controlled copies)

An assessment of Councils existing operations manuals and procedures was carried out by Council staff. With reference to the four items noted above the assessment summary is provided in Table E.5 below.

Table E.5 Assessment of Existing Operations Manuals and Procedures

Scheme	Very Good	Good	Moderate	Poor	Not Available
Arthur's Pass			X		
Castle Hill					×
Doyleston			X		
Lake Coleridge		х			
Leeston			X		
Lincoln				Х	
Prebbleton			X		
Rolleston			X		
Selwyn Huts			X		
Southbridge		Х			
Springston			X		
Tai Tapu			X		

This assessment has indicated that additional resources are required for update and ongoing revision of operations and procedures. To support Council's operational strategies, levels of service and assist with Council's succession planning by capturing institutional knowledge a comprehensive Operation Manual will be produced for each of the wastewater schemes. (IP E3).



### **E2.8** Management of Council Wastewater Schemes

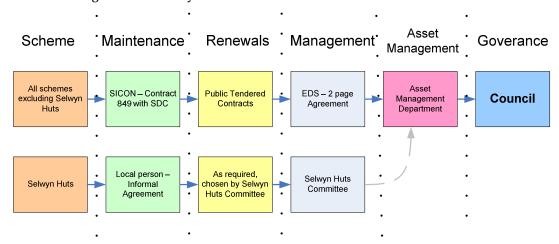
#### E2.8.1 Management

The management responsibilities and hierarchy of Council wastewater schemes are detailed in Table E.6 and Table E.7 below.

**Table E.6 Management Responsibilities** 

	Responsible to	Responsibility via	Responsible for	Reports to
Asset Management	CEO	Legislation and policies	Compliance with community outcomes	Council
EDS	Board of Directors	Written agreement (brief)	Compliance with levels of service	EDS Board of Directors
Maintenance Contractor	Asset Management via EDS	Maintenance Contract (No 849)	Compliance with requirements of maintenance contract	NA

Table E.7 Management Hierarchy of Councils Wastewater Schemes



## **E2.9** Maintenance Contracts and Agreements

#### **E2.9.1** Councils Maintenance Contract

A 5 year maintenance contract (with the ability for 3 additional yearly extensions) was awarded to SICON in June 2004 following normal Council tendering process. Approximately 50% of the contract price is for dayworks. The annual value of the awarded contract is \$1.44 million. This contract covers all wastewater systems (with exception of Selwyn Huts), water races and water supplies (with the exception of Malvern Hills RWS and Selwyn Huts).

Analysis by EDS³ in August 2005 showed that the maintenance contractor had failed to complete 30% of the planned maintenance required to be undertaken in the 2004/05 year. EDS also noted that reporting requirements were inconsistent and that the contract provided a significant challenge to the contractor.

The present contract has a high percentage of dayworks that has the following effects:

<sup>&</sup>lt;sup>3</sup> Report by Manager EDS on 1<sup>st</sup> August 2005



- No drive for efficiencies by maintenance contractor
- Council has significantly reduced control on expenditure as it has minimal control on cost of repairs. Implementation of the Hansen system, collating repairs etc into categories over a minimum of 12 months will assist Council in determining what efficiencies can be made to contract structure.

At the same time review of the maintenance contract is required to ensure that future maintenance contracts will allow increased control on expenditure (IP E4)

#### **E2.9.2** Selwyn Huts Agreement

Generally Allied Water Systems are engaged on as "as needed" basis by the Selwyn Huts Management Committee to undertake repairs and maintenance. No formal agreement is understood to exist. SICON has an agreement with the Management Committee to "overview" the operation of the treatment and disposal due to the requirements of the discharge consent to have a "competent person".

While resource consent monitoring data is forwarded to Council on a regular basis there is no other data transferred back to Asset Management. Asset condition, renewals and standard of installation remain unknown. There is no information transfer from Selwyn Huts Management Committee to Asset Management regarding work history, facilities and reticulation renewals. The effect of minimal transfer of knowledge may significantly hinder the future operation and maintenance of the scheme when existing key personnel retire, leave or the maintenance contractor is replaced. Agreement between maintenance contractor and Selwyn Huts Management Committee for the management and operation is therefore required. (IP E5)

#### **E2.9.3** Electricity Supply Contract

Power to all Councils services is supplied via Orion. Selwyn District Council is included with Christchurch City Councils electricity supply contract that has been renewed from 31 January 2006.

#### **E2.10** Maintenance Supervision

There is a two page agreement between the Asset Management Department and EDS for maintenance, renewals and capital works. This agreement was a requirement for Transfund purposes and not written specifically for utilities maintenance or asset management support requirements.

Asst Management considers that there has been a low level of performance by EDS in the area of:

- Maintenance supervision
- Scheme over viewing, with provision of recommendations to Asset Management. This is
  vital as EDS is the engineer to the contract, they do not have the ability to make any decisions
  outside the day-to-day maintenance contract management without Asset Management
  approval. Thus the wider Asset Management view will take into account longer term issues
  including consent compliance and capacity.
- Performance and auditing of individual schemes in the area of infiltration and trending of data i.e. acoustic and electrical yearly surveys (to ascertain when the most appropriate time for refurbishment/replacement)

To overcome the difficulties noted above a detailed agreement is required that indicates the responsibilities and requirements of EDS and the Asset Management Department (IP E6). The agreement should include:



- Contractor and Level of Service Performance Reporting Requirements
- Financial Performance Reviewing
- Targets for compliance with Levels of Service through scheme operation
- Data Quality Standards for Asset Register and Maintenance History
- Clear definition of roles and responsibilities

## E3 Scheme Management Improvement Requirements

To ensure compliance with levels of service, it is essential that EDS and the maintenance contractors (SICON) comply with maintenance contracts and agreements. The implementation of the following is therefore required:

- Clarification of agreement between EDS and Asset Management (as per E2.9.1 above)
- Completion of the implementation of Hansen to record all lifecycle costs and activities for all assets
- Integration with Council customer complaints system to track a request for service and the subsequent provision of service by the Contractor or Council staff to allow measurement of Levels of Service
- Reporting for Asset Management decision making
- Integration with Council Projects Database to allow tracking of completion of capital works and updating of asset register

The completion of the implementation of Hansen will establish Selwyn District Council processes at industry best practice. This will ensure asset register, contract management and asset management processes are appropriate, robust, auditable and well documented for quality assurance (to be completed by June 2006). This will enable the following to occur:

- An accurate Asset Register updated on a timely basis with quality assurance processes and verifiable audit tracking of changes to existing assets
- Integration with the Maintenance Contract for:
  - Cost Claim Processing
  - Appropriate Key Performance Indicator measurement
  - Management of Planned Maintenance
  - Effective Operational and Failure Analysis Data Capture
  - Asset Validation
  - Audit Recording by Contractor and Council staff
  - Contract Reporting

## E4 Criticality

Criticality is determined by considering if an asset is in a situation where:

- The likelihood of failure is high
- The consequences of the asset failing is very high i.e. pump station failing thus causing untreated wastewater to be spilled



The criticality of Councils wastewater schemes have been assessed using Council Staff knowledge. This assessment does not fully consider the consequences of a failure of a supply on Council's Objectives, Community Outcomes, Policies and Service Levels. The assessment needs to consider the effects of failure (include strategic assets, institutions and the environment) over a wide range of failure modes. This will allow the Council to:

- Compare assets for business criticality
- Focus capital expenditure on those assets whose failure have the greatest impact on the Council
- Give robust conclusions that are based on a risk approach that will aid the prioritisation of the renewal programme

Table E.8 below details an initial assessment of the critical assets within wastewater schemes.

**Table E.8 Critical Assets within Wastewater Schemes** 

System	Asset	Location	Situation	
Arthur's Pass	Pumping facility within treatment Plant	At treatment plant	Failure of pumping will cause sewer overflows with associated environmental effects	
Castle Hill	Gravity main	SH 73	Located under SH73	
Doyleston	Pump station	Leeston Rd	Serves all the community	
	Rising main	Leeston Rd	Singe main 2.9km long serving all the community	
Lake Coleridge	Pump station	At treatment plant	Failure of pump station will cause overflow to power station tailrace	
Leeston	Pump Stations	Station and Lake Roads	Failure of pump stations will cause overflow to local waterways	
Lincoln	Barker St Pump Station	Barker St	Majority of wastewater for township passes through this pump station	
	Marion Pl pump station	Marion Pl	Majority of wastewater for township passes through this pump station	
Prebbleton	Main Pump Station	Springs Rd	No standby generator and services the Prebbleton community	
	Rising main to Christchurch	Springs and Shands Roads	Single main over 2.8 Km long serving the Prebbleton community	
	Main Pump Station	Springs Rd	No standby generator and services the Prebbleton community	
Rolleston	Rising main from Jones Rd pump station	Under SH 1 and main trunk rail line	Singe main serving large industrial area	
Southbridge	Rising main	Between Southbridge and Leeston	Singe main 17km long serving all the community	
Springston	Main Pump Station	Leeston Rd	No standby generator and services the Springston community	
	Rising main to Christchurch	Springs and Shands Roads	Single main over 19 Km long serving the Springston community	
Tai Tapu	Main Pump Station	School Rd	No standby generator and services the Tai Tapu community	
	Rising main to Christchurch	Springs and Shands Roads	Single main over 8.6 Km long serving the Tai Tapu community	
SCADA	Plant and pump station monitoring	At treatment plants, pump stations and base station	No warning of impending overflows etc	



Additional risk assessments are required to determine criticality within individual schemes and subsequent update ranking in Hansen (IP E7).

## E5 Scheme Monitoring/SCADA

#### E5.1 Background

Council has operated a "Datran" SCADA (Supervisory Control and Data Acquisition software) since 1993. SCADA is used to control the functions of plant items and pump stations along with alarm monitoring for a majority of facilities within the district (22 wastewater schemes, 1 water race, 10 wastewater and 1 stock effluent dump site). Table E.9 details the over view of the SCADA system for the individual out stations<sup>4</sup>. SCADA is used for:

- Trending of historical (data is available back to 1993)
- Alarm monitoring (operators informed of alarms via mobile phones)

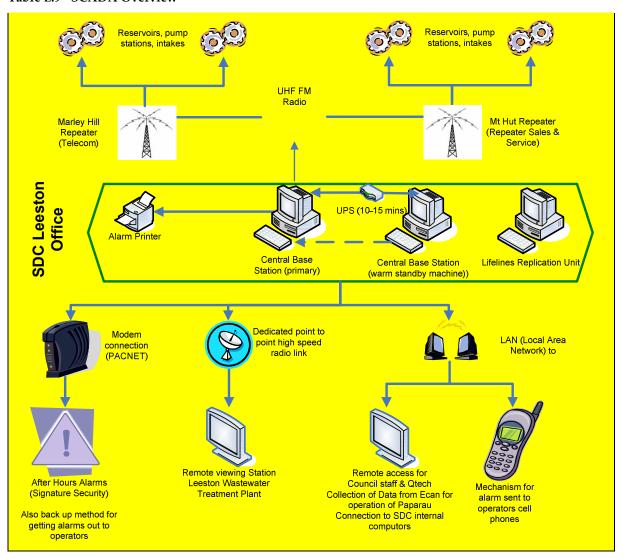
Monitoring of water and wastewater schemes by the Councils SCADA system has grown to the point that without current monitoring systems the existing Levels of Service would not be sustainable. The ability for Council to ascertain faults (reported via the SCADA) and instigate repairs without affecting the service to the consumer has significantly increased efficiency and reliability of the wastewater schemes.

The SCADA system is a critical system in Councils operation and service delivery.

<sup>&</sup>lt;sup>4</sup> DATRAN – What does it do for SDC by QTech October 2005



Table E.9 - SCADA Overview



### E5.2 Future Strategy for Councils SCADA

Council's strategy for the ongoing use of SCADA is:

- To be at the forefront of SCADA by implementing new beneficial technologies as they become available
- Increase use of reporting functions
- Increase availability of information to maintenance operators in a format that will enable increased efficiencies in operation and management
- Maintain system at a high level to ensure system reliability and ongoing reporting ability

To enable the above development to occur, annual targeted funding (spread over all participating schemes) of \$6,000 has been allocated in the maintenance budgets.



Table E.10 Facilities Monitored by SCADA and Primary Functions

Site Name	Phase fail delay	Pump runs and faults	Pump Drive speed	Wet Well Level and high alarm	Emergency Level Float	Outflow from Magflow	Outflow totaliser	Inflow calculated from Level	Water Supply Pressure and alarms	Groundwater level and alarm	Generator run (and fault)	Dissolved Oxygen
Doyleston	Υ	Υ		Υ	Υ							
Leeston - Lake Rd	Υ	Υ		Υ	Υ							
Leeston - S T P	Υ	Υ				Υ	Υ					Υ
Leeston - Station St	Υ	Υ		Υ	Υ					Υ		
Lincoln - Barker St	Υ	Υ	Υ	Υ	Υ	Υ	Υ					
Lincoln - Edward St	Υ	Υ		Υ	Υ	Υ	Υ	Υ	Υ	Υ		
Lincoln - Hazeldean Drive	Υ	Υ		Υ	Υ	Υ	Υ	Υ	Υ	Υ		
Lincoln - Lincolndale	Υ	Υ		Υ	Υ	Y	Υ	Υ	Υ	Υ		
Lincoln - Roblyn Pl	Υ	Υ			Υ							
Lincoln - S T P	Υ	Υ										
Lincoln - Marion Pl	Υ	Υ	Υ	Υ	Υ	Υ	Υ		Υ		Υ	
Lincoln - Mill Stream	Υ	Υ		Υ	Υ							
Lincoln - Outlet Pump Station	Υ	Υ				Υ	Υ					Υ
Lincoln - Ryelands	Υ	Υ		Υ	Υ	Υ	Υ		Υ			
Prebbleton - Toswill Rd	Υ	Υ		Υ	Υ							
Prebbleton - Birches Rd	Υ	Υ		Υ	Υ	Υ	Υ	Υ	Υ			
Prebbleton - Springs Rd	Υ	Υ		Υ	Υ	Υ	Υ					
Prebbleton - The Elms	Υ	Υ		Υ	Υ	Υ	Υ		Υ			
Rolleston - STP	Υ	Υ	Υ	Υ	Υ	Υ	Υ					Υ
Rolleston - Goulds Rd	Υ	Υ		Y	Υ	Υ	Υ		Υ			
Rolleston - Jones Rd	Υ	Υ		Y	Υ	Υ	Υ				Υ	
Southbridge	Υ	Υ	Υ	Y	Υ	Υ	Υ	Υ		Υ		
Springston	Υ	Υ		Y	Υ	Υ	Υ					
Tai Tapu	Υ	Υ		Υ	Υ	Υ	Υ					

### E5.3 After Hours Alarms

After hours alarm monitoring and subsequent call out is via Signature Security. Difficulties have occurred with the after hours procedure and these can be mainly attributed to high staff turnover at Signature Security. The present notification of alarms to Signature Security is via a printer located at their control centre. It is proposed to implement changes to the SCADA to enable electronic transfer of alarms (via emails) to Signature Security. This will then enable alarms to be logged directly into their monitoring system to minimise "lost" alarms.



### **E6** Customer Service System

To assist reactive maintenance Council also deploys a Council designed Customer Service System referred to as the PEC System (Public Enquires & Concerns). The system tracks customer complaints and is available during normal working hours with a "supplementary after hours" system for receiving and referring complaints. The system is built using Microsoft Access. Alternative Customer Services Systems are currently being investigated as the PEC System has limitations in regard to:

- Reporting and operation during after hour's periods
- Tracking of complaints
- Compliance Reporting on Service Levels
- General operation of the data base

It is the view of the Water Asset Manager that the existing data base has significant deficiencies, especially with respect to integration of complaints/requests into Hansen. A new system is therefore considered to be required. This will provide Council with the reporting and complaints tracking to ensure compliance with the community outcomes and the associated levels of service.

## E7 Lifelines Responsibility

#### E7.1.1 Introduction

The Civil Defence Emergency Management (CDEM) Act 2002 requires Local Authorities to coordinate Plans, Programmes and Activities related to CDEM across the areas of Risk Reduction, Readiness, Response and Recovery. It also encourages cooperation and joint action within regional groups. The following indicates the status of the wastewater schemes in the areas of Risk Reduction, Readiness, Response and Recovery.

