

For:	2009 Hynds Paper of the Year	
To:	INGENIUM	
Category:	Asset Management	
Title:	5Waters – Sustainable Activity Management Planning	
Authors:	Hugh Blake-Manson CPeng, Int(PE) Asset Manager Utilities hugh.bm@selwyn.govt.nz	Rob Blakemore, CPeng FIPENZ Manager Environmental Training Centre Rob.Blakemore@opus.co.nz
Organisation:	Selwyn District Council PO Box 90, Rolleston 7643 New Zealand	138 Hutt Park Road PO Box 30 845 `Lower Hutt New Zealand
Abstract: Max 200 words	<p>A purpose of New Zealand's Local Government Act 2002 is to deliver sustainable development. Local Authorities (Councils), through their Asset Management groups, are moving rapidly to achieve this purpose using the vehicle of Activity Management Plans (AcMP).</p> <p>The International Infrastructure Management Manual (IIMM) guides AcMP development. The guidelines follow robust and traditional engineering principles – arguably sustainability is not a priority component. The challenge for each of the now Councils is to make a solid connection between comprehensive AcMP and sustainable development without national assistance. This is very inefficient, as all councils have common functions and should be able to share expertise and intellectual property.</p> <p>Through a mutually beneficial Professional Service Contract, Selwyn District Council and OPUS International Consultants assessed Selwyn's 5 water services (5Waters) as one AcMP. We used a forward-thinking, interconnected set of tools; which make clear the consequences of <u>not</u> changing current and future levels of service, when assessing costs and benefits.</p> <p>The tools include: integration of the 5Waters, derivation of common LoS and a scalable, transferable programme which prioritises future works based on contributions to LoS for future generations. This sets a new and clearly sustainable AcMP direction for the Council and its community. This process is also transferable to other Councils, with necessary local adaptation.</p>	

1.0 Identification of the Issues

1.1 Setting the Scene - The 5Waters

The Selwyn District Council (hereafter council) is a local authority situated in the South Island of New Zealand - cf. Figure 1-1. One of 75¹ in New Zealand, council is in many ways a typical example of the majority of its 74 namesakes as a provider of “core business” activities. Core business is considered to be delivery of water, waste, transportation, regulatory and cost recovery services.

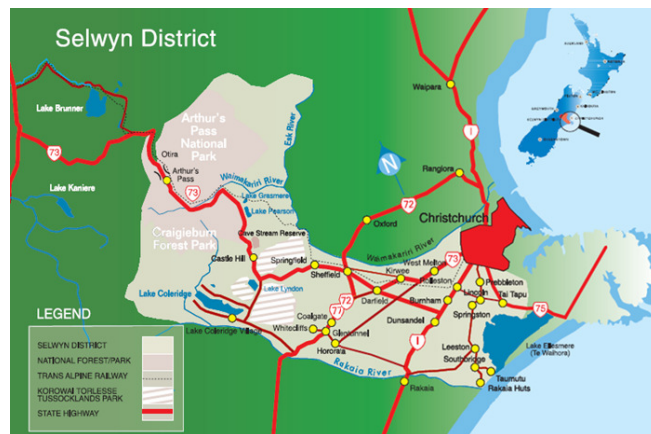
Council is located in the heart of the Canterbury Region’s groundwater zone. How and where water for human, agricultural, cultural and recreational uses is managed is of considerable interest to Cantabrians. The 5Waters Activity is already considered to be a significant one. Council has consistently regarded the provision of the 5Waters as vital to maintaining the community’s health and well-being.

Council sustains more than 70% or 26,000 people of its community via 30 independent and distinct community water service areas. Water service areas are a component of the 80 services areas within the 5Waters Activity. The 5Waters are:

#	Type	# Service Areas
i.	Water	30
ii.	Wastewater	17
iii.	Stormwater	19
iv.	Land Drainage	11
v.	Stockwater	3

The 5Waters are part of the same hydrological water cycle; hence the term “water” is interchangeable throughout this paper, and is therefore regarded as one activity.

Figure 1-1: Council Location



Council has access to a globally unique, high quality water source. Secure, uncontaminated, untreated freshwater for drinking is still delivered to the majority of accessible populated areas in the district. How Council ensures that this life-giving resource is preserved for future generations is of utmost importance.

Generally streams, rivers and springs are not part of this Activity, as they are managed by the overarching authority – the Canterbury Regional Council. In fact, the Canterbury Regional Council is delegated authority to manage the water resource, with Council one of approximately 18,000 parties requesting consent to take/use and discharge it.

1.2 Sustainable Development or Sustainable Management?

The Canterbury Regional Council’s regional water management function is complicated by its requirement to address the purposes of the Resource Management Act 1991 - *sustainable management* and of the Local Government Act 2002 - *sustainable development* cf. Appendix A1.

However, the Canterbury Regional Council’s primary focus has become one of delivering *sustainable management* outcomes. Council on the other hand gives priority to the whole of its communities’ needs with a *sustainable development* focus. It currently does this through community dialogue, identifying the impact of proposed changes on the four well-beings (social, cultural, environmental and economic) and implementing a balanced and affordable solution on a case-by-case basis. This balance of the four well-beings balance is also referred to as the quadruple bottom line.

Both sustainable development and sustainable management have been interpreted by the Courts, various territorial local authorities and the community in markedly different ways. We shall consider what this means from a Council 5Waters viewpoint later in this paper.

1.3 The 5Waters Assets – Water and Physical Infrastructure

Council’s role is to ensure that the four well-beings are met across its business. In this instance that translates to delivering a 5Waters activity which meets the level of service requested by the Community of

¹ 12 Regional Councils, 16 City Councils, 57 District Councils (including the Chatham Islands and four unitary Councils which have regional functions)

Interest (hereafter Col). The Col were determined through grouping areas with similar social, economic or demographic features. Often these Col group customers paying targeted rates for any or a number of the 5Waters services. Council has used this idea, and through a rigorous process identified five separate geographical areas with common features. Identifying five unique Col has significantly assisted in the sustainability process, as it provides manageable clustered groups.

In New Zealand it is recognised in law that water is a public resource, and therefore has no owner. For the purposes of the 5Waters Activity Management Plan (hereafter AcMP), that view is not appropriate. Along with the physical assets that convey water (in its various states) water itself is regarded as a community asset of infinite life. This is because water:

- Is the substance without which there would be no infrastructure, nor habitable environment for humans, and hence no four well-beings.
- Has an infinite life, is part of a continuous cycle and is regarded as having high cultural significance ie. taonga (treasured) status.
- Must be secured for human and environmental uses to meet current and future generations needs
- Must be managed for built communities to exist
- Must be understood, monitored and cared for

2.0 The Issues – Turning An Oil Tanker?

Council has chosen to be proactive to the range of core issues refer Table 2-1 - substantially evolving its approach to 5Waters Asset Management. Any attempt to address the negative effects of these issues has been likened to trying to “turn an oil tanker”. The issues are interlinked across four levels: global, national, regional and local. The effectiveness of council to mitigate or avoid issues improves significantly the closer they are to its governance zone. Never-the-less, 6-9 years of incremental effort are typically required in Councils to adapt, mitigate or change in response to national and global issues. The challenge then lies in identifying if this timeframe can productively be shortened.

Table 2-1: Issues For & Influence of Council 5Waters Activity.