Table E.11 - Risk Reduction, Readiness, Response and Recovery Status

Activities required	Description	Include	Wastewater schemes Systems Status	
Risk reduction	Identifying hazards, describing risks,	Identify Hazards		
	and taking actions to reduce the probability or consequences of	Describe Risks		
	potential events.	Reduction or Consequences	To be considered in	
Readiness	Planning and preparation required to	Planning	the Emergency Management	
	equip agencies and communities to respond and recover.	Preparation	Report programmed for 2005/06	
Response	Addressing immediate problems after an emergency	Addressing immediate problems	undertaken by Council staff	
Recovery	Addressing the long-term rehabilitation of the community	Addressing long term rehabilitation of Community		

### E8 Consents Monitoring Compliance

Whilst Council resource consent monitoring compliance is comprehensive across the schemes treatment and disposal, several improvements have been identified that will enhance the quality and effectiveness of both the resource consent monitoring programmes. Improvements include:



- Implement integrated data management system for compliance monitoring data for both the microbial and chemical programmes and improve the 'quality assurance' systems to ensure consistency
- Implement a regular audit of the monitoring programme to ensure procedures are being carried out correctly
- In addition it has been identified that staff must be correctly trained to ensure that errors in sampling are not made. (IP E8)

## E9 Energy Efficiency

As part of the District Wide assessment of energy efficiency the Council has contracted an electrical consultant with international and local experience in energy management to investigate energy efficiency within Councils facilities.

Energy audits are to be undertaken in the 2005/06 financial year with funding provided for 2006/07 year for projects that may be required following the energy audit.

## E10 Operating and Maintenance Cost

Financial projections for the operations and maintenance of the wastewater schemes are shown in the following tables. The costs do not include loans or depreciation.

#### E10.1 Accuracy of Operating and Maintenance Costs

These totals have been derived by a detailed analysis of individual maintenance items within the general ledger cost centres. Due to the uncertainties in estimating long term expenditure there is a margin of error of -5% to +10% within the first 3 years which increase to -5% to +30% in the 7-10 year period.

#### E11 Maintenance Cost Increases

Where population increases are expected to occur, the 10 year maintenance costs have been increased.



Table E.12 – Summary of Estimated Wastewater Schemes Operating and maintenance Costs – 2016/17

	Actual				Current	<b>Estimates</b>										
	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Arthurs Pass	1	1	1	5	9	6	6	7	7	7	7	7	7	7	7	6
Castle Hill	10	6	8	14	13	17	17	19	19	19	19	20	20	20	20	20
Coleridge	15	15	14	18	19	29	28	29	29	30	31	31	31	31	31	31
Doyleston	11	15	5	12	16	19	22	24	25	27	29	30	32	34	36	37
Leeston	58	73	96	104	117	99	100	110	110	109	111	112	113	113	114	114
Lincoln	148	183	128	201	206	296	294	312	315	317	330	343	358	373	386	401
Prebbleton	31	46	43	54	103	95	92	105	108	110	113	116	120	124	127	130
Rolleston	99	142	229	288	339	273	613	632	655	662	677	691	708	723	818	843
Springston	26	12	10	21	12	22	23	29	30	30	30	32	33	34	34	36
Southbridge					10	37	26	30	32	34	36	38	39	40	42	44
Tai Tapu	14	13	19	20	25	20	21	24	25	26	28	30	31	32	33	34
Claremont						27	27	27	27	27	27	27	27	27	27	27
	413	507	553	738	869	940	1268	1347	1381	1398	1436	1474	1518	1557	1674	1723

Note: Where population increases are known to occur this has been factored into the costs (see Section E11).



2000 1800 1400 1200 1000 800 400 200

Table E.13 – Total Estimated Maintenance and Operating Costs – 2000/01 – 2015/16

Table E.14 details the budgets for the Individual schemes for 2006/07 and 2015/16 financial years. This indicates that the most significant increase in costs is associated with the Rolleston scheme due to the significant increase in population for this community.

Year 2006/07 Year 2016/17 Claremont. Arthurs Pass, Castle Hill, 26,500 6 396 Coleridge, Claremont Castle Hill, 20,184 17 159 27,927 26,500 Tai Tapu, 21,032 Doyleston, thurs Pass, Southbridge Coleridge, 30,570 22,377 6.472 26,184 Tai T**sput Adroo**gs Leeston, 43.542 Doyleston, 37,267 Springston 99.581 Springston Leeston, 114,087 22,789 35,560 Lincoln, 400,708 Lincoln, 293,869 Rolleston Prehbleton, 843,423 Rolleston, Prebbleton. 130.406 612,749 91,538

Table E.14 Comparison of Budget Maintenance Costs for 2006/07 and 2015/16

## **E12** Maintenance Expenditure Reporting

Monthly and yearly expenditure reporting is presented to Council staff, Council representatives and township committees in an "accounting style" that does not clearly indicate current concerns, trends and are not readily understood. It is considered that a financial reporting database (associated with NCS) to track monthly and yearly variances needs to be implemented. (IP E9)

### **E13** Matters for Consideration

Issues relating to Maintenance and Operating Issues of all the Wastewater Schemes are:



- Lack of ongoing summarising and interpreting monitoring data and financial budgets
- Significant Council engineering staff input into the operation of treatment plants has and will continue to be required to ensure that compliance requirements are meet and treatment plants operate efficiently
- The PEC System has significant flaws that a new customer interface system is required. This will provide Council with the reporting and complaints tracking to ensure compliance with the Community outcomes and the associated levels of service.

## E14 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table E.15 - Improvement Plan

Improvement Number	Description	Time Table
E1	Investigate the Reliability Centred Maintenance approach for facilities (reservoirs, treatment facilities, pump stations,	2006/07
E2	A review of Council policy on out sourcing the maintenance of treatment plants (both water and wastewater) is required to ascertain the most appropriate method for delivery of the required levels of service.	2006/07
E3	Comprehensive Operation Manuals will be produced for the wastewater networks and facilities	2006/09
E4	A review of the maintenance contract to ensure that any new contract will allow increased control on expenditure	2006/07
E5	Agreement between maintenance contractor and Selwyn Huts Management Committee for the management and operation. The new agreement to include performance measures and reporting procedures to ensure the communities' outcomes can be shown to be achieved	2006
E6	Detailed agreement is required that indicates the responsibilities and requirements of EDS and the Asset Management Department	2006/07
E7	Additional investigations required on criticality and update ranking in Hansen system	2006/08
E8	Staff and Contractor training programme (sampling)	2006/07 onward
E9	Financial reporting database (associated with NCS) to track monthly and yearly variances be implemented	2006/07





# F DEMAND, DEMAND MANAGEMENT AND NEW CAPITAL REQUIREMENTS

## F1 Introduction and Background

Demand forecasting is important as it gives an understanding of the changing requirements for the service provided and related costs. There are a number of issues that influence demand forecasting and the associated capital works. These issues include:

- Local population trends
- Accuracy of predicted future populations
- Local economic trends
- Changing technology
- Changing legislative requirements i.e. consent conditions

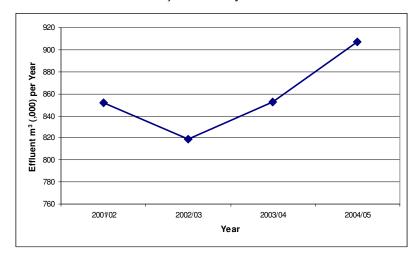
This section discusses these issues and identifies demand management strategies.

### F2 Wastewater Flows

#### F2.1 Communities Wastewater Flows

The actual yearly wastewater flows (2001/02 - 2004/05) for reticulated communities within the district is shown in Table F.1.

Table F.1 - Historic and Projected Yearly Wastewater Flows





## F3 Population Projections

#### F3.1 Background

Population forecasts for all towns and selected rural-residential areas were developed by Max Barber (Planning Consultant) for the Asset Management Department in late 2005. These population predictions will be considered by Council in early 2006 as the official population predictions for the period 30th June 2005 to 30th June 2016.

### F3.2 Population Predictions

The principal findings of the population predictions were:

- The resident population of Selwyn District at 30 June 2005 was 31,600. The population is projected to reach 38,300 in 2016 under the medium projection and 41,900 in 2016 under the high projection
- The current growth rate is between the medium and high projection.
- It is expected that approximately 80% of population growth over the next 11 years will be in urban areas and townships, and in rural-residential areas
- Population growth is heavily concentrated at Rolleston under both the medium and high projections. the medium and high projection data for Rolleston is as follows::
  - Medium projection population of 7,430 in 2016, compared to 3,900 in 2005.
  - High projection population of 8,530 at 2016 compared to 3900 in 2005.
  - Under each projection, Rolleston accounts for between 60% and 66% of the total growth in towns and rural-residential areas
- Given the concentration of population growth at Rolleston, all other urban areas and townships receive only modest shares of population growth over the projection period, under either the medium or high projection

The projections are subject to a number of "risk factors" that could result in population growth varying from a given projection. The risks relate primarily to when the population will be reached, rather than to the size of the population. The risk that the time period within which a projected population may be reached will be wrong is significantly reduced by the adoption of a range of population projections (achieved in the present report by the use of medium and high projections).

It is considered that the monitoring and updating of population projections in the future would be assisted by ensuring that key input data, including the rating data base (existing dwellings), building consents and subdivisions are identified by town as defined in the Proposed District Plan. (IP F1)

Table F.2 details the population predictions for communities that are served by a Council Wastewater Schemes and Table F.3 detailing where the growth will occur.



Table F.2 - Growth Projections for Communities Served by Council Wastewater Schemes for Period 2005-2016

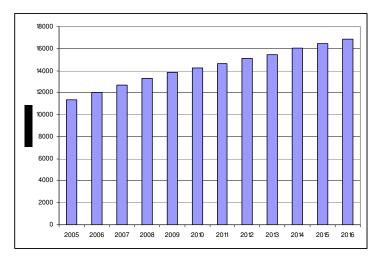
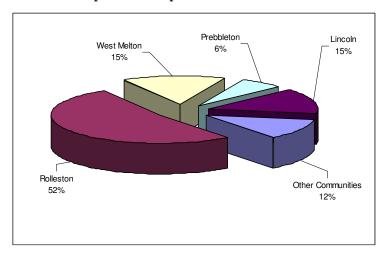


Table F.3 - Proportion of Population Increase



## F4 Economic Trends

Selwyn is one of the fastest growing districts in the South Island and is estimated to be larger than Timaru in 2026. Despite the growth, Selwyn still keeps its rural character. Of the 30,000 people living in Selwyn about a half live in small townships and villages, a third live on the larger blocks of land [1.1-20ha] that surround local villages and a fifth live on larger farms. The people of the district have a higher income, less crime and are better educated than the New Zealand average. Its proximity to Christchurch makes Selwyn an attractive place to live, work and play.

Christchurch is less than 30 minutes from most townships in Selwyn. This proximity means that Selwyn and Christchurch have a shared labour pool with more than half of Selwyn residents working in Christchurch. Local businesses frequently employ Christchurch residents especially for seasonal work. The educational industry is the most significant employer in Selwyn employing 1660 of the 7970 employees of the district. There were 2,210 businesses registered in Selwyn in 2004. In 2005 there were 565 residential building consents issued, meaning more than one and a half new



families moved into the district each day. The \$24.7 million non residential building consents issued in the last year indicate significant support for future commercial developments in Selwyn.

The three main drivers of the Selwyn economy are:

- Agriculture
- Education and research
- Developing industrial sector focussed on Rolleston

The Selwyn area has long been associated with intensive farming: dairy farms in Tai Tapu and Lincoln, arable farms in Ellesmere and Malvern and extensive high country stations in the mountains to the west. In recent years there has been extensive development of large dairy units especially on properties beside the Rakaia River. The shape of traditional farming in Selwyn has also changed with many farms closer to Christchurch now being subdivided into smaller lifestyle units and existing farms intensifying in their land use.

The Crown Research Institutes and other research organisations surrounding Lincoln University employ over 1,000 scientists. Research around Lincoln is mainly focussed on sustainable production from the land. Izone Industrial Park is a developing industrial area close to Rolleston which is growing quickly because if its proximity to Christchurch City, the airport, port and networks west and south of the city. One third of Selwyn, mainly to the west, is included in the conservation estate. As this area is less than 90 minutes from Christchurch City and International Airport its attractions are easily available to Christchurch residents and visitors.

## F5 Demand Projection and Capacity

Investigations are planned for 2006/07 to further develop the capacity matrix of wastewater schemes requirements and capacity to service the future demands.

### F6 Demand Management

The use of demand management strategies has the benefit of:

- Increasing the period before additional capital expansion or restrictions are imposed
- Complying with consenting authorities requirements
- Reducing operational and maintenance costs

Environment Canterbury as the consenting authority are requiring demand management practices to be implemented (see Section H2) as part of the requirements of the proposed Natural Resources Regional Plan (PNRRP) – WQL 45.

## F6.1 Demand Management Plan

The Demand Management Plan involves implementing strategies to reduce effluent flows and promote more efficient network operations. These strategies involve altering or repairing the asset to achieve the target. The effluent flow reduction strategies used or to be implemented (IP F2) by Council are outlined in Table F.4below:

Table F.4 – Wastewater Flow Reduction Strategies

Strategy	Description	Programme Existing or to be implermented
Infiltration Reduction	Programme to identify schemes with unacceptable levels of infiltration	To be implemented



Strategy	Description	Programme Existing or to be implermented
Replacement/ Rehabilitation Programme	The Renewal Programme is in palce to ensure assets are not utilised beyond their useful life (where the risk of unpredictable failure is greatly increased)	Existing
Codes of Practice	Enforcement of appropriate Engineering Codes of Practice to ensure all maintenance is carried out to the relevant standards	Existing
Technical Standards	Ensuring new assets are constructed to the correct standards and tested appropriately before being commissioned.	Existing
Standard Materials	The use of standard (high quality) materials.	Existing
Quality Audits	To ensure all standards above are being met	Existing
Water Conservation / Public Education	Promoting water conservation (within the household) and understanding the issues concerning the water system through public education and advertising campaigns	Existing
Property inspections	Encourage property owners to ensure compliance of Councils Bylaws and stormwater discharge requirements	Existing
New Domestic Technology	Encourage the adoption of new technologies in the home such as low flow showerheads and dual flush toilets	To be implemented

### F6.2 Future Demand Management Approach

The Council's future demand management approach will be a continuation of the effluent flow reduction strategies as note in Table F.4 above. This will be further strengthened by the hydraulic modelling that is programme for 2005-07 (noted in IP II). This will enable the infiltration reduction to be quantified and improved upon. The reporting requirements in the Levels of Service (Appendix R) will allow management the mechanisms to ensure the strategies are effective and improved upon where required. An increase in overall flow monitoring to ascertain the domestic usage will enable changes in use patterns to be reported/ acted on if required.

Investigations into the integration of wastewater treatment and disposal will occur in 2006/07 to ascertain the viability and economics of a central treatment and disposal facility which services the majority of the Council serviced communities in the plains area.

## F7 New Capital Requirements

Table F.5 details the capital requirements for wastewater for the period 2006/07 to 2015/16.

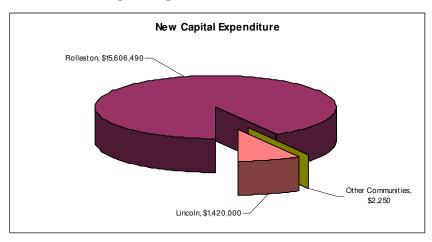
Table F.5 - Capital Requirements (in \$, 000,)

	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Arthurs Pass(Rough Creek)										
Castle Hill										
Coleridge										
Doyleston									<u>"</u>	



	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Leeston	2									
Lincoln	670				750					
Prebbleton										
Rolleston	7222	644	644	644	644			5809		
Springston										
Southbridge										
Tai Tapu										
	7893	644	644	644	1394			5809		

Table F.6 – Total Capital Requirements for Period 2006/07 to 2015/16



#### **F8** Matters for Consideration

Issues relating to demand management are:

- The quantifying and reporting on the extent of infiltration
- Increase in flow monitoring to ascertain changing domestic use pattern to ensure the demand management approach is achieved
- Continuously monitor population changes and validate current assumptions and models

### F9 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table F.7 - Improvement Plan

Improvement Number	Description	Time Table
F1	Centralised population file that includes population predictions annually updated be instigated	2006/07



Improvement Number	Description	Time Table
F2	Demand management practices be instigated with detailed plans specific to those communities who will benefit immediately that include:	
	Programme to identify schemes with unacceptable levels of infiltration	2006 onwards
	Ongoing reporting on levels of infiltration	
	Encouraging Water Conservation	
	Encourage the adoption of new technologies in the home	
F3	Investigations into the integration of wastewater treatment and disposal to ascertain the viability and economics of a central treatment and disposal facility which services the majority of the Council serviced communities in the plains area	2006/07





## G DEVELOPMENT AND FINANCIAL CONTRIBUTIONS

#### G1 Introduction and Background

Council has a Development Contribution Policy as a part of its Funding and Financial Policies within the Long Term Council Community Plan (Selwyn Community Plan - LTCCP) under section 102(4)(d) of the Local Government Act 2002 (LGA 2002). Section 198 of the LGA 2002 gives Territorial Authorities the power to require a contribution from developers. Development contributions provide Council with the method to obtain funding to provide new additional infrastructure, which is needed to support growth that occurs within the District.