		Key	Sphere of Influence		
		Global	National	Regional	Council
<p style="text-align: center;"> </p>					
<ul style="list-style-type: none"> – Kyoto Climate Change – Liquid fuels reliance – Water Quality Standards – Mobility of Waterborne disease 		<ul style="list-style-type: none"> – Legislation – Resource Management, Local Government Act (Drinking water) Amendment – NPS Freshwater Management – Restrictive distances for international trade 	<ul style="list-style-type: none"> – Over-allocated freshwater – Regional Water policies – General quality decline – Aggregate supply low – Growth (brown field and greenfield) 	<ul style="list-style-type: none"> ↑ OPEX costs² ↑ CAPEX costs³ ↑ Compliance costs ↑ LoS expectations Numerous diverse schemes Diverse interests for water Proposed irrigation scheme 	

Specific local issues for council are highlighted below:

- The second highest population growth rate⁴ in New Zealand, with associate high resource needs
- 5Waters assets of \$157 M, increasing by an average of \$4 M / yr
- Diverse and quickly changing communities of interest, with changing expectations
- Potential for Central Plains Water Irrigation scheme covering 60,000 ha of part developed/ undeveloped upper plains – consents have been applied for
- Level of Service creep – both with customers demanding more and Asset Managers providing a service above that requested
- Increases in operational, capital and compliance costs above consumer price index levels
- The Office of the Auditor General (hereafter OAG) is increasing its expectations for AcMP standards, with limited industry guidance on tools to provide holistic sustainable outcomes
- Effect of historical legislative changes cascading into substantial compliance costs increases

² OPEX – operations and maintenance expenditure,

³ CAPEX – capital (growth and Los) expenditure, LoS – levels of service,

⁴ www.stats.govt.nz 30th June 2007 (4.4 %)

Council has identified a path that will lead to rapid and measurable improvements to outcomes for the 5Waters within the next 3-year planning cycle. It will achieve this through a revised framework approach.

3.0 AcMP Framework – Current and New

3.1 Current AcMP Framework

The way council undertakes the 5Waters Activity is largely directed by regulation⁵. Driven by the Local Government Act 2002, council has to deliver a Long Term Council Community Plan (hereafter LTCCP) covering ten consecutive financial years. The AcMP is the vehicle for this detailed financial, asset, demand forecasts and risk assessment data. AcMP undergo intensive revision on a 3-yearly cycle. At its simplest, this allows council to plan for a long-term view while enabling it to adjust for constantly changing financial factors.

This traditional role of AcMP within this LTCCP process is provided below cf. Figure 3-1. In New Zealand, AcMP are developed using the 2006 issue International Infrastructure Management Manual (hereafter IIMM) guidelines and supporting documentation or guides⁶. Section 3.2 discuss the improvements, shown in Figure 3-2.

Figure 3-1: A “standard” AcMP framework with prioritisation

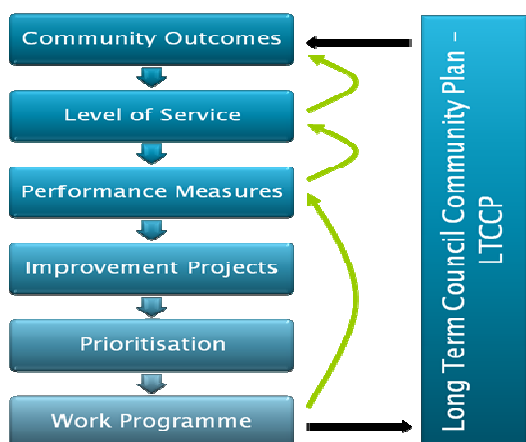


Figure 3-2: The Council 5Waters AcMP framework



The OAG audits the quality of Council's AcMP against the requirements of the Local Government Act 2002 and the IIMM and has stated that continual improvement is required. Expected improvements for the 2009-2019 LTCCP include providing proof that:

- Sustainable development is included
- Different activities are being integrated for efficiencies
- Data integration is being undertaken to deliver more resilient outcomes

The Audit process is powerful, particularly for any Councils' which fail in delivering the minimum level LTCCP required. Where major deficiencies exist a qualified audit is provided; this can have broad negative effect on the whole of that council⁷. Effects could include community criticism, and exposure in the media.

3.2 Council's New AcMP Framework

Having identified the issues and drivers, council needed to confirm what level the 5Waters AcMP should reach. An options assessment cf. Table 3-1 identifies the high level decision process undertaken. Each of the options was constrained by:

- Significance of the Activity - 5Waters is a significant activity
- Council (and staff team) approach - Council LTCCP working party direction
- Human resources and funding - Skills, other work demands and limits to fund extra works

⁵ e.g. Health (amendment) Act prescribes drinking water quality standards, RESOURCE MANAGEMENT ACT based resource consents prescribe wastewater and stormwater quality and quantities, Regional Plans prescribe resource limits

⁶ refer www.nams.org.nz.

⁷ Selwyn District has received an Audit score of "good" for the draft 2009-2019 based primarily on the assessment of the 5Waters AcMP

Table 3-1: Options Assessment – 5Waters AcMP Standard

Option	Benefits	Risks
1. Deliver “do minimum” AcMP	<ul style="list-style-type: none"> Meets Audit NZ requirements Low cost, low resource demands in short term 	<ul style="list-style-type: none"> No view beyond 10 years, or recognition of issues Efficiencies in integration and prioritisation not initiated Delivers minimum LTCCP requirements Sustainability separated from expenditure
2. Provide 5 Individual AcMPs	<ul style="list-style-type: none"> Individual Plans at Core Plus level, meeting appropriate practice 	<ul style="list-style-type: none"> Staff time and resources Inefficiencies in prioritisation of individual Plan works programmes Does not meet national direction Sustainability separated from expenditure
3. Provide Sustainable, Strategic & Integrated 5Waters AcMP	<ul style="list-style-type: none"> Holistic overview and delivery of 5Waters under integrated Level of Service framework Begins pathway to improved management across all lifecycle components of the 5Waters Sustainability and economic commitments build into costs 	<ul style="list-style-type: none"> High initial cost (economic) Requires significant change in way of thinking from staff, Council and community. Outside IIMM guidelines Delivers robust LTCCP requirements

The risk of failure in not having the right team with clear understanding to undertake the work is common to all options. Option 3 was selected by Council, as it was judged as the most appropriate option to meet the community well-beings. A new framework was developed to meet Option 3 requirements cf. Figure 3-2.

3.2.1 Consultancy / Council Alignment

Council recognised that the conventional method of preparing separate plans for 5 separate activities was never going to achieve coordinated sustainable management of its water utilities. There needed to be a new platform created with a fresh approach that allowed for progressive change on an ongoing basis well beyond 2019. It also recognised that external assistance was needed to do this. However, the value of external assistance was dependent on:

- An ability to cast different pairs of eyes around the world to observe trends and changes
- A team of people with wide ranging but relevant skills, who passionately believed in provision of services to meet the needs of existing and future generations
- Understanding of Sustainable Development principles

At the same time the people in this team needed to understand and accept the political framework of Selwyn District Council, and the practical limitations of what was affordable and achievable for its communities. The selection of a Consultancy Team used a process that started with written offers of service and finished with a facilitated workshop with the consultant's people who would be leading and guiding the team.

The workshop environment confirmed Council's view of the preferred consultant. Council staff tested the Consultant's:

- Environmental views eg. proposed holistic methodology, views of sustainability
- Formal training e.g. breadth and depth of technical proficiency to complete activity management plans and forward thinking approaches
- Relationships e.g. ability to relate to others who would form part of a team

On the basis of this process, Opus International Consultants were awarded the commission.

4.0 5Waters AcMP - New

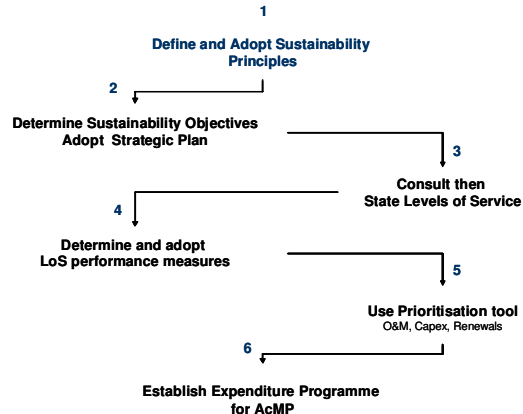
4.1 Implementation Overview

The tools Selwyn have utilised and developed in advancing its implementation of Activity Management may be considered as enabling layers of sustainability cf. Figure 4-1. Council worked outside the IIMM to seek local solutions within a global framework. In general terms the process is:

1. Development of a Sustainability Framework e.g. Adoption of high level Sustainability Principles
2. Determining Sustainability Objectives and Implementation of the 5Waters Strategy based on adopted Sustainability Principles
3. Consultation with the Community of Interest to seek their views on desired Levels of Service
4. Application of Sustainability Principles to final derivation of Levels of Service and Performance Measures
5. Evaluation of proposed projects/improvements against sustainability derived Levels of Service
6. Development of prioritised expenditure programmes

Each of these components is described in further detail below.