#### **G2** Development Contributions Policy

## G2.1 When a Development Contribution is Required

A Development Contribution is required in relation to a development when:

- The effect of that development requires the Council to construct new or additional assets for any network infrastructure, reserves or community infrastructure; or
- The Council has to incur capital expenditure to increase the capacity of existing assets (eg
  network infrastructure, reserves and community infrastructure) to support the growth from
  development.

### G2.2 Relationship to Resource Management Act

Development contributions under the LGA 2002 are in addition to, and separate from, Financial Contributions under the Resource Management Act 1991. Council generally intends only to require over-time Development Contributions under this Development Contributions Policy and will no longer require Financial Contributions under the Resource Management Act 1991. However, Council will still have the authority to require works or services or seek cash or land contributions on new developments to avoid, remedy and mitigate the environmental effects of proposed developments through resource consent conditions or in accordance with any relevant role in the District Plan or any transitional provision under the Resource Management Act 1991.

#### **G2.3** Purpose of a Development Contributions Policy

The key purpose of the Development Contributions Policy is to ensure that growth, and those who cause the need for increased infrastructure to meet that growth, fund the infrastructure required. Development Contributions are not a tool to fund the cost of maintaining infrastructure or improving the level of service. This cost will be met from other sources e.g. targeted rates.

## **G2.4** Development Contributions for Water supplies

The methodologies of calculating financial contributions for the "Wastewater Contribution Areas" are detailed in the 2004-2014 Selwyn Community Plan.



## **G3** Matters for Consideration

There are no matters for consideration relating to Development and Financial Contributions.

## G4 Improvement Plan

No improvements have been shown to be required.



# H ENVIRONMENTAL MANAGEMENT, RESOURCE CONSENTS AND DESIGNATIONS

## H1 Introduction and Background

A very important aspect of the Wastewater scheme's function is to ensure that the District's natural resources are managed responsibly. Resource consents are held for various activities relating to the wastewater activity such as treatment, disposal and abstraction. These consents have conditions to ensure the resources are managed sustainably.

#### H2 Impact of National and Regional Plans

## H2.1 Proposed Natural Resources Regional Plan (NRRP) Chapter 4 - Water Quality

The purpose of this chapter is to set out Environment Canterbury's approach to water quality management in the Canterbury region by stating the water quality issues, establishing water quality outcomes for different types of surface and groundwater bodies, and setting out the Policies and methods to achieve these outcomes.

The effect on the operation and management of Wastewater Schemes by the proposed NRRP are detailed in Rule WQL 45 that provides for the use of land for the installation, use and maintenance of sewerage pipeline network as a Controlled Activity. To comply with Rule WQL 45 resource consents for the ongoing operation of the reticulation system will be required<sup>5</sup>. It is considered that a global consent that includes ongoing risk management assessments of each wastewater scheme will be sufficient to comply with WQL 45. (IP H1)

#### H2.2 Regional Coastal Environment Plan

Environment Canterbury has prepared a Regional Coastal Environment Plan. This plan promotes the sustainable management of the natural and physical resources of the Coastal Marine Area and the coastal environment and its integrated management. It sets out the issues relating to protection and enhancement of the coast, water quality, controls on activities and structures and coastal hazards.

## H3 Existing Resource Consents and Consents being Sought

Of the 26 scheme resource consents presently held (some schemes have a variety of consents):

- Twenty have an expiry date of between 2020 and 2039.
- One has an expiry date of 2010 (Selwyn Huts)
- One has an expiry date of 2006 (Arthur's Pass)
- Two have expiry date of September 2006 (Sludge disposal)

-

<sup>&</sup>lt;sup>5</sup> Guidelines for Sewerage Systems – WQL45 July 2005



• Two expired (Castle Hill)

Consents renewals for Castle Hill were applied for 6 months prior to their expiry date. This allows the existing consents to be used until the applications have been processed by Environment Canterbury (and any subsequent appeals). Application for the Ardlui Road and Bleakhouse Road sludge sites is programmed for March 2006.

#### H4 Consent Monitoring and Reporting

Consent reporting within SDC for Water and Wastewater is the responsibility of the Asset Manager Water. Information for wastewater consenting is provided by EDS on a monthly basis for the monthly environmental report to Environment Canterbury.

The Council has two dedicated databases for resource consent purposes. These databases are:

- Effluent and receiving water monitoring data This only has raw data (flows, chemical analyses etc)
- Resource Consent This includes all consents (and their associated details and conditions) held by Selwyn District Council, monitoring report details and responses provided from SDC

These databases have limited ability to:

- Report on a monthly and yearly basis
- Report on individual non compliance
- · Report on any mitigation carried out

A single database that combines the consents details with the monitoring data and includes the improvements noted above will ensure increased efficiently in the management of the resource consents. (H2)

#### H5 Consent Compliance

The following paragraph details Environment Canterbury's views on Councils consent compliance<sup>6</sup>

"In the past couple of years the rural monitoring team has been satisfied with the level of compliance that has been displayed by the SDC. When a request has been made for water use data or sampling results they have always been submitted within the desired timeframe. Any outstanding issues that have occurred within this time (i.e. Paparua Scheme fish screen) the SDC have endeavoured to address these concerns promptly and professionally."

#### **H6** Access to Councils Infrastructure

Access to Councils infrastructure is primarily controlled by the LGA 2002 (section 181). Council may enter the land to inspect, alter, renew, repair or clean any work provided that the infrastructure was constructed with the land owner's permission.

Easements are presently required in urban locations where infrastructure is required to be located within private property or reserves. This is considered necessary to ensure that Council or Council's

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<sup>&</sup>lt;sup>6</sup> CRC Memorandum of 20th October 2005



representative has unrestricted access to the pipe without the problems associated with the use of section 181 of the LGA 2002.

## H7 Property Designations

The Selwyn District Council District Plan contains a schedule of designated sites. Facilities not noted in this schedule are there by right and either meet the rules of the District Plan or Plans/Rules that were in force at the time of installation. Major new asset sites are considered for designation as they are acquired.

#### **H8** Matters for Consideration

Creating a list (paper and GIS based) and overall plan showing all Council easements required and those already obtained over private property should be undertaken. This will be a valuable tool in the event of property development or subdivision to identify at an early stage whether Council services are involved or encroached upon by the proposed future development or subdivision..

### H9 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table H.1 - Improvement Plan

Improvement Number	Description	Time Table
H1	Global consent that includes ongoing risk management assessments of each wastewater scheme to be instigated for compliance with Rule WQL 45 of the PNRRP	2006/07
H2	Enhancing the resource consents database for more efficient management that incorporates reporting of compliance	2006/07
НЗ	Records showing Council easements across private property recorded in one area and shown on GIS. All existing and future property agreements be stored on the individuals property file and flagged electronically	2006 onward





# I RENEWAL REQUIREMENTS

#### I1 Introduction and Background

Renewal is defined as the group of activities which renew, restore, rehabilitate or replace an existing asset to extend its economic life or service potential but does not increase the design capacity of the asset.

## I2 Current Renewals Approach

#### **I2.1.1** Wastewater Schemes

The renewals programme for reticulation and facilities has since 2003 utilised the Hansen asset register for wastewater. Reports from Hansen have been developed that give 10, 20 and 40 year replacement programmes based on expected lives of the individual assets. The expected lives of assets are detailed in table I.1 and I.2 below.

#### **I2.1.2** Facilities Replacement

Asset lives (expected lives) are based on a mixture of the following:

- Considered appropriate by Council's Engineers to reflect local conditions
- As indicated in the NAMS manuals and the International Infrastructure Management Manual Australia/New Zealand Edition – 2002

Replacement or overhaul of components occurs at different ages and is very dependant on the level of maintenance, criticality of the facility and the economics of replacement. Where an assets expected life has been reached but it shows no sign of imminent failure then its expected life is extended by 10%. **Error! Reference source not found.** details the standard expected lives used in the replacement programme and the 2005 asset valuations.

**Table 14-2- Facilities Expected Life** 

Asset Type	Age (Years)
Pumps and Motors (Submersible- Surface mounted)	15
Sewer Wells	50
Switchboard	20
Soft Starter and VFD	15
Flow Meters	15
SCADA	15
Valves(Actuated), NRV, PRV, Sluice & Solenoid type	10-50
Buildings	75



## **I2.2** Reticulation Replacement

Asset lives for all pipes (excluding AC) have been given an expected life of 75 years with AC having a life of 50 years. This was based on the recognised values of asset lives as indicated in the International Infrastructure Management Manual Australia/New Zealand Edition – 2002. Table I.1details the total lengths of wastewater mains and Table I.2 details wastewater mains predicted renewal dates.

Table I.1 Lengths of Wastewater Mains Km

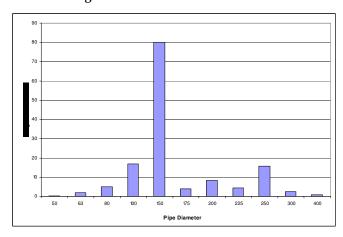
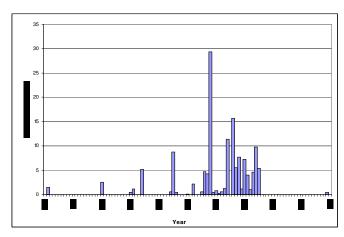


Table I.2 Wastewater Mains Predicted renewal Dates



## I3 Condition and Performance

#### I3.1 General

The Supplementary Section details all the individual scheme facilities condition and performance.



### I3.2 Wastewater Mains

#### I3.2.1 Condition

Condition of wastewater mains is considered by Council staff to have a condition rating<sup>7</sup> of Good to Very Good. This rating is a consequence of the young age of a majority of assets. Where the condition is unknown these will be assessed in 2006/07. This will be undertaken by scoring the existing mains condition using CCTV or using the CCTV that has been carried out on some schemes. (IP I3)

Table 14-3 Overview of CCTV Carried out to-date

Scheme	CCTV Carried out	CCTV Required	Why CCTV Required	Year to be Instigated	Comment
Arthurs Pass	No	Yes	Earthenware network	2006/07	To score and upload to Hansen
Castle Hill	No	Yes	Condition rating	2006/07	Sample part of community service only
Doyleston	No	No	New network	-	SDC staff onsite to undertake supervision at time of construction
Lake Coleridge	Yes (2003)	No	-	2006/07	Scoring of 2003 CCTV required
Leeston	Yes (early 1990's and 2005)	Yes	Scoring of previous CCTV	2006/07	CCTV may be required in additional areas following scoring of previous CCTV
Lincoln	Yes (2003)	Yes	-	2006/07	CCTV may be required in additional areas following scoring of previous CCTV
Prebbleton	No	No	New network		SDC staff onsite to undertake supervision at time of
Rolleston	No	No	New network		construction
Southbridge	No	No	New network		
Springston	No	No	New network		
TaiTapu	No	No	New network		

## I3.2.2 Wastewater Mains Performance

The performance of the majority of water mains within the District is considered by Councils Engineers to have a grade of very good to good.

Performance of the pipe network is generally based on council staff knowledge. Hydraulic modelling of the major towns (Lincoln and Rolleston) has been carried out. A hydraulic analysis including calibration of the reticulation for the remaining communities is programmed for 2006/07

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<sup>&</sup>lt;sup>7</sup> Infrastructure Asset Gradings Guidelines 1999



and 2007/08 to ensure future development can be facilitated and renewals to be based on reliable data.. (IP I1)

#### I3.3 Facilities

#### **I3.3.1** Facilities Condition

The condition of the majority of facilities within the District is considered by Councils Engineers to have a grade of good to very good.

#### **I3.3.2** Facilities Performance

The performance of facilities within the District is considered by Councils Engineers to have a performance grade of good to very good.

## I4 Future Renewals Approach

Selection criteria for Asset Renewal in the future will use all the techniques of optimised decision-making such as condition, performance and failure history and risk. This information will then be used for prioritising the replacements in accordance with the priority ranking table and then programmed or, in urgent cases, undertaken immediately. Table I.3 details possible selection criteria for asset renewal. The information required to carry out the future renewals approach will require the following to be implemented:

- All maintenance history to be recorded in Hansen plus condition and performance data when available
- Calibrated hydraulic models of all communities
- Criticality of assets to be held in Hansen

## Table I.3 Selection Criteria for Asset Renewal

Priority	Renewal Criteria	Replacement Requirement
1 (high)	Asset failure has occurred and renewal is the most cost effective option.  Asset failure of a critical system or component is imminent.  Does not meet level of service.  Does not meet legislative requirement.	Immediate
2	Failure of non-critical asset is imminent and renewal is the most efficient life cycle cost alternative. Fault causes repeated problems. Road or other major infrastructure upgrading scheduled for the current financial year, in the location of the wastewater asset. Complaints	Within one year
3	Reticulation maintenance is high.  Difficult to repair, due to fragile nature of material, or obsolescence.	Between three to five years
4	Existing assets have a low level of flexibility and efficiency compared with replacement alternative.	Between three to eight years
5 (low)	Existing asset materials or types are such that known problems will develop in time.	Greater than ten years



## I5 Assumptions and Confidence Levels

The 20 year renewal programme has been based on the following:

- Expected lives as per the 2005 valuation.
- Assessment of wastewater scheme knowledge updating requirements and Asset Management Practices by Asset Manager Water and Activity Management Plan writer.

## **I6** Tracking Projects

The Councils operates a Projects database to track projects including:

- Identification
- Assessment of options
- Cost estimates
- Rationalisation for completion of works
- Contract and completion of Renewal Works

This database is being considered for replacement or enhancement to:

Allow enhanced reporting throughout the project life cycle phase

- Increase user friendly functionality
- Allow deployment across all Council Departments
- Prioritisation of projects
- Deferred renewals identification

### I7 Renewals programme

Table I.4 details the facilities and mains renewals programme for period 2006/07 to 2026/27. This programme includes renewals associated with the Helpet WWTP. Some of these renewals may not be required with an assessment on replacement requirements being undertaken closer to the time that the Helpet plant is closed down.

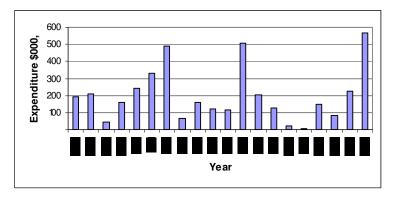


Table I.4 - Equipment and Reticulation Renewals 2006/07 to 2025/26 in \$000,

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Arthurs Pass (Rough Creek)					1					20					19					
Castle Hill																				l
Coleridge	30	3		4	6	2		1	17		45				2	2	3		1	312
Doyleston					43					37		5								44
Leeston	1	42		11	117	11	1	1	39	16	2	18	205	35			57	37	25	132
Lincoln	113	29	39	141		74	155	63	45		29	214				6	34	46	198	1
Prebbleton				1	72		13		41	49		16		19			31			76
Rolleston	50	3	4			241	82		4		38	69					26			
Springston		55					126					82								1
Southbridge									3					70					3	1
Tai Tapu		75					116		12			102								1
	195	207	43	158	240	329	492	65	160	122	113	505	205	124	21	8	150	83	227	565



Table I.5 - Estimated Renewal Capital Expenditure



#### I8 Method of Renewals

The physical works for renewal of Council Assets is completed by one of the following methods:

- Publicly let tender and contract, these are usually assessed by lowest conforming tender or on a weighted attributes methodology (depending on the type of project)
- Selected tenders and contract using proven and capable contractors
- Requested price from a minimum of 3 contractors for renewals less than \$5,000

The majority of design functions for renewals utilise the existing Professional Services Agreement through EDS.

#### I9 Deferred Renewals

Examination of the renewal needs during the preparation of this Plan has shown that there are no deferred renewals.

Renewal works identified in terms of the renewal strategies may be deferred if the cost is beyond the community's ability to fund. This can occur when higher priority works are required on other infrastructural assets, or there are short term peaks in expenditure, or if an inadequate rating base exists.