Figure 4-1: 5Waters AcMP – Layers of Sustainability



4.2 Step 1 - Define and Adopt Sustainability Principles

4.2.1 The Council 5Waters Sustainability Perspective

Sustainable development covers a complex range of ideas and meanings, dependant on the context it is used in and the views of those referring to it. A local definition of sustainability needed to be established, one which the Council would understand and apply directly to its circumstances.

Sustainable principles were developed within the following guidelines:

- A focus on lifecycle costs, optimisation and understanding risk. Until this point the solid lines of connection between sustainable asset management and sustainability had not been drawn. Nor had there been adequate focus on providing for future generations - in that levels of service had focused on what the existing customers were currently provided. Selwyn was intent on fixing this
- A definition with which the communities could identify. This was easier when one asked them whether they had a role to protect the future of their grandchildren and great grandchildren – the anthropocentric view point. There was an acknowledged risk that sustainability was becoming an overused word and yet no-one had made it clear what it meant, nor why it was relevant. Hence the derivation of principles and explanations to the principles
- An expectation that financial pressure and stress on funding capabilities in the community would continue unless a forward-thinking approach was provided. This allowed Council to understand and make clear the consequences of not taking certain actions

4.2.2 A Framework

A framework was developed to guide decision making and monitor progress towards sustainability of the 5Waters Activity. The framework used a set of high level sustainability principles that complement the four well-beings, bringing these together with a long-term focus to develop themes and objectives with associated performance indicators. Ultimately the framework could be applied across all council activities cf. A3.1.

4.2.3 Sustainability Principles

Seven Principles of Sustainability were developed. These then provided the framework for direct action in delivering projects which provide the Col with physical infrastructure to support its well beings, meanwhile supporting the potential for adoption in all Council activities.

These Principles were adopted by council “for the purpose of strategic and asset management planning and implementation”. Principle 3 is provided in Figure 4-2 (full extent Appendix A3.2).

Figure 4-2: Principle

	<p>Principle 3: Seek “intra-generational” and “inter-generational” equity</p> <p>Improve quality of life and create opportunity for all of the current generation, without compromising the quality of life and opportunity of future generations.</p>
--	---

4.3 Step 2 - Sustainability Objectives and Strategic Plan

Achievement of sustainability objectives (as measured by sustainability indicators) will ultimately be affected through each of council’s key AcMPs. Adaptation of the 5Waters Principles may occur; however achieving sustainable outcomes at an activity level will contribute to council’s overall sustainability based performance measures.

4.3.1 Strategic Plan

Council’s 5Waters Strategy is a foundation document which supports the AcMP. Recognition that the issues in Table 2-1 could no longer be ignored, provided the incentive for council to develop a 5Waters Strategic Plan cf. Appendix A3.3. This was inherently supported by the sustainability principles. The strategy has identified a range of initiatives aimed at achieving “a sustainable district, a place which we and future generations can use and thrive in.”

A direct outcome of this strategic plan is development of a “core plus” AcMP with measurable, directed and targeted actions conveying the community on the pathway to sustainability. All projects undertaken in the 5Waters are prioritised and then selected to achieve the levels of service set under the sustainability platform.

4.4 Step 3 – Consult On Then State LoS

A key requirement of council 5Waters AcMP was to adopt together with LoS cf. Figure 4-3 the:

- Sustainability Principles and four well-beings
- Council’s existing Community Outcomes

LoS were debated with focus groups throughout the Selwyn district. They are designed to protect the four well-beings of existing and future generations.

Figure 4-3: 5Waters Levels of Service

Level of Service
1 The community is provided with water services to a standard that protects their health and property
2 Customers are provided and fairly charged for water services that meet their reasonable needs
3 Nuisance effects of water services are minimised
4 Water services are provided in a cost effective manner
5 Problems with water services are addressed in a timely manner and prioritised according to risk and need
6 Service capacity is provided to accommodate growing communities, where this growth is sustainable
7 Adverse effects of water services are cultural and heritage values are minimised
8 Adverse effects of water services on the environment are minimised
9 Greenhouse gas emissions from the provision of water services are minimised

The process and outcomes received strong positive feedback.

While the Levels of Service are written in non-technical language it may not be clear to customers exactly what they mean in relation to the services that they receive and the environment they live in. Explanatory text⁸ was prepared to assist customer understanding of each Level of Service and explain the potential outcomes if they were not achieved. Council needed to develop forward works programmes that were directly linked to maintenance or improvement of levels of service. Many projects will affect more than one levels of service. Early in the process it was realised that it was crucial for CoIs to convey their views on the relative importance of these Levels of Service. These views could then be converted into weightings that could be applied in the prioritisation process explained below. Through a process of customer focus groups and telephone surveys, weightings of each Level of Service for each CoI were derived.

This process has provided a key point of difference to other multi criteria approaches – in that priorities for spending community money could be directly linked to the communities views of the relative importance of each of the Levels of Service.

⁸ A3.5refer A3.5 for full explanation

These Levels of service are common to the 5Waters and in turn are “hard wired” to the sustainability principles adopted by Council

4.5 Step 4 –Performance Measures

The LoS also have associated performance measures, which ensures they:

- Can be benchmarked to any other 5Waters utility
- Are mutually independent of each other – this was an important consideration for development of a tool that was used to prioritise improvements and work programmes

The work to clearly define the base data required was undertaken in July 2009. A robust system for measuring, recording and reporting performance measures is being developed. This will utilise a data warehouse type system. Council's success in delivering a service can then be determined after 1-2 years of data has been assessed i.e. council must determine the current performance measures to establish reliable and achievable future performance targets.

4.6 Step 5 - Prioritising Expenditure

An important final product of integrated asset management plans is expenditure programmes for the next 10-20 years. The final outcomes of these programmes must be sustainable for successive generations and connected to the sustainability principles. Expenditure programmes have been developed for each of the five communities of interest making allowance for the relative importance of each LoS.

4.6.1 Identification and Prioritisation of Projects

The term ‘project’ is used to refer to any specific work item identified in relation to delivery of the 5Waters Activity. A project may be a management task, process improvement, operational action, or construction of a new asset. The source of potential project may be derived from the strategic plan, from legislative requirements that have arisen since preparation of the last AcMP or because of changed community needs. There are also uncompleted improvements that were outlined in the previous AMP.

The design of the prioritisation process has been based on this fundamental premise:

‘No existing work, new work or system improvement should be undertaken unless there is identification of contribution to the retention or improvement of levels of service for the whole or part of the Community of Interest that is serviced’.

Council has also adopted a number of rules around prioritisation:

- Projects can provide a potential contribution to more than one LoS
- A positive contribution in one area may be negated by loss of benefit in another area
- Renewal of existing assets is not considered within the prioritisation process. A balanced, ongoing renewal strategy is essential to maintain existing levels of service for current and future generations

A “prioritisation tool” was developed and based on the need to identify which performance measures were impacted by the proposed project. It did not attempt to quantify the specific benefits of any project because any project is part of a continuum of projects or work activities. If all projects are completed, the result will be to deliver levels of service to the targeted performance.

It is more important to recognise which levels of service the projects contribute to and in what areas performance will be changed.

4.6.2 Pre-Prioritisation Process

Before any project was prioritised 4 steps refer Appendix A3.7 were followed:

- i. Identify the LoS for the 5Waters Activity
- ii. Determine relative importance of each LoS through community consultation
- iii. Identify performance measures – with scores and descriptors relevant to each LoS and each utility
- iv. Define “exposure levels” to reflect extent of coverage of proposed project

Once a potential project had been identified, a further series of steps was followed:

4.6.3 Prioritisation Process

The prioritisation process was undertaken refer Table 4-1. utilising a custom-developed Access database tool. The database recorded project details and the assumptions used to determine the prioritisation score.

This allowed more than 750 ranked projects to be sorted by community of interest, and scheme. There is also provision for recording budget information to allow prioritised expenditure programmes to be produced.