It is recognised that the deferral of some items of work will not impede the operation of the assets in the short term, however to continue to defer renewals is to create a liability and increase the risk of asset failure to the point where levels of service cannot be maintained.

When renewal work is deferred the impact of the deferral on economic inefficiencies and the system's ability to achieve the required service standards will be assessed.

A register of all deferred works will be maintained (preferably within the existing projects database), the total value of which will be recognised in the financial reporting as Loss of Service Potential (LOSP).

#### I10 Matters for Consideration

There are no matters that are required for consideration.



## I11 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Program).

Table I.6 - Improvement Plan

Improvement Number	Description	Time Table		
IP I1	Calibrated hydraulic modelling of the remaining communities and associated updating asbuilts (Manhole inverts)	2007/08 & 08/09		
IP I2	Projects database considered for replacement or enhancement	2006/07		
IP I3	Validation of condition and performance of sewer network	2006/07		
IP I4	Implementation of critical asset analyses	2006/07		
IP I5	Implementation of ODM	2006/07		



## J DEPRECIATION / DECLINE IN SERVICE POTENTIAL

#### J1 Introduction

The basic value of an asset reduces in accordance with the wearing out over the asset's life arising from use, the passage of time, or obsolescence. This reduced value is called the depreciated replacement cost. It is accounted for by the allocation of the cost (replacement cost) of the asset less its residual value over its useful life.

## J2 Funding of Depreciation

The Council has previously consulted with the community and decided not to fund depreciation via targeted rates for Wastewater Service functions. While it may be considered prudent to fund depreciation over the life of the asset and create a reserve for its replacement, this policy decision has been delegated to the individual Township Committees.

The level of funding for some communities for equipment and reticulation renewals in the next 5 - 20 years can be a significant proportion of the annual incomes for some schemes. Review of the existing depreciation funding policy is required to ensure that the long term renewals funding will be appropriate in the future. (IP J1)

#### J3 Calculation of Depreciation

The basic value of an asset reduces in accordance with the wearing out or consumption of benefits over its life arising from use, the passage of time, or obsolescence. This reduced value is called the depreciated value and has been calculated as the depreciable component of the replacement cost proportioned by the ratio of remaining useful life (RL) to economic life (EL) on a straight-line basis. This method provides a reasonable basis for the 'return of capital' over the economic life of the asset. Optimised depreciated replacement cost is given by:

$$ODRC = (ORC-RV) RL/EL +RV$$

A depreciation allowance is included only for those assets funded as a capital expense (i.e. assets funded as an operating expense has zero depreciation).

The annual depreciation is calculated by dividing the depreciable portion of the replacement cost of an asset by its economic life. The annual depreciation is calculated by:

$$D = (ORC-RV)/EL$$
 or  $= (ODRC-RV)/RL$ 

If the network is being maintained at a stable level of service, the long run average renewal expenditure should approximate the annual depreciation of the network. However, it should be noted that depreciation is not a proxy for the amount needed to fund long-term asset requirements. Accounting for the past consumption is not the same as providing for future consumption, these two purposes differ, and need to be considered separately.



## J4 Depreciation

Valuations undertaken in June 2005 have been based on straight line depreciation in accordance with FRS-3. The June 2005 depreciation and annualised depreciation for Wastewater schemes are detailed on Table J.1.

Table J.1 - Annual Depreciation June 2005

Scheme	Annual Depreciation
Arthur's Pass	\$5,688
Castle Hill	\$18,750
Doyleston*	\$11,661
Lake Coleridge	\$19,004
Leeston	\$126,089
Lincoln	\$194,848
Prebbleton	\$65,424
Rolleston	\$205,127
Southbridge*	\$32,466
Springston	\$29,315
Tai Tapu	\$46,592

<sup>\*</sup> Treatment and disposal depreciation costs shown in Leeston Wastewater scheme

## J5 Matters for Consideration

There are no Issues relating to depreciation.

## J6 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table J.2 - Improvement Plan

Improvement Number	Description	Time Table		
IP J1	Review of the existing depreciation funding policy is required to ensure that the long term renewals funding will be appropriate in the future.	2006/07		



# K FUTURE DEBT REQUIREMENTS

### K1 General

Council's policy on maintenance accounts are: Operating accounts are allowed to be in deficit for 3 years with no interest charged.

## **K2** Matters for Consideration

There are no Issues relating to Future Debt Requirements.

## K3 Improvement Plan

No improvements have been shown to be required.





# L FUTURE OVERALL FINANCIAL REQUIREMENTS

# L1 Future Financial Requirements

This section to be completed once LTCCP is available

Table L.1 - Forecasted Statement of Financial Performance - 2005/15

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Other Income										
Total Activity Income										

## L2 Matters for Consideration

## L3 Improvement Plan





# M FUNDING POLICY, FEES, CHARGES, RATES AND SIGNIFICANCE POLICY

#### M1 Introduction

The general approach to the funding of the annual cost of the public wastewater schemes starts from the premise that those who benefit (either directly or indirectly) should pay.

Presently, the owners of all properties that are connected to a public wastewater system pay an annual charge based on a flat rate. In some areas where properties are capable of being connected but which are not connected, the owner pays an availability charge in recognition of the benefits of being able to connect when they wish. It is intended that this policy continue in future.

## M2 Funding Policy for Wastewater supplies

The Local Government Act 2002 states that under Part 6 Section 102(4) (a) a local authority must adopt a Revenue and Financing Policy. The Selwyn District Council has adopted the following policy for Wastewater Schemes.

This service plays an important role in protecting public health and property. The Councils goal is to be non-polluting, with all towns eventually having reticulated sewerage disposal systems and efficient stormwater systems.

Twelve townships have sewage collection, treatment and disposal systems and one more is planned.

The benefits are:

- The public health is protected
- Economic development is less restricted

#### Why

A strict analysis shows by far the greater benefits go to those using the systems in terms of capital and maintenance costs, convenience, and environmental health.

Many people are providing their own systems, such as septic tanks, and they should not have to contribute towards sewerage services for those who live in townships and have a community scheme.

#### M3 Funding Issues

Where possible capital requirements associated with Levels of Service will be funded via contributions (lump sums etc). For those properties that do not take up the contribution option then funding from will be via targeted rates.

In the short term funding of renewals will be via the individual wastewater scheme account.

#### M4 Rating

The details of the individual schemes rating type are detail in Table M.1 below. For those rating unit that have greater than three urinals/pans will incur an additional rate per urinal/pan.



Table M.1 Rating of Individual Schemes for 2005/06

Scheme	Full Charge	Half charge	Pan Charge From 4+	
Arthur's Pass	650.00	325.00	162.50	
Castle Hill	127.85	63.90	31.96	
Doyleston	300.00	150.00	75.00	
Lake Coleridge	475.00	237.50	475.00	
Leeston Maintenance	231.00	115.50	57.75	
Leeston Holding Capacity	141.00	70.50	35.25	
Lincoln	170.00	85.00	42.50	
Prebbleton	160.00	80.00	40.00	
Rolleston	250.00	125.00	62.50	
Southbridge	375.00	187.50	93.75	
Springston Maintenance	170.00	85.00	42.50	
Springston Holding Capacity	139.00	69.50	34.75	
Tai Tapu Maintenance	238.00	119.00	59.50	
Tai Tapu Holding Capacity	493.00	246.00	123.25	

#### Comment required here on holding capacity

## M4.1 Rating Issues

This will be completed once individual scheme rates have been calculated.

### M5 Significance Policy

Under the LGA 2002, each Council is required to have a Policy of Significance. In preparing and adopting the policy, the Council is required to use the Special Consultative Procedure that is prescribed by the Act. The requirements for the policy can be seen as being a means for ensuring that in making decisions that Council is:

- Clear about why it is addressing a matter
- Has considered and evaluated the options and alternatives
- Has information on the community views about the matter and the options for addressing it, and particularly it has an understanding of the views and preferences of those persons likely to be affected by, or have an interest in the matter.

A Significant Activity is one that has a high degree of significance in terms of its impact on either:

- The well-being of the people and environment of Selwyn District and/or
- Persons likely to be affected by or with an interest in that activity and/or
- Capacity of the Selwyn District Council to provide for the well-being of the district.

Wastewater schemes are considered by the Selwyn District Council to be a Strategic Activity.



## **M6** Matters for Consideration

The policy for requires amendment to take into consideration that Kirwee and Darfield communities may not require a reticulated sewerage disposal system.

## M7 Improvement Plan

No improvements have been shown to be required.





# N RISK MANAGEMENT

# N1 Background

Risk management is the systematic application of management polices procedures and practices to the tasks of:

- Identifying
- Analysing
- Evaluating
- Treating
- Monitoring

It is important to note that risk management is not simply about the downside of events such as financial loss or legal proceedings. It also refers to the upside and opportunities that exist for the Council to do things more innovatively, sustainably and effectively.

Risks can be seen to arise from many areas of the wastewater schemes, both in the physical aspect and business risks. Table Table N.2 is a summary of the potential risks in managing and operating wastewater schemes. The following risks/mitigation has been noted in other Appendices but it is considered that a summary of all risks and the methodology of resolving them will allow an overview of risk and the associated mitigation that the Council accepts. The Risk Category table details the risk categories and the associated managerial response required. Development of a risk control schedule for all utilities is required.(IP N1)



# **Table N.1 Risk Category**

Risk	Risk Treatment Key	Attention Required by	Response Required
Extreme (11-12)		Executive Management	Action plans and management responsibility specified
High (8-10)		Senior Management	Management responsibility specified
Medium (4-7)		Specific monitoring or response procedures	Management responsibility specified
Low (1-3)		Routine procedures	Unlikely to need specific application of resources

Table N.2 Potential Risks and Mitigation

Potential Risk Number		Risk Category	Legislation	Community Expectation	Financial Detrimental Effects	Environmental Detrimental Effects		Number
Risk N	Category	High (3)	Qualified Audit	Not obtainable in long term	Greater than - \$50k	Long term		
ential I		Medium (2)	Warning over non compliance	Not obtainable in short term	Between -\$10k - \$50k	Short term	ıl Risk	Improvement (Mitigation)
Pote		Low (1)	Compliance	Reached	nil effect	No effect	Total	Imp (Mi
1	Managerial and Governance	Existing or Proposed Level of Compliance						
1.1	Business Continuity Plan	No Business Continuity Plan has been developed	2	3	3	1	9	
1.2	Succession planning	No formal succession planning is carried out.	2	2	3	1	8	IP N1
1.3	Risk Register and Asset Risk Plan	Risk Control schedule to be developed for all utilities	2	2	2	2	8	IP R1
1.4	Corporate Risk Policy	No Policy that outlines Councils strategic approach to risk management	2	2	3	2	9	
1.5	Sufficient competent and appropriately skilled people to manage all aspects of the wastewater activity satisfactorily at all levels.	Succession planning has been noted as an area where improvements could be achieved	1	3	3	2	9	



Potential Risk Number		Risk Category	Legislation	Community Expectation	Financial Detrimental Effects	Environmental Detrimental Effects		ımber
Risk N	Category	High (3)	Qualified Audit	Not obtainable in long term	Greater than - \$50k	Long term		ent Nu
ential I		Medium (2)	Warning over non compliance	Not obtainable in short term	Between -\$10k - \$50k	Short term	Fotal Risk	Improvement Number (Mitigation)
Pote		Low (1)	Compliance	Reached	nil effect	No effect	Tota	Imp (Mi
1.6	Council Policy Document	The council has a corporate policy manual that records all policies. More policies are required in the wastewater chapter. The affected staff knows of the manual's existence and it is being actively used	1	1	1	1	4	
1.7	Special Agreements	Adequate service agreements are in place in the organisation to ensure that each department/division knows "what, how and when" is expected from it and where it fits in the organisation	1	3	2	1	7	
2	Service Delivery							
2.1	Monitoring and Reporting	The reporting on compliance of existing Service Levels is not carried out in a systematic manner. The proposed Service Levels have a reporting mechanism that will assist management in the long-term operation of the wastewater schemes.	2	2	1	2	7	IP R2
3	Financial							
3.1	Completion of annual Capital Works programme	Council to completes majority of annual capital works program on time	1	2	1	1	5	
3.2	Insurance	All assets adequately insured	1	1	2	1	5	
3.3	Connected properties charged	Properties are appropriately charged as per Council policy and within Scheme design parameters	1	2	2	1	6	
3.4	Financial Costs for providing services portray the true costs for the following:	The financial forecasts level of confidence are as follows:						



Potential Risk Number		Risk Category	Legislation	Community Expectation	Financial Detrimental Effects	Environmental Detrimental Effects		Improvement Number (Mitigation)
Sisk N	Category	High (3)	Qualified Audit	Not obtainable in long term	Greater than - \$50k	Long term		ent Nı n)
ential 1		Medium (2)	Warning over non compliance	Not obtainable in short term	Between -\$10k - \$50k	Short term	Fotal Risk	rovem
Pote		Low (1)	Compliance	Reached	nil effect	No effect	Tota	Imp (Mi
	Operations and maintenance	High level of confidence as based on historical costs and known cyclic increases in operational and maintenance costs.	1	1	1	1	4	
	Facility renewals	High level of confidence with costs based on similar projects carried out in the past.	1	1	1	1	4	
	Reticulation renewals	Medium to High level of confidence	1	1	1	1	4	
	Future new Capital works	High level of confidence	1	1	1	1	4	
3.5	Financial Assistance (external sources) being taken advantage of.	Council fully aware of all external funding sources and takes advantage of these when required.	1	1	1	1	4	
3.6	Facilities Valuations	Valuations in accordance with FRS 3	1	1	1	1	4	IP D1
3.7	Prevention of "Cost Blowouts"	The council's financial accounting system has reporting facilities that allow managers to be kept fully informed of expenditure on all projects.	1	3	3	1	8	IP E9
3.8	Development Contributions appropriate	Development contributions are fair, clear and properly enforced	1	1	2	1	5	
3.9	Deferred maintenance	Low level of deferred maintenance	1	1	1	1	4	
4	Physical Assets							
4.1	Lifelines	No comprehensive investigations yet underway	1	3	3	1	8	
4.2	As Built Plans and new assets	Council doesn't have a documented process for recording changes to assets that occur during the Maintenance Contract and following Renewal etc. No asset attribute tracking grid is used which could automatically records changes to existing	2	2	2	1	7	



Potential Risk Number		Risk Category	Legislation	Community Expectation	Financial Detrimental Effects	Environmental Detrimental Effects		Improvement Number (Mitigation)
Sisk N	Category	High (3)	Qualified Audit	Not obtainable in long term	Greater than - \$50k	Long term		ent Nu n)
ential E		Medium (2)	Warning over non compliance	Not obtainable in short term	Between -\$10k - \$50k	Short term	Fotal Risk	rovem tigatio
Pote		Low (1)	Compliance	Reached	nil effect	No effect	Tot	Imp (Mi
		assets.						
4.3	Standard of new construction and of repair work	New assets are built to standard specifications, which are aimed at reducing the risk of failure of an asset. Subdivisions are properly inspected and as-builts completed to the required standards. Maintenance and repair work is inspected, supervised and approved by Council staff	2	3	2	1	8	
4.4	Asset attributes	Council's knowledge and understanding of reticulation and facilities attributes (condition, criticality, performance and remaining life) requires some improvement to ensure the replacement program is based on sound information.	2	2	1	1	6	
4.5	Optimisation- Renewals	Optimised decision making techniques will be used to optimise the reticulation renewal program	1	2	3	2	8	
5	5 Maintenance and Operation							
5.1	Operation manuals	Operation manuals to be updated or instigated during 2006/07	1	2	2	1	6	IP E3
5.2	Health and Safety Manuals	Available, updated and adhered to	1	1	3	1	6	
5.3	Standard of new construction and of repair work	Maintenance and repair work is inspected, supervised and approved by Council staff	2	3	2	1	8	
5.4	Service Agreements	Maintenance and Operation performed under	1	1	1	1	4	



Potential Risk Number		Risk Category	Legislation	Community Expectation	Financial Detrimental Effects	Environmental Detrimental Effects		Improvement Number (Mitigation)
Risk N	Category	High (3)	Qualified Audit	Not obtainable in long term	Greater than - \$50k	Long term	_	ent Nu n)
ential I		Medium (2)	Warning over non compliance	Not obtainable in short term	Between -\$10k - \$50k	Short term	Fotal Risk	rovem
Pote		Low (1)	Compliance	Reached	nil effect	No effect	Tota	Imp (Mi
		formal contract.						
	Energy Management	Council wide commitment	1	1	1	1	4	
6	Legal							
6.1	Legislative Compliance	All legislative requirements that impact on water supplies being complied with	1	1	1	1	4	
6.2	Sub-divisional, Development and Building Consent processes.	Appropriate attention to detail is being paid during processing sub division, development and resource consent applications	1	3	3	3	10	
6.3	Councils Warrants	All relevant staff have the necessary warrants and properly trained for their use.	1	2	2	1	6	
6.4	Bylaws	New tradewaste Bylaws by 2007	2	2	2	1	7	IP T1
6.5	Designations	All relevant wastewater scheme assets have been properly designated in the District Plan	1	1	3	1	6	
6.6	Sanitary Assessments	Assessments completed and improvements noted in appendix C	1	1	1	1	4	
7	Environmental				•			
7.1	Compliance with resource consent Conditions	All resource consents are complied with proposed reporting procedures to management to ensure compliance.	1	1	1	1	4	
7.2	Asset Management taking into account provisions of District Plan	Prior to Zone changes being considered all issues in regard to wastewater for individual zone changes are considered	1	1	1	1	4	
7.3	All relevant Consents held	Council holds all relevant consents.	1	1	2	1	5	





#### N2 Insurance

Council has the following insurance cover:

- Infrastructure (all disaster policy) to value of \$46M with excess of \$250,000
- Public liability to maximum of \$2.0M with minimum payment of \$10,000
- Professional liability is covered by Councils internal insurance where the Council staff are responsible for the asset design

Insurance cover will be updated for all facilities in early 2006 using the 2005 valuations.

# N3 Emergency Management

## N3.1 Civil Defence and Emergency Response Plans

The following documents are available for guidance:

- Selwyn District Council Local Civil Defence Emergency Management Arrangements
- Selwyn District Council Emergency Operations Centre SOP
- Selwyn District Council Disaster Recovery Plan

## N3.2 Local CDEM Arrangements

The Selwyn District Council is a member of the Canterbury Civil Defence Emergency Management (CDEM). This group was established under the Civil Defence Emergency Management Act 2002 (CDEM Act). The CDEM Group's members work together to manage Canterbury's hazards so that the communities face acceptable levels of risk. Arrangements for managing emergencies in a coordinated, multi-agency manner are specified in the Canterbury CDEM Group Plan. As an integrated part of the Group Plan, this local arrangement specifies the unique local operational arrangements of the Selwyn District Council.

#### N3.3 SCADA

The Council is presently obtaining a portable SCADA base station that can be used in emergencies at any civil defence location. This will have all the built-in functionality that the base station has that is located permanently at the Leeston Service centre.

# N3.4 Electricity Supply

The Council operates an electricity database that details all utilities electricity supply sites and includes the following:

- Priority for power reconnection after wide spread outages (takes into consideration standby generators etc)
- Database is accessible by Orion staff (via Councils Intranet) to ascertain the priority for reconnection
- Information on each site for power supply

## N4 Interconnectivity Effects

Interconnectivity or interdependence between different utilities during and after a disaster is of utmost importance. In the event of failure, access is necessary to visit a site and provide power for



recovery or removal of debris. To enable effective and efficient recovery of lifelines from an event which disrupts their service, dependencies on other lifelines must be understood and where necessary, mitigated against.

Interconnectivity can also be expressed or described as a 'Multilinear' Event Sequence (MES) which clearly indicates the multitude of responsibilities required when dealing with a number of different utility providers.

The following details the interdependence between Selwyn District Council's wastewater schemes and other utility providers following a disaster.

Table N.3 - Interdependency between the Wastewater supplies and other Utility Providers for Recovery following a Disaster

Wastewater Supplies System components	Electricity	Communications	Roading	Railways	Water	Stormwater	Fire Fighting
Treatment Plants	3	2	2	-	2	-	-
Pump Stations	3	2	3	-	-	-	1
SCADA	2	3	1	-	-	-	-
Reticulation	1	1	3	-	-	-	-
Total	9	8	9	-	2	-	1

Note: 3 = High dependence 2 = Moderate dependence 1 = Low dependence -= No dependence

The above table shows a high dependence for Selwyn District Councils Wastewater Supply Systems on roading, electricity and communications. This may change significantly if for example there was a standby generator at the pump stations and treatment plants, which will reduce the dependency on electricity in the short to medium-term. The standby generator would still be dependent on the adequate supply of fuel (which relies on roading).

## N5 Business Continuity

#### N5.1 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture.

In previous decades the pool of experienced local authority and ex-public service engineers available meant that the negative effects of poor succession planning were not experienced. With a shrinking pool of experienced engineers, and near full employment these effects are now being experienced by more local authorities. Whilst there is always potential for staff in key positions to move on to further their careers, succession planning can help to mitigate the effects of this.

Succession planning has been carried out in a number of areas but to ensure greater effectiveness there is a need to improve planning and implementation. Succession planning techniques can include:



- Sourcing replacement staff from within the organisation wherever possible
- Comprehensive personal career development plans in place for all relevant staff. This can
  include identifying weaknesses in training and experience and attempting to address those
  weaknesses by use of mentoring, relevant projects and continuing professional development
  programmes etc.
- Identifying likely staff retirements, promotions, resignations or position changes on an
  annual basis. Identifying potential internal staff to fill those positions, providing those staff
  with projects that extend them, and giving them relevant experience for filling the positions.

The benefits of succession planning and how this might be implemented should be investigated. (N1)

#### N5.2 Audits

To establish and ensure the ongoing improvement of the quality of this Plan a series of audits are planned and includes Financial, Systems, Technician and Performance Audits.

#### N5.2.1 Financial Audits

The Local Government Act requires that independent annual financial audits be undertaken on the operations of Council; such audits may include all significant activities such as asset management planning. The auditor's opinions will be included in the Annual Report.

#### N5.2.2 System Audits

System Audits will be undertaken at regular intervals to assess the appropriateness and performance of asset management systems, data and processes. The first system audit is planned to occur by 2008. (IP N2) This audit will identify the current status of asset management processes, systems and data and produce targets for Asset Management practices to be achieved in following years. A programme of recommended actions will be developed for Asset Management processes, systems and data. Future regular system audits will measure progress against targets and the development programme.

#### N5.2.3 Technical Audits

Technical Audits (peer reviews) will be undertaken at regular intervals to assess and identify compliance with statutory accounting requirements.

- The quality of the Plan in terms of completeness, objectivity, logic, technical content and presentation
- Perceived strengths and weaknesses for Plan improvement
- Recommended specific areas for Plan improvement
- Technical Audits may be undertaken using external or internal reviewers.

### N5.2.4 Performance Audits

Performance Audits will establish whether the stated objectives for the operation of the asset have been achieved. Measurement of the success of the operation of the asset will be assessed using the results of:

- Customer satisfaction surveys
- Key Service Criteria objectives compliance
- Benchmarking surveys.



These measurements will determine the public view of how well the levels of service have been achieved, an objective measure against stated Key Service Criteria and national measures of relative performance. The performance audits will also be used in ongoing customer consultation regarding future standards and requirements of the customers in the provision of the service.

#### N5.3 Use of Suitably Qualified and Trained Persons

An important measure of this Plan's quality is the ability, experience and qualifications of the individuals and companies involved in its preparation. The Selwyn District Council employs 12 staff within the Asset Management Department to carry out Councils asset management function. Formal qualifications range from High School gradings, New Zealand Certificate in Engineering to Chartered Professional Engineers.

On-going training is actively encouraged for staff involved in infrastructure asset management and includes attendance of:

- INGENIUM sponsored workshops on Asset Management
- Annual NZWWA conference
- Asset Management conferences
- Wastewater Managers (NZ wide) quarterly meeting.

Due to commitments to the ongoing operation associated with Councils utilities the attendance of these have in the past been a low priority.

#### N6 Matters for Consideration

Key issues that are to be addressed by 2008 include:

- Corporate policy on Risk Management needs to be developed.
- Potential Risks and Mitigation schedule has indicated a number of areas where the risk assessment is extreme. With appropriate action the risk assessment can be reduced to moderate to low.

# N7 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table N.4: Improvement Plan

Reference	Item	Description	Timetable
IP N1	Succession planning	The benefits of succession planning and how this might be implemented should be investigated	2006/07
IP N2	System Audits will be undertaken	To assess the appropriateness and performance of asset management systems, data and processes	2006/07
IP N3	Risk control schedule	Develop a risk control schedule over all utilities	2006/07





# O NOT APPLICABLE FOR THIS PLAN





# P SIGNIFICANT NEGATIVE EFFECTS

#### P1 Introduction

Significant negative effects as a result of the Wastewater Activity can be measured as impacting on the following aspects of life:

- Social example is; location of treatment plants close to residential properties
- Economic example is; treatment upgrades costs being unviable for those rate payers on low incomes
- Environmental example is; sludge disposal to landfills
- Cultural example is; discharge of wastewater (treated or untreated) into waterways without passing through the land

# P2 Significant Negative Effects Identified

There are no significant negative effects from the Councils Wastewater Schemes.

# P3 Improvement Plan

No improvements have been shown to be required.





# Q SIGNIFICANT ASSUMPTIONS AND UNCERTAINTIES

# Q1 Introduction and Background

The LGA 2002 - Schedule 10, Part 1 (11) requires the Council to clearly define all the significant forecasting assumptions and risks that underlie the financial estimates, assumptions concerning the useful life of significant assets and an estimate of the potential effects of the uncertainty on the financial estimates provided.

Forecasting assumptions and uncertainties are essential in the operation of Council's assets to indicate the levels of risks associated with those assumptions. Where necessary additional strategies can be implemented to reduce the risk

# Q2 Assumptions and Uncertainties

Table Q.1 provides a summary of the significant assumptions which are contained within this Activity Management Plan. This will ensure that the effort to minimise the assumptions in the future can be focused in the areas of highest risk.

Table Q.1 - Significant Assumptions and Uncertainties

No	Significant Assumptions and Uncertainties
1	The information provided has been developed from a sound base, the asset register being of medium quality and renewal projections based purely on age, rather than condition or performance.
2	The level of operations and maintenance expenditure is based on existing operating procedures and historic costs.
3	The renewal programme is based on a small condition sample. Whilst these inspections have indicated that the assets are in good condition, further condition inspections may reveal problems that impact on the required level of renewal funding.
4	Demand assumptions are based on historical usage
5	Population assumptions are based on current trends in natural increase and migration but may vary due to : changes to District Plan, review of sewerage discharge agreements with CCC and effects of District Plan Appeals

## Q3 Matters for Consideration

There are no Issues relating to Significant Assumptions and Uncertainties.





# R LEVELS OF SERVICE, PERFORMANCE MEASURES AND RELATIONSHIP TO COMMUNITY OUTCOMES

# R1 Goal and Objectives

# R1.1 Selwyn Community Plan

The Selwyn Community Plan states high level community outcomes and well-beings. In future the performance of each Council Activity should be reported in terms of these outcomes and well-beings.

#### **R1.2** Role of Council

In achieving community outcomes Council holds a variety of roles. The role of Council will generally fit into one or more of the following categories. Identifying the primary role of Council will assist Council to understand how it can contribute to achieving the community's goals.

Role of Council	Description	Examples
Provider	It is the role of Council to provide this service to the community or individuals using it's own resources	Parks and Reserves, Libraries, Roading and Traffic Control, Water Supply, Wastewater, Stormwater, Solid Waste
Funder	Council may contribute towards an activity that assists to achieve a desired outcome	Tourism and promotions
Regulator	It is the role of Council to provide and enforce controls on activities (monitor)  Building and planning control	
Promoter/Facilitator	Council may act as facilitator to provide a mechanism for activities that assist to achieve a desired outcome	Development and establishment of new industries and businesses.
	Council may assist securing financial support from other sources	
Advocate	Council may advocate on behalf of the community to achieve a desired outcome.	Air and waterway quality, access to water abstraction (as these are regulated by the Regional Council)

#### **R2** Present Levels of Service and Performance

The Levels of Service and Performance that were proposed in the 2003 Water Asset Management Plan are detailed in Table R.1 below. These Levels of Service were never formally approved by Council.



Table R.1 - Present Levels of Service

Criteria	General	Technical	Response Time (Hrs)	Key Performance Indicator (KPI)
Responsive	Repair as soon as possible	All schemes – blocked sewer mains	1	Analysis of maintenance records supplied by maintenance contractor.
		All schemes – complaint of blocked lateral that Council is responsible for	1	
		All schemes – overflowing manhole	1	
		Breach of Resource Consent	✓	
		All schemes – Urgent alarms as defined by Council's SCADA	1	
		All schemes – Non Urgent alarm as defined by Council's SCADA	1	
Environmental	Comply with all consents	Comply with effluent quality standards as defined in Resource Consents	-	Analysis of tests
Cost	Be cost effective	+ 5% of Budget	-	Study of Council's monthly accounts
Satisfaction	Ratepayer to have high level of satisfaction	Yearly survey	-	
Reliability	Ratepayers not to be unduly inconvenienced	No property to be inconvenienced more than twice in any 3 year period.  < 3 blockages annually per 100 km of pipe.  No pump station overflows	-	Pump station levels monitored by SCADA. Analysis by maintenance records supplied by Maintenance Contractor.

# **R3** Future Levels of Service and Performance Measures

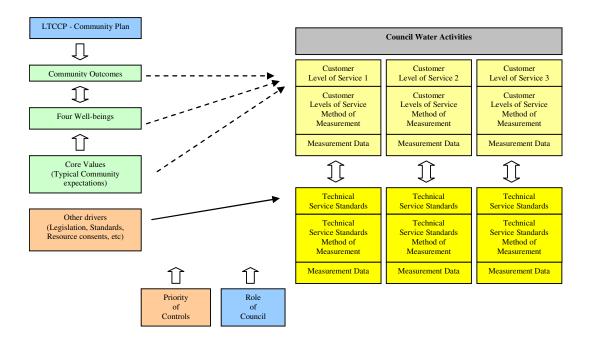
In terms of the Local Government Act 2002 there should be a clear correlation between Levels of Service, Community Outcomes and well-beings, and the management of the wastewater activity.

With many local authorities, levels of service or objectives have traditionally been defined as technical compliance standards without any linkage to strategic or community based drivers. The community at large are generally unfamiliar with technical compliance standards and this makes it difficult for the community to determine if the level of service proposed is appropriate, and provide meaningful feedback through the consultation process.

It is proposed that 'Customer Levels of Service' be expressed in everyday language that can be linked directly to outcomes and well-beings as expressed in the Selwyn Community Plan. The Customer Levels of Service describe the service level Council targets, which are underpinned by a number of Technical Service standards.



The relationship between community outcomes, well-beings and legislation with Customer Levels of Service and Technical Service Standards is illustrated below.



In determining Customer Levels of Service Council must consider it's role in the community as Service Provider, Funder, Regulator, Promoter/Facilitator or Advocate.

The drivers and controls that influence Councils involvement in the wastewater activity need to be considered in an order of priority, to balance community concerns with legislative requirements. Treated wastewater effluent quality is an example of this, where the discharge parameters are agreed by the Regional Council through the resource consent process. This in turn will determine the treatment system required.

The following Customer Levels of Service are proposed.

Table R.2 - Customer Levels of Service

Level Of Service Number	Customer Levels of Service
WW 1	Wastewater is removed reliably from my property
WW 2	The natural environment is not polluted
ww 3	Problems are resolved promptly
WW 4	Council manages the Wastewater Service wisely

It is acknowledged that using common language to describe Customer Levels of Service may lead to different interpretations of what the Customer Levels of Service means. What is acceptable to one person may be unacceptable to another. This is common and often reflected in the results of customer satisfaction surveys.

The underpinning Technical Service Standards are more defined and can be accurately reported on.



While the Customer Levels of Service are the same for all supplies, the Technical Service Standards will vary between Wastewater Schemes. This reflects the variation between Wastewater schemes in management, customer expectations and scheme constraints.

At the time of preparation of this Plan, Selwyn District Council had not consulted the community over this method of describing Levels of Service, or the Customer Levels of Service themselves.

The approach and Levels of Service are subject to the Special Consultative Procedure as set out in the Local Government Act 2002. This will occur as part of an organisation-wise consultation programme. (IP R1)

The Technical Service Standards for each Customer Levels of Service, along with the linkages with the Selwyn Community Plan is described below.