Originally only one person entered all projects details and scored them. This was done to maintain a common and consistent approach. That person has also been heavily involved in the background AcMP work, understanding Council and its 5Waters sustainability and asset details. It will be a requirement that any other projects entered / modified are done after the individual has reached an appropriate level of 5Waters process and systems understanding.

Risk Based Tool

The prioritisation score effectively represents an evaluation of community benefit in the absence of financial implications. It is a measure of the consequence component when assessing the risk of not achieving levels of service. Furthermore, it could be argued that the probability of failing to deliver levels of service is progressively reduced each time a project under evaluation is completed

Table 4-1: Prioritisation Process

Step	Description	Explanation
1	<i>Identify which Levels of Service are potentially affected by the project</i>	These may be affected positively or negatively by the project
2	<i>Identify the most significant performance measure the project can impact</i>	Only one performance measure should be identified for each LOS identified as relevant
3	<i>Assign a “current status” performance measure score for each LOS in the community</i>	Such as “accepted” – to be keep by, “On-hold” – awaiting confirmation
4	<i>Assign a community exposure score for the project under consideration</i>	What relative extent of the Col would be exposed to this project if it was completed?
5	<i>Identify the aspired performance to which this project will contribute</i>	The maximum (best) performance drew a score of 5
6	<i>Calculate the prioritisation score</i>	This is calculated as the sum of all identified performance improvements weighted by the associated Level of Service and exposure

The derivation of work programmes and budgets for the 5Waters AcMP is a multi-stage process. The prioritisation tool outlined in Table 4-1 provides a useful foundation. However, it would be unwise to totally depend on the scoring process without a further assessment of practical details and extenuating circumstances that may result in a reprioritisation.

Typical examples of factors that may justify a “manual override” of the project priority score include:

- Coordination of construction activities with other works e.g. roading or landscaping
- Availability of external funding sources e.g. Ministry of Health
- Issues over community affordability because of current rating systems
- The need to sequence activities for practical reasons
- Projects where there are impacts to the same LoS but in more than one utility e.g. a new telemetry system
- Projects that provide benefit to the whole district or more than one community of interest – where efficiencies can be gained through widespread implementation
- Committed projects where funding is to be carried over from previous budgets

The score derived from use of the prioritisation tool can be regarded as:

“an indicator of comparative community benefit and a comparative evaluation of the consequence of not achieving levels of service if the project or improvement was not done”.

4.7 Step 6 - Development of Expenditure Programmes

The outcome of this prioritisation process was derivation of expenditure programmes that prioritise improvements according to community benefit for existing and future generations. The programmes were taken back to the Councillors and community via community budget meetings. The key question raised at community meetings was whether residents were prepared to accept the associated targeted rate increase to meet their desired level of service. The programme must be accepted in June 2009 (start of the LTCCP cycle) and, implemented according to affordability of the generations that will benefit from the projects.

Draft expenditure programmes cf. Appendix A3.8 based on community benefit can then be reviewed with respect to funding capacity. Where funding constraints limit the amount of work that can be undertaken, the lower priority projects are deferred to future years and a revised expenditure programme produced.

5.0 Conclusions

Council has 80 individual and separately rated water service areas, covering broad, disparate geographic and hydrological catchments. For the purposes of strategic and asset management, planning for these services is to be managed as one service – the 5Waters Activity. Through provision of seven Sustainability Principles in the 5Waters activity, council intends to deliver sustainable development outcomes. This will be done via delivery of projects which will meet the community if interests immediate and long term well-beings.

Sustainable development is a concept, which is interpreted in many ways dependant on its context. It was therefore imperative that the 5Waters Activity Management Plan provide the cement to make sustainability real and visible.

The 5Waters Activity process itself was aligned with the seven adopted Sustainability Principles in the following ways:

- i. Consideration of Community Outcomes reflecting the four aspects of well-being
- ii. Consultation processes and community involvement in decision-making
- iii. Long-term financial planning for asset maintenance and renewal and use of financial systems to fairly apportion costs within the current community and to future communities that will benefit from the assets

Some of the immediate benefits of self defining and implementing a sustainability based activity plan process are:

- Advances to the IIMM framework, not because of Auditor New Zealand requirements but because of clearer recognition of local community, regional to global issues
- Prioritised projects which aim to protect the 5Water asset – as it sustains life, now and in the future – that can be undertaken at a rate to match community affordability
- Improved national and global branding of Selwyn, its people and businesses in a global village
- Raising the recognition of the community that their water services are part of a built and natural system, which will assist in focusing their attention on conservation and efficiency

Many benefits will not be recognized immediately, but through benchmarked performance measurement, council will confirm how successful it is in achieving the 5Waters well-beings

The process of developing the 5Waters Activity Management Plan required a substantial investment of time, effort and funds. The commitment to undertake such work is dependant on the community and councils willingness and perspective.

It now remains for Council to consider integration of the principles and prioritisation across all of Council Activities – an integrated Council management framework. This will challenge council to review the way it undertakes its core business

APPENDICES

A1 Legislation - Purposes

A1.1 Local Government Act 2002

The Local Government Act 2002 makes reference to sustainability, including:

Section 10 Purpose of local government

The purpose of local government is –

- (a) *To enable democratic local decision-making and action by, and on behalf of, communities; and*
- (b) *To promote the social, economic, environmental and cultural well-being of communities, **in the present and for the future.***

Section 14 (1)(h) Principles relating to local authorities

*In taking a **sustainable** development approach, a local authority should take into account –*

- (i) *the social the social, economic, environmental and cultural well-being of communities; and*
- (ii) *the need to maintain and enhance the quality of the environment; and*
- (iii) *the reasonably foreseeable needs of future generations.*

A1.2 Resource Management Act 1991

Section 5 Purpose

*The purpose of this Act is to promote the **sustainable management** of natural and physical resources.*

*In this Act, “**sustainable management**” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well being and for their health and safety while –*

Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

A2 Global to Local Issues Driving 5Waters Sustainable Asset Management

A2.1 Global Issues

The following global issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	World energy markets, particularly the pricing structure of liquid fossil fuels have shown significant upward movement since 2007. While fluctuations occur, there is an international view that demand and cost will disproportionately increase
ii.	There is a related stress on access to affordable basic foods for an estimated 100 million individuals
iii.	A majority of the population live in countries where primary industry and low cost manufacturing of western goods occurs
iv.	The “parent and grandparent” profile in the western world is growing as healthcare continues to support their longevity
v.	A significant Asiatic population e.g. India and China is consuming and producing world resources as it attempts to climb into “1st World” status – equivalent of OECD status
vi.	Readily accessible base resources are being consumed by these countries, making it increasingly more expensive to source the remaining resources eg to locate, refine, produce and deliver to the marketplace
vii.	Migration of skilled and semi-skilled workforce from lower wage economies to high wage ones continues to deplete smaller and more vulnerable countries – subsequent pressure arise to simply manage and fund existing infrastructure

A2.2 National Issues

The following national issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Stronger environmental constraints, delivered through legislation continue to set high economic costs to develop
ii.	As with global resource, access to national raw materials is becoming increasingly expensive
iii.	The relative distance between region/national market places and global market places increases costs locally; successful branding in the marketplace increases in importance
iv.	Awareness and focus on our global communities ongoing vulnerability to climatic variability and change
v.	InfoResource Management Action Technology fostering and redirecting rapidly evolving social and cultural needs. Changes are rapid and not necessarily predictable
vi.	Business moves to triple and quadruple bottom line reporting indicating increasing community regard for all four well-beings
vii.	Review of current legislative drivers NZ – RESOURCE MANAGEMENT ACT and LOCAL GOVERNMENT ACT, what about other countries regimes
viii.	Development of a framework of national policy statements and regulations around sustainability and resource usage
ix.	Further use of risk management techniques

A2.3 Regional Drivers

The following regional issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Water resources are approaching a fully allocated (or in some cases over-allocated) position
ii.	Coalitions of Councils are occurring as costs to continue governance functions rise
iii.	Development of Guiding and Regulatory frameworks (eg in Canterbury this is the Regional Plan and Policy documents)
iv.	Raw materials (aggregate, water) resources totally allocated, or restricted/limited due to construction demands and environmental protection