Table R.3- Proposed Levels of Service and Linkages with the Selwyn Community Plan

	Customer Level of Servi		Monitoring		Community Outcomes		Well Being		Community core values		Priority of Controls		Role of Council		
		Measurement	Technical Service Standards	U	Reporting Frequency		Reason for contribution		Reason for contribution		Reason for contribution		Document		Comments
WW1	Wastewater is removed reliably from my property	Customer satisfaction survey with a greater than 85% positive response of "overall satisfaction"	Number of justifiable complaints  There is adequate capacity in the wastewater systems  There are no pipe blockages  Infiltration flows minimised	Consumer complaints Data Base  Contract KPI report  Contract KPI report  Monthly reporting on SCADA	Monthly, quarterly and annual report	Safe living environment	Public heath is protected through the removal and treatment of wastewater	Social and Cultural	The cost to industry and individuals is minimised while enabling efficient use and enjoyment of properties.  The concerns of Maori toward the treatment and disposal of wastewater are respected, and the natural environment is attractive for recreation.	Reliability  Availability  Public health and Safety	The service is consistently available and reliable  The service is consistently available and reliable  Public heath is protected as wastewater is removed and treated to acceptable standards.	National District	Health Act 1956 Selwyn community Plan		
WW 2	The natural environment is not polluted	Customer Satisfaction Survey- Interaction with special interest groups (eg. fish and game, tourist operators)	Wastewater is treated and disposed of in an appropriate manner  Resource consent conditions are complied with  Treatment processes are operated as specified in operations manuals.	Inspections, sampling and monitoring at frequencies required in operations manuals  Consents database  Contract KPI report	Monthly, quarterly and annually	Air, land, water and general environment to be kept in a healthy condition	The environment and Public health is protected from the discharge of untreated sewerage	Economic  Environmental	The cost to industry and individuals is minimised while protecting public health and the environment  The environment is protected from the discharge of untreated sewerage	Sustainability Public health	The environment is protected from the discharge of untreated sewerage  Public heath is protected as wastewater is removed and treated to acceptable standards	National Internal	Resource Consent conditions Operations Manuals	Provider	Council is required to continue providing this service under the Local Government Act
WW 3	Problems are resolved promptly	Customer satisfaction survey with a greater than 80% positive response of "no problem with the reliability"	Response and completion time as set out in Maintenance contract are met	Consumer complaints Data Base Contract KPI report	Monthly, quarterly and annually	Air, land, water and general environment to be kept in a healthy condition		Economic	Customers get value for money			Internal	Through maintenance contract 849		2002
WW 4	Council manages Wastewater Schemes wisely	Customer satisfaction survey with a greater than 80% positive response of "value for money"	100% of replacement and improvement programme completed.  Overall cost to be within +10%-5% of Council approved maintenance budget.  No non compliant consenting.	NCS reporting  Projects database  Via improved NCS reporting system  Consents database	Monthly, quarterly and annually	Air, land, water and general environment to be kept in a healthy condition		Social and Cultural	Costs associated with loss or reduction in service and protracted resolution of issues  Quality of life lessened/cause of frustration if resolution of issues is protracted	Value for money (perceived value for money)  Making it easy' for the customer (ease of access, saving customers time)	In paying rates consumers expect a comprehensive service supporting the commodity supplied  In paying rates consumers expect a comprehensive service supporting the commodity supplied	Customer	In paying rates consumers expect a comprehensive service supporting the commodity supplied  Through maintenance contract 849		



## R4 Monitoring and Reporting

Measurement and reporting of Customer Levels of Service shall be achieved through the customer satisfaction survey. With the use of everyday language in the Customer Levels of Service residents can fairly gauge their opinion on each issue.

The customer satisfaction survey will be undertaken annually to a high level (general questions) with a significantly more detailed survey every 3 years. These surveys will be used as a benchmark for the next year, and the trend across the results of each year's survey provide a long term view of Council's performance.

Reporting on the achievement of Customer Levels of Service can be compared across different activity group to provide internal benchmarking within Council, and combined to provide an indication of the contribution towards community outcomes and well-beings.

Measurement and reporting of Technical Service Standards is essential for the prudent management of the wastewater activity.

The development of real time reporting of Technical Service Standards is favoured and this can be achieved through enhanced use of SCADA and Hansen for many criteria. It is proposed that a Graphical User Interface or 'Dashboard' be developed to provide reporting to staff against each of the technical service standards. (IP R2)

The comparison of measurement of Customer Levels of Service and Technical Service Standards will enable staff to determine if there is consistency between the Customers impression of the service provided and the compliance measured against actual technical standards. If it is found that the customer satisfaction levels are less than the technical service standards, this would indicate there is an issue with customer's perception of the service.

#### R5 Customer Wants and Needs

Council has determined the wants and needs of customers through formal and informal consultation with the community over many years and the Water Services Rate Payer Survey<sup>8</sup> carried out in late 2005.

## **R5.1** Water Services Ratepayers Survey

In late 2005 Council developed a questionnaire to assess ratepayers attitudes towards water, wastewater and stormwater services within communities serviced by a Council scheme. The objectives of the ratepayer survey are to:

- Identify ratepayer priorities and preferences for levels of service
- Provide information on ratepayer priorities
- Ensure that data about ratepayer priorities and preferences is sufficiently nuanced to allow trends to be identified
- Establish a survey instrument which will provide benchmark data against which future performance and infrastructural developments can be assessed

-

<sup>8</sup> Ratepayer Expectations for Level of Service for Water Services in Selwyn District by Taylor Baines & Associates



The survey showed that ratepayers in Selwyn District Council have a high level of satisfaction with their current wastewater services. They are also very satisfied with the responsiveness of the Selwyn District Council in these areas, and believe they are getting good value for money for their rates in regard to water services.

## **R6** Matters for consideration

# **R7** Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Plan).

Table R.4 - Improvement Plan

IMPROVEMENT NUMBE R	ITEM	DESCRIPTION
IP R1	Consultation with community regarding Levels of Service	The approach and Levels of Service are subject to the Special Consultative Procedure as set out in the Local Government Act 2002. This will occur as part of an organisation-wise consultation programme.
IP R2	Develop dashboard reporting	Develop Graphical User Interface or 'Dashboard' to provide reporting to staff against each of the technical service standards.





# S COUNCIL AND ORGANISATION STRUCTURE, MANAGEMENT PRACTICES, SYSTEMS AND DECISION MAKING PROCESSES

# S1 Council Structure and Responsibilities

The Wastewater Schemes are owned and administered by Selwyn District Council. Selwyn District Council has overall responsibility for service delivery including formulation and implementation of management systems, policies and rules governing operation of the Wastewater Schemes. Some of these responsibilities have been delegated to Selwyn District Council's Scheme Committees and township committees. Selwyn District Council's Asset Management and EDS staff are involved in day to day management of all schemes with the exception of Selwyn Huts.

#### S1.1 Committee Terms of Reference

The township committees have Terms of Reference that give clear direction on responsibilities. These committees are elected from nominations from the community and Council members on a three yearly basis.

Selwyn Huts is managed by management committee that is responsible for all areas of the community.

## S2 Organisation Structure

#### S2.1 General

Council manages its Wastewater Scheme assets through the Asset Management Department. The structure of Asset Management Department and the relationship with EDS and the Chief Executive is detailed in Table S1 below.

# S2.2 Asset Management

The Asset Management Department is responsible for the management of Utilities (water and wastewater), roading, property management, green spaces, solid wastes, land drainage, stormwater, water races and rural fires. An organisational review (EDS/Assets) in 2006 may alter the structure of the groups but not the underlying responsibilities.

## S2.3 Engineering and Design Services (EDS)

Engineering and Design Services (EDS) business unit is responsible for providing the Council with appropriate technical and supervisory engineering services to enable the districts roads, bridges, and drainage systems, water supplies, wastewater schemes and other public utilities to be satisfactorily maintained and enhance.

<sup>&</sup>lt;sup>9</sup> Councils policy on – Functions, Duties and Powers of the Community Committees with regard to Community Utilities dated 16<sup>th</sup> November 2005



The overall goal<sup>10</sup> for EDS is:

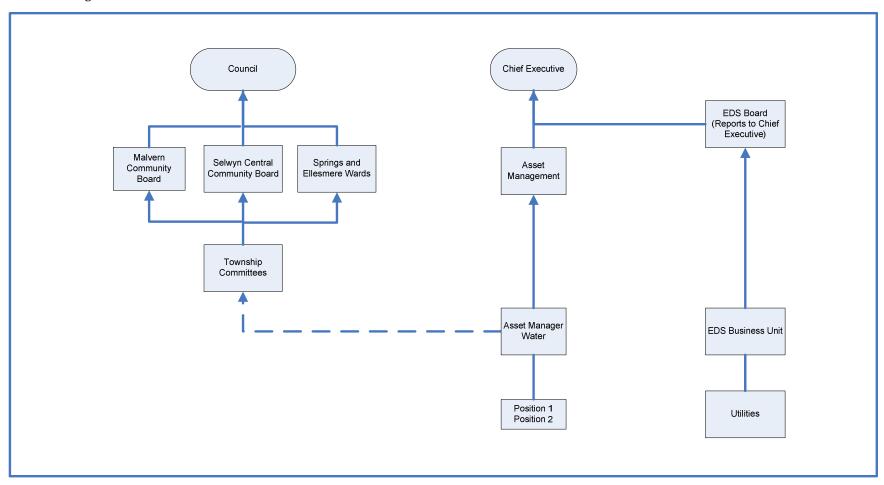
To provide high-quality and efficient engineering services to the Council

The objective of EDS is:

To complete individual projects with the most appropriate combination of design, cost and completion date in the most efficient manner



**Table S.1 - Organisation Structure** 





# S3 Management Practices, Data Systems and Decision Making Processes

#### S3.1 Asset Management Systems

#### S3.1.1 Hansen Infrastructure Management System (IMS)

The Hansen IMS system includes modules for sewer, stormwater, water, plant, customer service and work management and planning.

Hansen is currently utilised for wastewater, stormwater, water and plant as an asset register and is informally used to record maintenance history. It is intended to formalise all processes relating to updating of the asset register and recording maintenance history in 2005/06. The system could then easily be extended to include Water Races, Land Drainage assets and work history.

#### S3.1.2 GIS

Council has implemented Map Info as its GIS system. GIS is fully integrated with the Hansen IMS system. The GIS will be a major investigative tool as part of the analytical process to determine maintenance and replacement programmes. The GIS system is available to all Council Staff (at all Service Centres) and used extensively through all Councils activities.

#### S3.1.3 Networking Modelling

Network modelling software allows Council staff to effectively manage the wastewater network distribution system through simulation of the existing and future networks.

Council uses external consultants for supplying the network model simulation programme for managing the network and identifying network inefficiencies. There are currently models for Rolleston and Lincoln. Models are required for the remainder of the schemes to ensure future development can be facilitated and renewals to be based on reliable data. This is identified earlier as IP I1.

#### S3.1.4 Asset Management Data

There is currently no electronic work history held for wastewater schemes but a paper based work history has been in operation for 3 years. It is proposed to complete the implementation of Hansen in early 2006. The completion of the Hansen Asset Information System will achieve the following outcomes:

An accurate Asset Register updated on a timely basis with quality assurance processes and justified audit tracking of changes to existing assets.

- Integration with Maintenance Contract for:
  - Cost Claim Processing
  - Appropriate Key Performance Indicator measurement
  - Management of Planned Maintenance
  - Effective Operational and Failure Analysis Data Capture
  - Asset Validation
  - Audit Recording by Contractor and by Council staff
  - Associated Contract Reporting



- Integration with Selwyn District Council customer complaints system to track a request for service and the subsequent provision of service by the Contractor or Council staff
- Robust Capital Works Process that allows reporting on assets decommissioned, replaced or vested during the period including plant/equipment assets
- Enable recording of sewer main CCTV inspections

## S3.2 Accounting / Financial Systems

The Activity relies on the Council's core financial systems, which includes:

- NCS Accounts Payable, Fixed Assets, Inventory, Time Entry, Work Orders, and General Ledger.
- ??? Accounts Receivable, Cash Receipting, Bank Management and Rates, plus inputs from other Local Government regulatory systems such as Person/Property, Infringements, Licensing, Consents, etc.

All Council activities are required to have their financial results reported externally in a way that complies with generally accepted accounting practice (GAAP) in New Zealand. This is currently in accordance with Financial Reporting Standards (e.g. FRS-3) and Statements of Standard Accounting Practice (e.g. SSAP 16). These SSAPs and FRSs are determined by the Institute of Chartered Accountants of New Zealand. The Finance Activity ensures that GAAP is complied with by regular updates to the Council's Accounting Manual, and the ongoing formal and informal training and education of staff in departments throughout the Council.

#### S3.3 Asset Management Processes

Table S.3 sets out the current state of Selwyn District Council's Asset Management business processes and the desired business processes Asset Management intend to develop in the next few years.

The 12 Month Target is intended to indicate where the Business Practice will be in 12 Months time following the completion of the Hansen implementation.



# **Table S.2 Level of Current Business Process**

Current Business Process	Key	Attention Required by	Response Required
Requires attention		Executive Management	Action plans and management responsibility specified
Basic		Senior Management	Management responsibility specified
Appropriate Best Practice		Specific monitoring or response procedures	Management responsibility specified
Comprehensive		Routine procedures	Unlikely to need specific application of resources

**Table S.3 - Asset Management Business Practices** 

Process	Desired Business Processes	Current Business Processes	Competence	Improvement Item	12 Month Target
	Community Outcomes Consultation results incorporated into levels of service	A stated level of service.	Appropriate Best Practice		Comprehensive
Level of Service	High level performance measures with associated technical KPI to enable compliance reporting	High level and Technical KPIs defined in 2003 but no processes developed to measure and report on these	Basic	R1	Comprehensive
	Customer feedback surveys	Customer feedback survey initiated for ascertaining performance levels	Basic	R1	Comprehensive
Organisation issues	Corporate sponsorship and commitment through out senior management	Low level of corporate sponsorship	Basic		Appropriate Best Practice
	High level of staff skills	Low level of skills	Basic	S1	Appropriate Best Practice
	On going training programmes	Low level of training	Basic	S1	Appropriate Best Practice
Knowledge of Assets	Comprehensive data collection system for consultants and internal staff.	Data capture programme for validation of GIS wastewater network database in place.	Basic	To be resolved by mid 2006	Comprehensive
		Process for new as-builts, and subdivision vested assets to be entered into GIS and IMS database.	Basic	To be resolved by mid 2006	Comprehensive
	Establish an automated data collection system for maintenance activities undertaken by contractors and operations staff.	Attribute and condition information collected from some of the maintenance activities undertaken by contractors and operations staff (SICON).	Basic	To be resolved by mid 2006	Comprehensive



Process	Desired Business Processes	Current Business Processes	Competence	Improvement Item	12 Month Target
		No data collected from other contractors working on facilities.	Requires Attention	E6	Comprehensive
	Improved Asset Management system for maintaining asset maintenance history.	Asset management system in place to maintain asset maintenance history but not fully implemented or integrated.	Basic	To be resolved by mid 2006	Comprehensive
	Electronic collection and transfer system in real time.	Process for collection of data from maintenance (SICON) presently paper based.	Basic	To be resolved by mid 2006	Appropriate Best Practice
Condition Assessment	Inspection programme cycles based on criticality and condition.	Inspection programme cycles based on criticality and condition.	Appropriate Best Practice		Appropriate Best Practice
	Use of industry documents (condition rating manual)	Condition rating manual used in condition assessments	Appropriate Best Practice		Appropriate Best Practice
		CCTV manual not used	Requires Attention	Work programmed for 2006/07	Appropriate Best Practice
Risk Management	Critical assets monitored and failure modes understood.	Risk management is practised informally, based on the knowledge of experienced staff.	Basic	N3	Appropriate Best Practice
Accounting / Economics	Level of deferred maintenance identified through condition rating.	Deferred maintenance identified through non completion of renewals and maintenance contract	Basic		Appropriate Best Practice
	Valuation optimised by criticality, capacity and system redundancy.	Valuation based on existing asset register.	Appropriate Best Practice		Appropriate Best Practice
Maintenance	Measurement of actual performance against level of service indicators.	No measurement of actual performance against level of service indicators.	Requires Attention	E2 and reporting requirements for LOS	Comprehensive
	Performance outcomes included in maintenance agreement	Performance outcomes not included in maintenance agreement	Requires Attention	E2 and reporting requirements for LOS	Requires Attention
Performance Monitoring	Range of performance standards developed for service delivery contracts.	Range of performance standards developed for service delivery contracts.	Appropriate Best Practice		Appropriate Best Practice
	Processes for monitoring compliance with performance standards.	No reporting carried out except when requested by Environment Canterbury	Requires Attention	H1	Appropriate Best Practice



#### Wastewater Activity Management Plan

Process	Desired Business Processes	Current Business Processes	Competence	Improvement Item	12 Month Target
Optimised Life Cycle Strategy	10 year renewal programme with budgets based on predicting failure for critical assets, replacement on failure of non-critical assets.	10 year renewal programme with budgets based on predicting failure for critical assets, replacement on failure of non-critical assets.	Appropriate Best Practice		Appropriate Best Practice
	Life cycle and risk costs considered in optimisation process.	Life cycle and risk costs informally considered in optimisation process.	Appropriate Best Practice		Appropriate Best Practice
Design, Project Management	Document design and project management procedures.	Contract management procedures defined.  Basic life cycle cost assessment of design options.	Appropriate Best Practice		Appropriate Best Practice
		Project management procedures partially documented	Basic	E6	Appropriate Best Practice
	Improved contract management with quality assurance programmes.	Contract management with little quality assurance	Basic	E6	Basic
QA / Continuous Improvement	System of quality checks on work activity and data collection in place.	Some inspection of work undertaken but no formal process for quality assurance.	Basic	E6	Appropriate Best Practice



# S4 Asset Information Security

The responsibility for asset information security rests with the IT department administrators. The data is backed up at regular intervals and backup files are stored in secure lock-ups. Each system has a stepped password access system in place, allowing some staff to view the data only, and others to add and edit it. Data manuals are available that explain the various procedures.