A2.4 Local Drivers

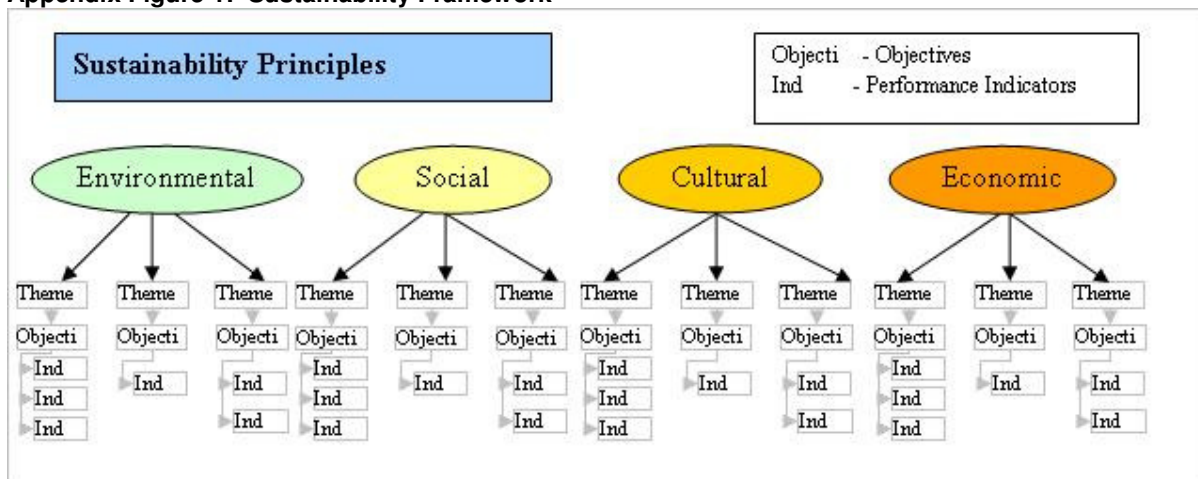
The following local issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Life-cycle asset planning remains relatively fixed on business models supported by supply of fossil fuel based materials and services – few reliable or significant innovations away from this model are occurring. This directly affects and constrains the built environment management
ii.	Financial and asset planning over insufficient duration eg not aligned with the asset life
iii.	Community awareness on broad principle climate change and energy conservation potential is rising e.g. www.powersaving.co.nz Meanwhile the legislative framework for TLAs does not directly encourage innovation, particularly in areas seen as outside core business
iv.	Level of Service creep – with few Strategic and Management Plan linkages to identify what is required

A3 Council Sustainable Asset Management – Selected Tools


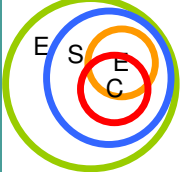
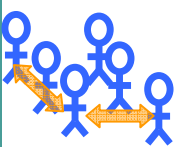
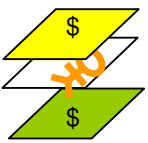



A3.1 Sustainability Framework

Appendix Figure 1: Sustainability Framework

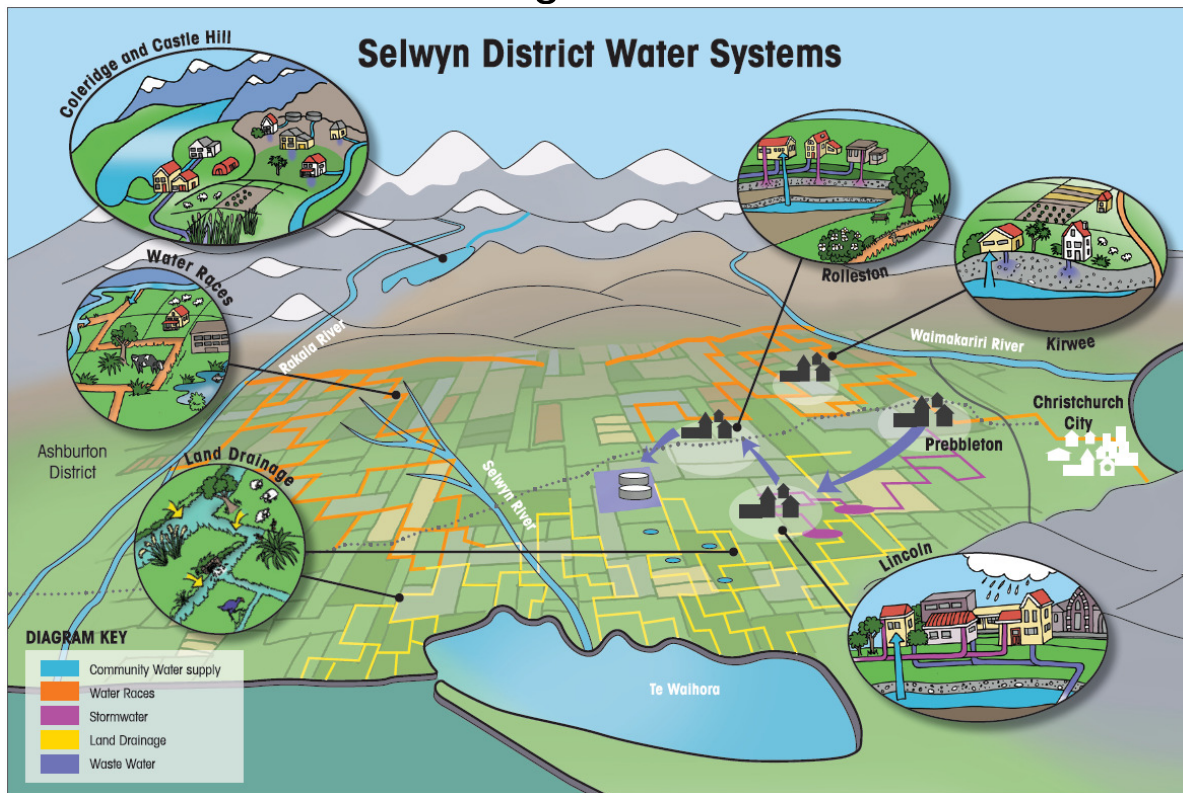


A3.2 Selwyn District Council - Sustainability Principles

Appendix Figure 2: 5Waters Sustainability Principles

	<p>Principle 1: Make decisions based on the four aspects of well-being</p> <p>Integrate environmental, economic, social and cultural considerations within Council decision making. Consider both the short-term and long-term effects of the decision</p>
	<p>Principle 2: Observe the Precautionary Principle to provide contingency and enable adaptability of our Community</p> <p>Err on the side of caution in the face of scientific uncertainty and a risk of serious or irreversible environmental damage</p>
	<p>Principle 3: Seek “intra-generational” and “inter-generational” equity</p> <p>Improve quality of life and create opportunity for all of the current generation, without compromising the quality of life and opportunity of future generations</p>
	<p>Principle 4: Internalise environmental and social costs</p> <p>Develop and adopt a system that recognises the true costs and benefits of protecting and restoring environmental/ecological, human, social and cultural resources affected as a result of the services that Council provides</p>
	<p>Principle 5: Foster Community welfare</p> <p>Support and encourage the region to prosper socially and culturally. Our assets are not just our built assets but our people, their skills and the connections between them</p>
	<p>Principle 6: Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems</p> <p>Conserve, and sustainably use and manage, the district’s biodiversity, recognising the various services that ecosystems provide to humans as well as the environment’s intrinsic value</p>
	<p>Principle 7: Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes</p> <p>Recognise that we are part of a whole globe system whether we can physically see the impacts of our actions or not</p>

Selwyn District Council Five Waters Strategy (Draft) *The Future for:* Community Water Supplies, Wastewater, Waterraces, Land Drainage and Stormwater



Background

Selwyn District is unique. Water from the sky, rivers and aquifers supports the urban and rural communities, providing for economic wealth, social health and cultural diversity. Use of water resources and the need to protect the environment for future generations creates tensions in some areas.

The Selwyn District Council and the community have an opportunity now to consider all the Five Waters issues in a coordinated manner. To achieve this, the Council is developing a Strategy focusing on the ongoing management of the District's water.