# S5 Information Flow Requirements and Processes

Table S4 sets out the current state of information flow requirements and processes within the Asset Management area and the desired practices it is intended to develop in the next few years. Appendix V details development, improvements, priorities and costs.



# **Table S.4 - Asset Management Processes**

Process	Desired Business Processes	Current Business Processes	IP Number
Asset Registers	Integration of IMS & GIS databases Complete data capture and input Continue data validation	Integration of IMS & GIS databases  Data capture of new assets and validation of existing data still required	S3
Maintenance Management	Complete collection of maintenance history from records held Critical and non-critical assets identified	No maintenance history held	S3 and E7
Condition Monitoring	Condition data in IMS and linked to asset register	High level of AC main condition sampling	S3
Customer Enquiries	Corporate approach to customer enquiries through IMS	Electronic record of customer enquiries	
Optimised Renewal Strategy	Life cycle costs taken into account in assessing renewal options Renewal strategy in place IMS advanced ORDM module	No IMS capability	15
Forward Works Programme	10-year forward maintenance and renewal programme for wastewater schemes network from IMS	Limited maintenance forward programmes  Development needs based on thorough assessment of needs	
Integration of Systems	GIS fully integrated with IMS	GIS fully integrated with IMS.	
As Built Plans	As Built plans in GIS database (100%) Integrated use of GIS for plan and record requirements	As Built plans in GIS database (90%) Use of CAD systems for engineering design plans	
Operations and Maintenance Manuals	Manual developed defining system maintenance requirements, standards and specifications	Variable levels of Operational manuals	E3
Levels of Service	Reports generated using IMS and Service Request databases	No yearly reports generated	R2
GIS	Further development of spatial reporting and results modelling	Mapinfo used for spatial representation of assets	



## S6 Operations and Maintenance Standards, Specifications and Guidelines

The following details the Key Standards and Guidelines that are used in the management and operation of the district water supplies.

Table S.5 - Key Standards and Guidelines

Standard	Details			
Legislative Standards				
	Building Act 2004			
	Health Act 1956			
	Local Government Act 1974			
	Public Works Act 1981			
	Resource Management Act 1991			
	Council Policies			
	Local Government Act 2002			
	Civil Defence Emergency Management 2002			
	Local Government (Rating Act) 2002			
	Climate Change Response Act			
	National Environmental Standards			
Technical Standards				
Design	NZS / AS3725: 1989 - Loads on Buried Pipes			
	The New Zealand Building Code			
Materials	NZS 4442 - 'Welded Steel Pipes and Fittings for Water, Sewerage and Medium Pressure Gas'			
	TNZ M/1: 1995 - Asphaltic Bitumen's			
	TNZ M4/AP40: 1985 - Crushed Basecourse Aggregate			
	TNZ M/10: 1975 - Asphaltic Concrete			
Construction and Maintenance	NZS 3910: 2003 - Conditions of Contract for Building and Civil Engineering Construction			
	OSH - Approved Code of Practice - Excavation			
	OSH - Approved Code of Practice for Safety in "Excavation and Shaft for Foundations"			
Asset Management	International Infrastructure Management Manual - 2002			
	Creating Customer Value from Community Assets Manual - 2002			
	New Zealand Pipe Inspection Manual 1999			
	The New Zealand Infrastructural Asset Grading Guidelines (1999)			
Operational Manuals				
	Various operation manuals held by SDC			



## S7 Human Resources

#### S7.1 Overview

Significant increase in population and associated infrastructure is expected to occur over the next 10 years. Assessment is required on an ongoing basis (annually) to ascertain the appropriate staffing requirements for the increased workload. This assessment needs to include skill requirements to meet the demands of the increased population and infrastructure.

Significant increase in water (for compliance with DWS2005) and wastewater treatment plants will occur over the next 5 years. The complexity of these plants and their associated resource consent compliance will require skilled and trained engineers for their operation, maintenance and supervision. A review of Council policy on out sourcing the maintenance of treatment plants (water and wastewater) is required to ascertain the most appropriate method for delivery of the required levels of service - previously noted in IP E2.

### S7.2 Staff Delegations

No alterations to or new delegations have been shown to be required in this Activity Management Plan.

#### S7.3 Warrants

No alterations to or new Warrants have been shown to be required in this Activity Management Plan.

## S7.4 Training Needs Analysis

Training of staff is presently on an ad-hock basis with no structured long term development plans for the individual staff members. To ensure that all staff are familiar with current trends and have a understanding of Councils long term requirements, an individual training needs programme will be developed. (IP S1)

## S7.5 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture.

In previous decades the pool of experienced local authority and ex-public service engineers available meant that the negative effects of poor succession planning were not experienced. With a shrinking pool of experienced engineers, and near full employment these effects are now being experienced by more local authorities. Whilst there is always potential for staff in key positions to move on to further their careers, succession planning can help to mitigate the effects of this.

Succession planning has been carried out in a number of areas but to ensure greater effectiveness there is a need to improve planning and implementation. Succession planning techniques can include:

- Sourcing replacement staff from within the organisation wherever possible
- Comprehensive personal career development plans in place for all relevant staff. This can
  include identifying weaknesses in training and experience and attempting to address those
  weaknesses by use of mentoring, relevant projects and continuing professional development
  programmes etc.



Identifying likely staff retirements, promotions, resignations or position changes on an
annual basis. Identifying potential internal staff to fill those positions, providing those staff
with projects that extend them, and giving them relevant experience for filling the positions.

## S8 Bench Marking

Internal Bench Marking (trending) of the Activity is to be instigated to give Managers increased understanding of:

- The efficiency and efficiency variations of individual activities within the wastewater scheme area.
- Effects of any programmes instigated by the Activity Management Plan
- Operating costs over range of individual activities within the wastewater scheme areas

Examples of types of benchmarking that are to be considered:

- Tracking progress
- Responsiveness to service calls
- Reticulation operation costs i.e. \$/m/year

Bench marking will be implemented using the following criteria:

- Levels agreed with Asset Managers
- Gives additional value to the activity
- Reporting will be on a monthly, quarterly and yearly basis
- Relevant to the ongoing wastewater supply operation
- Where practical the bench marking to be consistent over Water, Wastewater, Stormwater and Drainage
- In graphical format for improved presentation
- As trending is obtained and implications understood the benchmarking can be used for additional or revised Levels of Service. (IP S2)

### S9 Matters for Consideration

Issues relating to Council Structure, Management Structure and Decision Making Practices are shown in the Improvement Programme.

## S10 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).



## Table S.6- Improvement Plan

IMPROVEMENT NUMBER	DESCRIPTION
S1	Individual staff training needs programme to be developed
S2	Internal Bench marking (trending) of the Activity is to be instigated to give Managers increased understanding of the various utilities
S3	Asset Management processes upgraded with use of Hansen system



## T BYLAWS AND POLICIES

#### T1 Introduction

Section 146 of the Local Government Act 2002 provides that a Territorial Authority may make Bylaws in its district for the purposes of managing, regulating against, or protecting from damage, misuse, or loss, or for preventing the use of; the land, structures, or infrastructure associated with water supplies.

A policy is a plan, principle(s) or procedure(s) established by Council to help achieve the community outcomes. Policies are used in the day to day operation of the wastewater schemes as a way of indicating rules set by Council and thereby informing the community (and Council Staff) of the responsibilities of all parties.

Section 146 of the Local Government Act 2002 provides that a territorial authority may make Bylaws in its district for the purposes of regulating one or more of the following - on-site wastewater disposal systems; waste management; trade wastes and solid wastes.

Section 293 of the Local Government Act 2002 states that Bylaws made or having effect under provisions of the Local Government Act 1974 that are repealed by this Act, being Bylaws that were in force immediately before the commencement of Section 293, are deemed to be validly made under The Local Government Act 2002 and continue in force accordingly if validly made under the Local Government Act 1974.

Section 158 of the Local Government Act 2002 states that Bylaws continued by Section 293 must be reviewed within five years after the date of commencement of the Act, unless they cease to have effect before a review would otherwise be required. Bylaws made under the Local Government Act 2002 (other than those continued by section 293) must be reviewed within five years after the date on which they are made.

## T2 Bylaw Requirement

The Council presently has no bylaws that are relevant to wastewater schemes. The NZ Standard Model General Bylaws has been reviewed with the revised standard released in 2005. Standard is presently being be reviewed and amended (in conjunction with tradewaste requirements) to suit Council's requirements. It is expected that this will be completed by late 2006.

#### T3 Policies

As policies are a way of indicating strategy (or the principles), it is considered that additional policies are required covering a wider range of functions. This would give additional clarity of the functions and rules of the Township committees. Policies should be reviewed by Council on a 3 yearly basis to ensure that they remain relevant.



## T4 Council's Policy Register

There are no variances with Councils Policy Register relating to this activity.

## **T4.1** Notification of Policies

The Council has an extensive Policy Manual that is updated when any new policies are instigated by Council. The manual is accessible on the Council's website for ease of access to the community.

## **T5** Matters for Consideration

Issues relating Bylaws and Policy are:

- Additional policies are required to clearly indicate to the community the responsibilities of Council and the user
- Completion of the Bylaw that includes provisions for tradewaste for all Councils Wastewater Schemes

## T6 Improvement Plan

There are no improvements required.



## U STAKEHOLDERS AND CONSULTATION

### U1 Introduction

The Council will be carrying out significant consultation to establish the Community Outcomes for the Long Term Council Community Plan. Selwyn District Council already has a history of actively communicating with the public via:

- Extensive public consultation
- Annual Plan submissions
- Annual customer surveys
- Project teams for specific significant community projects

## U2 Statutes that include Consultation

The statutes that Selwyn District is required to undertake consultation for Wastewater Schemes include:

- LGA 2002
- RMA 1991
- Land Transport Management Act 2003
- Reserves Act 1977
- Ngai Tahu Settlement Claims Act 1998.

### U3 Consultation

### **U3.1** Consultation Policy

The Council's Public Consultation Policy states that the Council will:

- Clarify its expectations through public consultation
- Allow sufficient time for effective response to its proposals
- Report on public proposals and follow up when necessary
- Maintain the consultative process.

In addition to the Council's Consultation Policy, the Wastewater activity also takes guidance from documents such as "Creating Customer Value from Community Assets" produced by the National Asset Management Steering Group.

#### **U3.2** The Special Consultative Procedure

There are a number of instances where the Council will undertake consultation at a District wide or comprehensive level. This generally occurs when there is a requirement to use the Special Consultative Procedure as prescribed in the LGA 2002. This occurs in the following situations:



- Adopting or amending the Community Plan. The Community Plan is reviewed every three
  years with the Annual Plan giving effect to that Plan in the intervening years. The Council
  must consult on community outcomes at least every six years
- Adopting the Annual Plan
- · Adopting, amending or reviewing a Bylaw
- Proposing a change in the way a significant activity is undertaken
- Significant decisions not already provided for in the Community Plan.

The Council will decide that some decisions are significant and will therefore require a more rigorous assessment of options and a more robust consultative process. Those decisions are treated as amendments to the Community Plan and can be dealt with either separately or as part of the Annual Plan process.

#### U3.3 Council Call

A one page section in a local weekly paper is used by Council to help inform residents in the District of items of interest for the community relating to Council's activities.

### U3.4 Maori Contribution to Council's Decision Making Process

The Local Government Act requires the Council to establish processes that provide opportunities for Maori to contribute to the Council's decision-making. To facilitate this, Council has included, over a number of years, local Iwi representation on:

- Project teams associated with community projects i.e. Lincoln, Southbridge and Leeston Sewerage projects
- District Plan Committee

## U4 Key Stakeholders

The key stakeholders and the Outcomes that they require for Wastewater Schemes are detailed in Table U.1

Table U.1 - Key Stakeholders

Stakeholder	Key Outcome (s)		
Selwyn District Council customers	Reliable service that is economically viable		
Selwyn District Council	Maximise social and economic benefits of the drain network to the district		
Department of Conservation	Enhance conservation value of natural waterways (ie rivers/streams)		
Fish and Game	Enhance rivers as sport fishery		
Local Iwi/Ngai Tahu	Enhance waterways and Te Waihora for Mahinga kai, cultural/spiritual values		
Lake Ellesmere Eel Management Committee	Enhance value of waterways		
Te Waihora Trust	Enhance wildlife/conservation value of Te Waihora		
Royal Forest and Bird	Enhance wildlife/conservation value of waterways		
Wider Community	Enhance landscape and aesthetic values of farmland and Plains		



## U5 Future Consultation Required

Developments and proposals that will require public consultation in the future are:

• Wastewater bylaw that will contain provisions for tradewastes

## **U6** Matters for consideration

There are no matters for consideration.

## U7 Improvement Plan

No improvements have been shown to be required.





## V IMPLEMENTATION AND IMPROVEMENT PLAN

## V1 Background

An important component of this Activity Management Plan is the recognition that it is a "live" document in need of monitoring, change and improvement over time.

This section sets out Plan improvement and monitoring procedures (Including Training Needs Analysis & Programme).

## V2 Improvement Programme

The development of this Plan is based on existing levels of service, the best available current information and the knowledge of Council Staff. This Activity Management Plan will be the subject of annual updating and incremental improvement over time with the second formal review required in 2008/09.

The continued monitoring of these performance measures and ongoing analysis of results will result in:

- Savings in expenditure through lifecycle optimisation
- Service levels actively monitored and reported on
- Management of risk and control of failures
- Measurement of Activity Management Plan Effectiveness

## V3 Improvement Plan Focus

The Selwyn District Council wastewater schemes Improvement Plan will be focused on the following key areas:

- Scheme knowledge update
- Renewals
- Human Resources/Customer Services
- Enhanced Maintenance
- Asset Management

## V4 Improvement Programme

Table V1 below details the overall Improvement Plan along with risk sensitivity.



## **Table 14-4 Overall Improvement Programme**

IP	Project Description		Risk Sensitivity	Expenditure Required	Funder	Date for Completion
A1	Enhancement of relationship with IWI will be undertaken by the Asset Manager Water by increased discussions on issues that effect both Iwi and Council in relation to water services		6	-	SDC "In-house"	2006/07 onward
C1	Monitor the public heath issues for settlements not serviced by a community wastewater scheme	15/30	5	\$5,000	Council Wide	2006/07 onward
D1	An enhanced valuation process is required to reduce the time and associated costs associated with the valuation	13/30	6	-	SDC "In-house"	2007/08
E1	Investigate the Reliability Centred Maintenance approach for facilities (treatment facilities, pump stations etc)		5	\$5,000	Spread over all Water and Wastewater Schemes	2006/07
E2	A review of Council policy on out sourcing the maintenance of treatment plants (both water and wastewater) is required to ascertain the most appropriate method for delivery of the required levels of service.	20/30	8	\$5,000	Spread over all wastewater schemes	2006/07
E3	Comprehensive Operation Manuals will be produced for the wastewater networks and facilities	18/30	6	\$41,000	Individual Scheme	2006/07
E4	A review of the maintenance contract to ensure that any new contract will allow increased control on expenditure	17/30	6	\$10,000	Spread over all water/wastewater schemes	2006/07
E5	Agreement between maintenance contractor and Selwyn Huts Management Committee for the management and operation.	19/30	7	-	SDC "In-house"	2006/07
E6	Detailed agreement is required that indicates the responsibilities and requirements of EDS and the Asset Management Department	20/30	9	\$2,500	Asset Management	2006/07
E7	Additional investigations required on criticality and update ranking in Hansen	13/30	6	\$5,000	Spread over all Water & Wastewater schemes	2006/07



E8	Staff and Contractor training programme(sampling)	18/30	8	-	SDC "In-house"	2006/07
E9	An financial reporting database (associated with NCS) to track monthly and yearly variances be implemented		6	\$10,000	Spread over all Water & Wastewater schemes	2006/07
F1	Centralised population file that includes population predictions annually updated be instigated	19/30	9	-	SDC "In-house"	2005/06 onward
F2	Demand management practices be instigated	18/30	6	\$5,000	Spread over all Wastewater schemes	2006/07 onwards
F3	Investigations into the integration of wastewater treatment and disposal to ascertain the viability and economics of a central treatment and disposal facility which services the majority of the Council serviced communities in the plains area	20/30	10	\$50,000	Council Wide	2006/07 onwards
H1	Global consent that includes ongoing risk management assessments of each wastewater scheme to be instigated for compliance with Rule WQL 45 of the PNRRP	18/30	8	\$60,000	Spread over all wastewater schemes	2006/07 onwards
H2	Enhancing the resource consents database for more efficient management that incorporates reporting of compliance	16/30	6	\$2,500	Spread over all schemes	2006/07
H3	Records showing Council easements across private property recorded in one area and shown on GIS. All existing and future property agreements be stored on the individuals property file and flagged electronically	9/30	5	-	Individual Schemes	2006 onward
I1	Calibrated hydraulic modelling of the remaining communities and associated updating asbuilts (Manhole inverts)	14/30	5	\$68,250	Individual Scheme	2007/08 & 2008/09
I2	Projects data base considered for replacement or enhancement	23/30	5	-	Council Wide	2006/07
13	Validation of condition and performance of sewer network	17/30	8		Individual Scheme	2006/07
I4	Implementation of critcal asset analyses	16/30	9	-	Asset Management	2006/07
15	Implementation of ODM	14/30	5	-	Asset Management	2006/07

## Wastewater Activity Management Plan

J1	Review of the existing depreciation funding policy is required to ensure that the long term renewals funding will be appropriate in the future.		8	\$3,000	Council Wide	2006/07
N1	The benefits of succession planning and how this might be implemented should be investigated		7	-	Asset Management	2006/07
N2	System Audits will be undertaken		5	\$3,000	Spread over all Water & Wastewater schemes	2006/07
N3	Risk control schedule	16/30	6		Spread over all schemes	2006/07
R1	Consultation with community regarding Levels of Service	24/30	6	-	Council Wide	2005/06
R2	Develop dashboard reporting	15/30	6	\$5,000	Spread over all Water & Wastewater schemes	2006/07
S1	Individual training needs programme to be developed	13/30	9	\$5,000	Spread over wastewater scheme	2006/07
S2	Internal Bench marking (trending) of the Activity is to be instigated to give Managers increased understanding of the various utilities	17/30	6	\$5,000	Spread over wastewater scheme	2006/07
S3	Asset Management processes upgraded with use of Hansen system	25/30	9	\$58,000	Spread over wastewater scheme	2006/07
X1	Training requirements for Council staff on Activity Management Plans	17/30	6	\$5,000	Asset Management	2006 onward

## **Table 14-5 Risk Category**

Risk	Risk Treatment Key	Attention Required by	Response Required
Extreme (11-12)		Executive Management	Action plans and management responsibility specified
High (8-10)		Senior Management	Management responsibility specified
Medium (4-7)		Specific monitoring or response procedures	Management responsibility specified
Low (1-3)		Routine procedures	Unlikely to need specific application of resources



## W DISPOSAL REQUIREMENTS

## W1 Introduction and Background

The development of Asset Management Systems and use of Asset Condition/Performance data allows better planning for the disposal of assets through rationalisation of asset stock or when assets become uneconomic to own and operate.

All pipeline renewals identified in Appendix F have a corresponding disposal either through the pipes being removed and disposed of at the landfill, or being left in the ground if the wastewater schemes are renewed using 'no-dig' techniques. A work order will record each disposal put in the Hansen database. Similarly, replacement of components at treatment plants and pumping stations usually involves disposal of those items being renewed / upgraded.

## W2 Future Approach

In all cases asset disposal processes must comply with Council's legal obligations under the Local Government Act 2002, which covers:

- Public notification procedures required prior to sale
- Restrictions on the minimum value recovered
- Use of revenue received from asset disposal

When considering disposal options all relevant costs of disposal will be considered, including:

- Evaluation of options
- Consultation/advertising
- Obtaining resource consents
- Professional service, including engineering, planning and legal survey
- Demolition/making safe
- Buried assets remain in the ground unless economic to remove or they pose a potential hazard

The use of revenue arising from the sale of any assets shall be decided by Council at the time of its consideration of disposal.

### W3 Matters for consideration

It is intended that once the completion implementation of Hansen has occurred, then Asset Disposal Certificates will be provided to the Asset Management Section who will record the changes and notify the Finance Department for updating of the Fixed Asset Register as part of a comprehensive capital work recording process (asset audit tracking).

## W4 Improvement Plan

No improvements have been shown to be required.



## X FUTURE USE OF THE WASTEWATER ACTIVITY PLAN

### X1 Background

Historically Asset Management Plans have been carried out for regulatory requirements and not used on an ongoing basis. To ensure the wastewater Activity Plan is used to its full potential the following briefly discusses the methodologies and options for the ongoing implementation and updating of the Water Supplies Activity Management Plan.

## X2 Development of an Organisation Culture of Asset Management

The ongoing and successful implementation and development of asset management requires an organisational culture of asset management to be developed. To be successful the asset management culture needs to consistently modelled and supported by the Chief Executive and senior managers in conjunction with the elected Council.

Effective stewardship and management of Selwyn Districts Councils major investment (assets) will not occur in the long term without a culture of asset management.

## X3 Resourcing of Asset Management Programmes

Asset management programmes must be adequately resourced and there for requires ongoing budget to deliver identified improvements and keep plans and processes current with evolving practice. For asset management to be successful in Selwyn District there must be a commitment recognised across the organisation. This commitment must translate into budget, human resources, and management accountability.

## X4 Ongoing use of the Activity Management Plan

Methodology for the ongoing (day to day) use, implementation and updating of the Activity Management Plan includes:

- Training of people for the use of the plan
- Future reporting requirements
- Indicate how its Activity Plans are best going to be used within Selwyn District Council to enable the appropriate staff to take ownership of the plans or sections within those plans

Ensuring the individual positions (people) are aware of their responsibilities and reporting requirements as detailed in the different sections within the AMP. (X1)

## X5 Roles and Responsibilities of Council Staff

The roles and responsibilities of Council staff as they relate to the Activity Management Plan implementation need to be defined in respect to the ongoing use of the plan as this will enable the Plan to remain relevant and current. To enable this to occur the following is required:

The Activity Management Plans adopted/accepted by staff down to a defined level



- Council Staff to know what's in the plans and how it could affect their day to day work
- Council Staff to understand the reasons for the plan and the implications for the long term use of them
- Understand all the reporting requirements for Levels of Service and Internal Benchmarking
- Training required in the use of the Plan (what's in it, how work is done, on-going requirements for monitoring, review and updating)
- Instigation of processes to encourage Council Staff to use the Plan

### **X6** Matters for consideration

Matters for consideration relating to the Future Use of the Water supplies Activity Plan are shown in the Improvement Plan.

## X7 Improvement Plan

The following items have been included in the Improvement Plan with all items noted in the overall improvement programme as detailed in Appendix V (Implementation and Improvement Programme).

Table X.1 - Improvement Plan

IMPROVEMENT NUMBER	DESCRIPTION
X1	Training requirements for Council staff on Activity  Management Plans



# Y GLOSSARY OF TERMS

Term	Definition
Activity	The work undertaken on an asset or group of assets to achieve a desired outcome.
Advanced Asset Management	Asset management which employs predictive modelling, risk management and optimised renewal decision making techniques to establish asset lifecycle treatment options and related long term cashflow predictions. (See Basic Asset Management).
Annual Plan	The Annual Plan provides a statement of the direction of Council and ensures consistency and coordination in both making policies and decisions concerning the use of Council resources. It is a reference document for monitoring and measuring performance for the community as well as the Council itself.
Annual Report	The audited report published annually (by 30 November) which provides information on how the Local Authority has performed with respect to its policies, objectives, activities, targets, budgets and funding proposals.
Asset	A physical facility of value which enables services to be provided and has an economic life greater than 12 months.
Asset Management (AM)	The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.
Asset Management Plan	A plan developed for the management of one or more infrastructure assets that combines multi- disciplinary management techniques (including technical and financial) over the lifecycle of the asset in the most cost effective manner to provide a specified level of service. A significant component of the plan is a long term cashflow projection for the activities.
Asset Management Strategy	A strategy for asset management covering, the development and implementation of plans and programmes for asset creation, operation, maintenance, renewal, disposal and performance monitoring to ensure that the desired levels of service and other operational objectives are achieved at optimum cost.
Asset Management System (AMS)	A system (usually computerised) for collecting analysing and reporting data on the utilisation, performance, lifecycle management and funding of existing assets.
Asset Management Team	The team appointed by an organisation to review and monitor the corporate asset management improvement programme and ensure the development of integrated asset management systems and plans consistent with organisational goals and objectives.
Asset Register	A record of asset information considered worthy of separate identification including inventory, historical, financial, condition, construction, technical and financial information about each.
Asset	A physical component of a facility which has value, enables services to be provided and has an economic life of greater than 12 months.
Benefit Cost Ratio (B/C)	The sum of the present values of all benefits (including residual value, if any) over a specified period, or the life cycle of the asset or facility, divided by the sum of the present value of all costs.
Business Plan	A plan produced by an organisation (or business units within it) which translate the objectives contained in an Annual Plan into detailed work plans for a particular, or range of, business activities. Activities may include marketing, development, operations, management, personnel, technology and financial planning
Cash Flow	The stream of costs and/or benefits over time resulting from a project investment or ownership of an asset.
Components	Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.
Condition	Continuous or periodic inspection, assessment, measurement and interpretation of resulting data, to indicate the condition of a specific component so as to determine the need for some



Term	Definition
Monitoring	preventive or remedial action
Consequence	The outcome of an event expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain. There may be a range of possible outcomes associated with an event
Critical Assets	An asset where failure would have significant consequences, either in the ability of the system to provide service to customers or the effect on the environment.
Current Replacement Cost	The cost of replacing the service potential of an existing asset, by reference to some measure of capacity, with an appropriate modern equivalent asset.
Deferred Maintenance	The shortfall in rehabilitation work required to maintain the service potential of an asset.
Demand Management	The active intervention in the market to influence demand for services and assets with forecast consequences, usually to avoid or defer CAPEX expenditure. Demand management is based on the notion that as needs are satisfied expectations rise automatically and almost every action taken to satisfy demand will stimulate further demand.
Depreciated Replacement Cost (DRC)	The replacement cost of an existing asset after deducting an allowance for wear or consumption to reflect the remaining economic life of the existing asset.
Depreciation	The wearing out, consumption or other loss of value of an asset whether arising from use, passing of time or obsolescence through technological and market changes. It is accounted for by the allocation of the historical cost (or revalued amount) of the asset less its residual value over its useful life.
Economic life	The period from the acquisition of the asset to the time when the asset, while physically able to provide a service, ceases to be the lowest cost alternative to satisfy a particular level of service. The economic life is at the maximum when equal to the physical life however obsolescence will often ensure that the economic life is less than the physical life.
Facility	A complex comprising many assets (e.g. a water treatment plant, recreation complex, etc.) which represents a single management unit for financial, operational, maintenance or other purposes.
Frequency	A measure of the rate of occurrence of an event expressed as the number of occurrences of an event in a given time
Geographic Information System (GIS)	Software which provides a means of spatially viewing, searching, manipulating, and analysing an electronic data-base.
IMS	Hansen IMS software - Asset Management software product purchased as result of PAMS project.
Infrastructure Assets	Stationary systems forming a network and serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and refurbishment of its components. The network may include normally recognised 'ordinary' assets as components.
Level of service	The defined service quality for a particular activity (i.e. sewerage) or service area (i.e. sewage disposal) against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental acceptability and cost.
Life	A measure of the anticipated life of an asset or component; such as time, number of cycles, distance intervals etc.
Life Cycle Cost	The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
Maintenance Plan	Collated information, policies and procedures for the optimum maintenance of an asset, or group of assets.
Maintenance Standards	The standards set for the maintenance service, usually contained in preventive maintenance schedules, operation and maintenance manuals, codes of practice, estimating criteria, statutory regulations and mandatory requirements, in accordance with maintenance quality objectives.
Maintenance	All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal.
NZPIM	New Zealand Pipe Inspection Manual - National manual for inspecting and scoring wastewater



	pipes. Published by NZWWA - Second Edition March 1999.
NZWWA	New Zealand Water and Wastes Association - National industry association formed for the advancement and application of fundamental and practical knowledge to natural water resources, water use and wastes.
O&M - Operations & Maintenance Expenditure	The cost of operating and maintaining assets. O&M expenditure does not alter the value of an asset and is not included in the asset valuation.
Objective	An objective is a general statement of intention relating to a specific output or activity. They are generally longer term aims and are not necessarily outcomes that managers can control.
ODRC - Optimised Depreciated Replacement Cost	The ORC after deducting an allowance for usage to reflect the remaining life of the asset.
Operation	The active process of utilising an asset which will consume resources such as manpower, energy chemicals and materials. Operation costs are part of the life cycle costs of an asset.
Optimised Renewal Decision Making (ORDM)	An optimisation process for considering and prioritising all options to rectify performance failures of assets. The process encompasses NPV analysis and risk assessment.
ORC - Optimised Replacement Cost	The minimum cost of replacing an existing asset by another asset offering the same utility most efficiently. The optimisation process adjusts the value for technical and functional obsolescence, surplus assets or over-design.
Outcome	The end result for the community which Council hopes to achieve.
Output	Services, actives or goods produced by Council which contribute to achieving an outcome.
Performance Measure	A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.
Performance Monitoring	Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards.
Rehabilitation	Works to rebuild or replace parts or components of an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification. Generally involves repairing the asset using available techniques and standards to deliver its original level of service (i.e. heavy patching of roads, slip-lining of sewer mains, etc.) without resorting to significant upgrading or replacement.
Renewal	Works to upgrade, refurbish, rehabilitate or replace existing facilities with facilities of equivalent capacity or performance capability.
Renewal Accounting	A method of infrastructure asset accounting which recognises that infrastructure assets are maintained at an agreed service level through regular planned maintenance, rehabilitation and renewal programmes contained in an asset management plan. The system as a whole is maintained in perpetuity and therefore does not need to be depreciated. The relevant rehabilitation and renewal costs are treated as operational rather than capital expenditure and any loss in service potential is recognised as deferred maintenance.
Repair	Action to restore an item to its previous condition after failure or damage.
Replacement	The complete replacement of an asset that has reached the end of its life, so as to provide a similar, or agreed alternative, level of service.
Risk	The chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and the likelihood of a particular risk
Risk Assessment	The overall process of risk analysis and risk evaluation
Risk	Risk Management is the systematic application of management policies, procedures and practice



Term	Definition
	Local Authority from achieving its strategic or operational objectives or Plans or from complying withits legal obligations
Routine Maintenance	Day to day operational activities to keep the asset operating (replacement of light bulbs, cleaning of drains, repairing leaks, etc.) and which form part of the annual operating budget, including preventative maintenance.
Service Potential	The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset.
Strategic Plan	Strategic planning involves making decisions about the long term goals and strategies of an organisation. Strategic plans have a strong external focus, cover major portions of the organisation and identify major targets, actions and resource allocations relating to the long term survival, value and growth of the organisation.
Unplanned Maintenance	Corrective work required in the short term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.
Upgrading	The replacement of an asset or addition/ replacement of an asset component which materially improves the original service potential of the asset.
Valuation	Estimated asset value which may depend on the purpose for which the valuation is required, i.e. replacement value for determining maintenance levels or market value for life cycle costing.



# Z REFERENCES AND ACKNOWLEDGEMENTS

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# **BB** CHANGE REGISTER

Change Number	Description of Change	Section Affected	Change Reviewed by		Change Approved by		Change Actioned by	
			Initial	Date	Initial	Date	Initial	Date
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