Prepared
July 2008

*Council's Vision is
"To achieve excellence in the management of resources and the
provision of services for the People of Selwyn District"*



SDC Five Waters Strategic Plan – Future Position of Water Supplies

1. Introduction

Water has been described as the “gold of this century”. The water footprint of societies may be more important than the carbon footprint to ensure a sustainable future. This draft document has been prepared in recognition of the importance of water to Selwyn and how the continued use of the water resources are affected by:

- Globalisation;
- A growing population;
- Increasing pressure on existing services;
- Rising costs;
- Regional Strategies and;
- The need to provide Management Plans

This **Strategy** outlines the strategic vision for Selwyn District Councils “SDC” **five waters**⁹ **community** services – the “Five Waters”. This Strategy also covers **private** water services to an extent identified within legislation¹⁰.

SDC has adopted seven sustainability principles for the purposes of strategic planning over the Five Waters. Sustainability should be regarded as a continuous journey to seek balance between meeting local and global perspectives, along with economic, cultural, environmental and social well-beings. While we personally may view this with different values, we all seek to achieve a sustainable district a place which we and future generations can use and thrive in.

The sustainability principles help by providing a foundation for a long term Strategy for which community feedback is sought. We will also use them to gauge how successful we are on this journey.

This Strategy will be consulted on with these guiding principles, and is intended to:

- Describe the long-term desired position of SDC with respect to the Five Waters in the next 60 years – to the period when others require the environment to live in;
- Describe opportunities to improve integration of water services;
- Identify what we need to do to achieve long term goals;
- Support Councils’ vision

This Strategy does not:

- Contain financial assessments. They will be provided once this draft strategy has been consulted on with outcomes delivered via the Five Waters Activity Management Plans (AcMP)
- Discuss governance issues such as who manages water resources and what role SDC has.

Strategic direction is being developed across the Five Waters in a consistent way. The generic water interrelationship in townships is shown in Figure 1 and where possible the across the districts rural and urban areas.

⁹ Water Supplies (Urban and Rural), Wastewater Schemes, Waterraces, Land Drainage and Stormwater

¹⁰ Local Government Act 2002 – Part 7

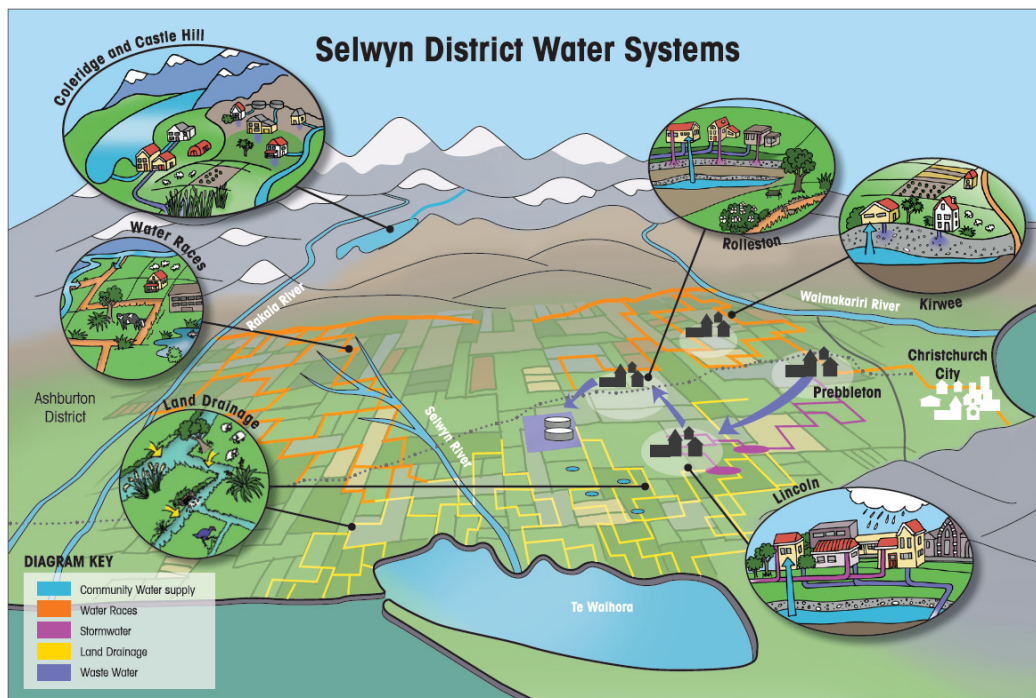


Figure 1 – Five Waters Generic Interrelationships

Take the “Rolleston” example. Water is drawn from deep aquifers for community use, while stormwater is discharged into the gravels above. Wastewater is piped to centralised treatment and disposal areas, with proposed future inflows from other townships. Waterraces flow through and alongside the township.

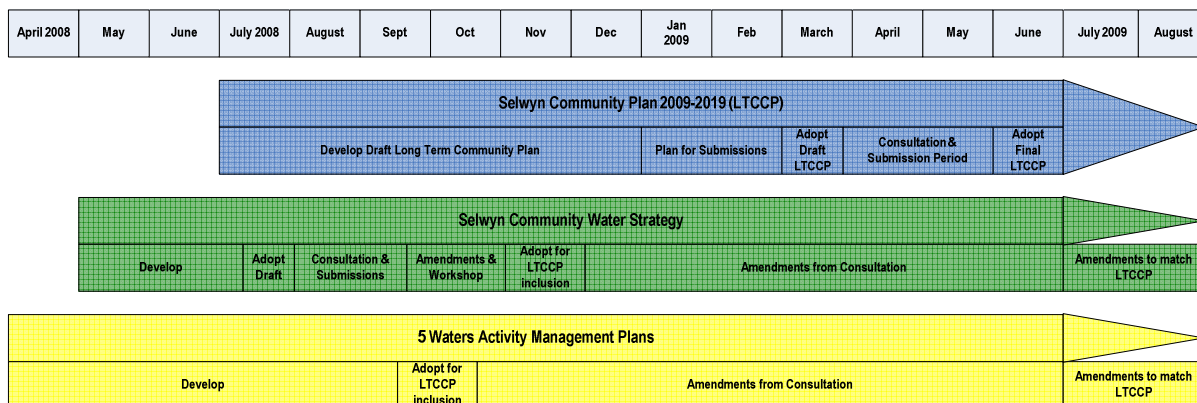
2. Relationship with the AcMP

The AcMP views the five waters as inter-dependant activities for the community of interest. The AcMP will:

- Outline how SDC will undertake the management, delivery and operation for the five water services for the communities in Selwyn over the next 10 years
- Outline the approach to achieve “Levels of Service”
- Contain expenditure programmes, determined by prioritising works and activities that must and could be funded by ratepayers eg meeting mandatory standards, promoting water saving devices.

The AcMP is a living document and is revised at least every three years in time to support the Selwyn Community Plan - the LTCCP.

Currently the AcMP is being reviewed, and will be consulted on from January 2009 – refer Figure Two.



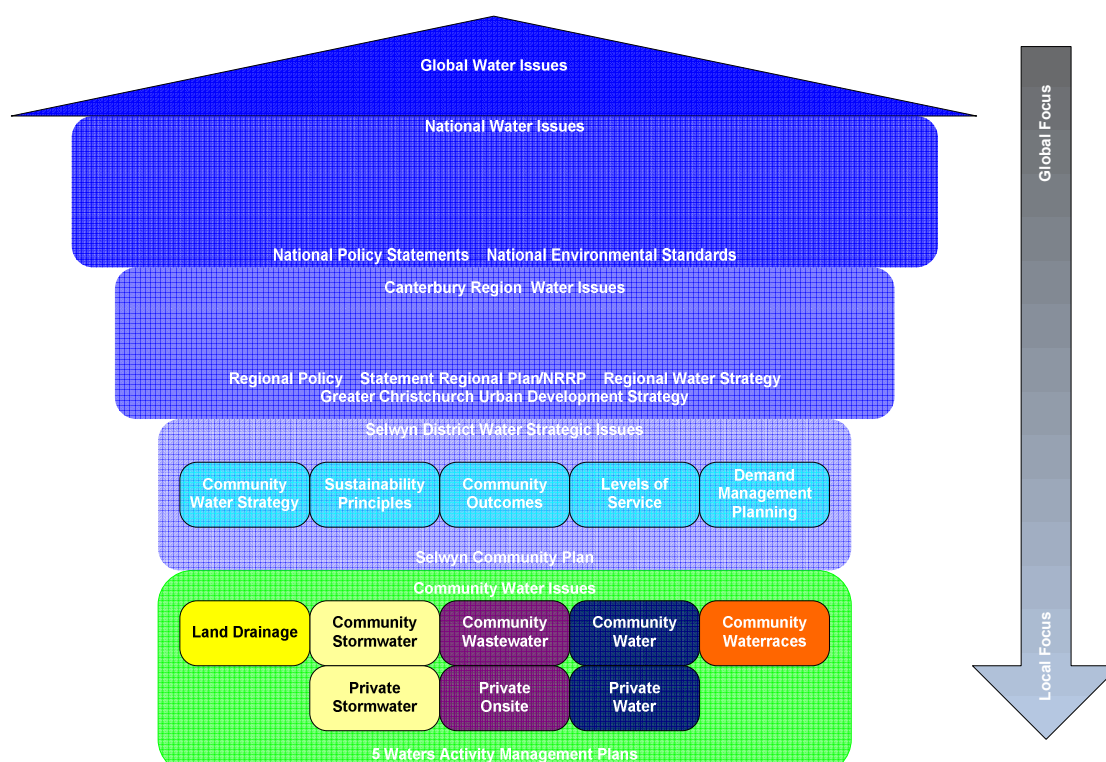
We will in this order:

- i. Adopt a draft Strategy
- ii. Prepare a final AcMP consistent with this draft Strategy
- iii. Prepare and adopt a draft LTCCP based on the above
- iv. Consult on the Strategy
- v. Consult on the LTCCP eg the AcMP
- vi. Revise the LTCCP, Strategy and AcMP in light of feedback and
- vii. Release a final 2009-2019 LTCCP

Before the AcMP review can be completed, the strategic direction should be determined. This Strategy will in effect, create the **vision** and **boundaries** for the AcMP implementation and will be reviewed at least every three (3) years inline with it. Community input strengthens the process by clarifying and prioritising issues, hence consultation is a key part of its validation.

3. Inputs into the Strategy

Strategic planning for the use of Fives Water resources is undertaken at a number of levels. This diagram demonstrates the potential sources of influence on the Strategy.



While the Strategy targets **district** issues – it must do so in a way that accounts for the relevant issues at all other levels.

The Strategy seeks to direct and support the district in a consistent, cohesive and cooperative way. However it is recognised that in the real world there are tensions between the desires of global, national regional and inter-district water allocation, use and management. For example, our urban communities' well-being relies on a strong rural economy, but could suffer from long term environmental impacts of that rural land use.

The strategy is also challenged at a district level by the need to take account of diverse and sometimes, opposing social, economic, cultural and environmental values for different communities in the District Other challenges arise from the impacts of any one of the 5 waters on the others.

4. Proposed Five Waters Strategy Initiatives

Council recognises that rapid improvements (0-3 years) can be made in some areas, while longer term gains (3+ years) can only be brought about after investigation and review – the “possible future”. Initiatives for the possible future are identified for the urban areas serviced by community schemes and rural areas that are not serviced by community schemes – a foldout impact summary sheet is attached.

The Initiatives are identified and graded to indicate priority. It is possible that an initiative may sit at several levels, e.g. global or national, and a decision has been made on the “best fit”. Where any of the Five Waters may be affected, they are noted by abbreviation.

Community Schemes

<i>W</i>	Water
<i>WW</i>	Wastewater
<i>WR</i>	Waterraces
<i>ID</i>	Land Drainage
<i>SW</i>	Stormwater
<i>All</i>	All Urban

Private Schemes

<i>WP</i>	Private Water
<i>WWP</i>	Onsite Wastewater
<i>IDP</i>	Onsite Drainage
<i>SWP</i>	Onsite Stormwater
<i>AllP</i>	All Private Services

All initiatives are summarised below as “**Our Strategy Initiative(s)**” and presented in total on the “foldout” impacts summary sheet. The summary shows the proposed priority and how they will be addressed.

5. Global Initiatives

Global events may move faster than national and regional policy and legislation can currently adapt to. Legislative mechanisms in their current form are regarded as inflexible.



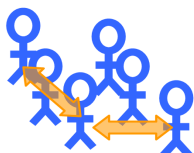
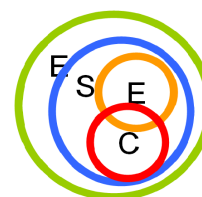
5.1 Sustainability

The decision by the SDC on 27.02.2008 to formally adopt **seven sustainability principles** was made after consideration of a number of factors including international concerns around climate fluctuations



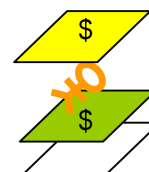
Principle 1:
Make decisions based on the four aspects of well-being

Principle 2:
Observe the Precautionary Principle to provide contingency and enable adaptability of our community



Principle 3:
Seek “intra-generational” and “inter-generational” equity

Principle 4:
Internalise environmental and social costs



Principle 5:
Foster community welfare

Principle 6:
Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems



Principle 7:
Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes

The principles encompass the NZ Government’s current commitment to the Kyoto Protocol, and Councils continuing advances in meeting Local Government legislation.

Our Sustainability Strategy Initiatives(s):

All	SDC will have regard to these principles when making any significant decision that affects changes to the installation, renewal, management and operation of the water infrastructure
All	SDC will monitor current and forecast fossil fuels prices and associate effects on its asset management and operation annually. It will identify effective and efficient opportunities to reduce usage and reliance on this energy source, and seek reliable and sustainable alternatives as they arise.

5.2 Climate Change

There is international concern regarding the impact of climate fluctuations effects. SDC see the effects as:

- Local changes to climate that impact the availability of the water used for supply;
- Changes to International demand for food products that are produced in Selwyn District – that use water for production and change the availability of the resource for community use

Our Climate Change Strategy Initiatives(s):

All	SDC will proactively undertake studies to better quantify the potential impacts of climate change on demand and availability as it affects its district.
All ALPP	SDC will minimise use of and conserve energy, as far as practicable while still meeting agreed Levels of Service. This will extend to all private services in time where a need is recognised
All	SDC will undertake to identify and reduce carbon emissions where a benefit is shown, through more efficient use of materials and services.
W WW WR	SDC will establish and where appropriate implement demand strategies and water loss reduction programmes

5.3 Drinking Water Standards

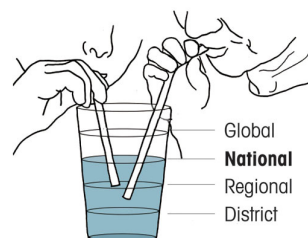
Drinking water quality standards in New Zealand have been adopted in line with WHO guidelines. The Standards acknowledge the mobility of waterborne disease and the potential impact of organisms that are “imported” into New Zealand.

Our Drinking Water Strategy Initiatives(s):

W	SDC will regard with importance the protection of groundwater and surface water quality that is delivered to its urban communities
WP	SDC will with support from Regional and Ministry of Health officials maintain and advise private users regarding drinking water health issues

6. National Initiatives

National Initiatives are generally developed and promoted by central government. They can result from global issues which have been applied to the New Zealand environment, or ones which have been developed to meet the countries unique demands.



6.1 The Health (Drinking Water) Amendment Act 2007

This Act assigns obligations to SDC as a community water supplier to:

- take all practicable steps to comply with the Drinking Water Standards
 - introduce and implement Public Health Risk Management Plans for the water supply
- Specific obligations and timelines vary according to the population served by the supply

Our Health (Drinking Water) Act 2007 Strategy Initiatives(s):

All	SDC will work to achieve compliance through the implementation of PHRMPs and the planning of upgrades to water abstraction and treatment facilities.
------------	---

6.2 Sustainable Water Programme of Action - SWPoA

The Government has initiated a strategy to improve the management of fresh water, protect our freshwater resources into the future, and acknowledge the fundamental importance of water to all New Zealanders. The strategy focuses on three national outcomes for fresh water:

- Improve the quality and efficient use of fresh water by building and enhancing partnerships and providers eg SDC and rural and urban communities;
- Improve the management of the undesirable effects of land use on water quality through increased national direction and partnerships with communities and resource users
- Provide for growing demands on water resources and encourage efficient water management through increased national direction, working with local government to identify options for supporting and enhancing local decision making, and developing best practice. “

Our SWPoA Strategy Initiatives(s):

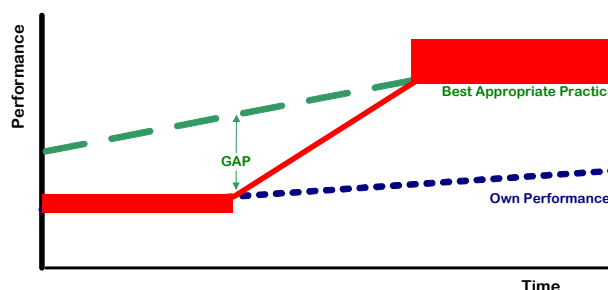
All	SDC will engage with those parties undertaking the SWPoA to understand, apply and sustainably protect the interests of the urban community. This will include submission and representation by Council from time to time.
------------	--

6.3 Benchmarking Performance

Benchmarking refers to the methodology and tools required to identify, measure and respond to key performance indicators of any particular water asset. Benchmarking can be undertaken to allow comparison with neighbours or other utility providers within New Zealand or overseas.

For example, how efficiently SDC is providing or using water could be compared with areas in Australia with similar climate. Adaptable benchmarking is a key aid in identifying opportunities for improvement, learning “best practices”, maintaining stimulus for continuous improvement, and measure success in closing the gap.

Role of Benchmarking

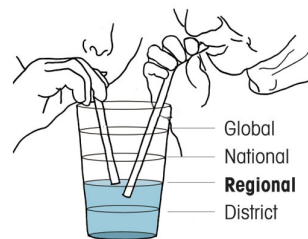


Our Benchmarking Strategy Initiatives(s):

All	SDC will: proactively collect, analyse performance data to establish better comparable performance
W	SDC will collect water quality and water quantity data and present the data in a way that allows assessment of changes to upstream activities on its water supplies

7. Regional Initiatives

Regional initiatives are those which may have been developed as a result of global or national processes. Generally they focus on particular issues which affect the environmental quality in the particular geographic area.



7.1 National Environmental Standard for sources of human drinking water

The National Environmental Standard “NES” requires Regional Councils to ensure that effects on drinking water sources are considered in decisions on resource consents and regional plans. Specifically, Councils will be required to:

- decline discharge or water permits that are likely to result in community drinking water becoming unsafe for human consumption following existing treatment
- be satisfied that permitted activities in regional plans will not result in community drinking water supplies being unsafe for human consumption following existing treatment
- place conditions on relevant resource consents requiring notification of drinking water suppliers if significant unintended events occur (e.g. spills) that may adversely affect sources of human drinking water”

Our NES Strategy Initiatives(s):

W	SDC will seek to ensure that ECan protects the interests of SDC when consenting water abstractions or discharges that can impact on its supplies.
----------	--

7.2 Natural Resources Regional Plan – pNRRP

The proposed NRRP signals many changes to the way in which Council and the community manage their activities and the environmental effects. Some rules such as requiring sewage network utilities operators licences and stormwater discharge consents already have effect, others require the plan to be operative.

Our pNRRP Strategy Initiatives(s):

All Acep	SDC will engage with the Regional Council at a political and technical level to continue promotion of the issues brought by this document as they affect (primarily) the Five Waters and secondly private services.
All	SDC will seek to deliver 100% compliance with all existing consents

7.3 Regional Water Management Strategy

Environment Canterbury has embarked on a public engagement programme to develop a strategy for water management in the region over the next 18 to 20 months. This strategy will cover all water resources in the region.

Our Regional Water Management Strategy Initiatives(s):

All Acep	SDC will proactively give input into the preparation of this strategy to protect existing and future water abstraction requirements for its community schemes and private systems.
All Acep	SDC will demonstrate that future actions to develop and manage water supply consents and systems are consistent with its adopted sustainability principles

7.4 Irrigation schemes

Current irrigation scheme proposals are indicative of the continued demand by farmers to extend irrigation within Selwyn district. The proposed schemes are likely to come from river sources – noting that groundwater is fully allocated. The schemes will involve river abstraction and storage.

Our Irrigation Scheme Strategy Initiatives(s):

All Acep	SDC will be vigilant in the early planning phases of irrigation schemes and seek to ensure there is adequate protection of its water supplies from adverse effects including declining water quality, significant changes to groundwater levels and adequate reservation of water allocation to provide for future community and private domestic use growth
---------------------------	---

7.5 Urban Development Strategy

The Greater Christchurch Urban Development strategy provides the basis for a collaborative approach to managing the pressures arising from growth. SDC is a partner to this strategy and has responsibilities to implement the Strategy.

The responsibilities include provision of water, wastewater and stormwater infrastructure to the communities within Selwyn District and covered by the study area

Our UDS Strategy Initiatives(s):

All	SDC will take account of all its UDS Five Waters obligations including those it has direct responsibility to lead, as it continues planning and implementing the sustainable development and operation of those communities within the Metropolitan Urban Limits.
All AEEP	SDC will control growth patterns via regional and district plans to protect its Five Waters. It will review costs and cost recovery to ensure users pay directly.

7.6 Supply security and emergency preparedness

Water supply is an essential service. The consequences of losing a water supply to a community can have catastrophic consequences. There are legislative requirements such as the Civil Defence Emergency Management (CDEM) Act 2002 that place obligations on SDC to protect the water quality and the continuity of supply to its customers.

The CDEM was provided to:

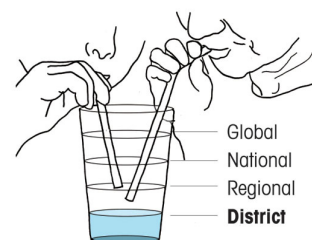
- improve and promote the sustainable management of hazards to contribute to well-being, the safety of the public and the protection of property
- encourage and enable communities to achieve acceptable levels of risk by applying risk management
- provide for planning and preparation for emergencies and response and recovery in the event of an emergency
- require local authorities to coordinate CDEM through regional groups
- encourage the coordination of emergency management across emergency sectors”

7.7 Our Emergency Preparedness Initiatives(s):

All	SDC will regularly participate in Lifelines processes
All	SDC will assess the consequences to the community if key components of water supply infrastructure were taken out of service
All	SDC will implement design standards and operational practices to minimise the risk of failing to deliver a safe continuous supply of water to communities
All	SDC will undertake Risk Management processes that comply with statutory requirements and in accordance with Council's Asset Management Policy
All AEEP	SDC will develop and implement an emergency response plan that outlines interdependencies with other service providers and responsibilities for restoration of supplies following hazard events
W WW WR	SDC will plan and provide new and upgraded water supply infrastructure to reduce the risks of interrupted or contaminated supply during hazard events

8. District Initiatives

District initiatives are those which generally provide specific local solutions to locally recognised issues. These reflect the values of the people and the environment they live in. The district has a diversity of environments but generally there are similar issues in across it. This is referred to as “communities of common interest”.



8.1 Community Outcomes

The Selwyn Community Plan 2006-2016 “LTCCP” contains the key Community Outcomes for each of the four well-beings. Many of these outcomes support or rely on management of the five waters.

- Air, land, water and general environment to be kept in a healthy condition
- A living environment where the rural theme of Selwyn is maintained
- Access to community and public health services
- Coordination of community/social services
- A safe living environment
- Educated Community
- Business-friendly environment
- Effective and accessible transport system
- An ability to experience cultural activities

In the revised AcMP, these outcomes have been linked directly with the four well-beings and the levels of service for each of the five waters. Integrated reporting against the contribution towards the achievement of the community outcomes and the four well-beings is included in the annual report.

The levels of service or service targets for each of the five waters are:

Water Supply

- Water is safe to drink
- The water look smells and tastes good
- There is enough water for my needs
- There is adequate Fire Fighting Supply in approved areas
- Problems are resolved promptly
- Council manages water supply service wisely

Wastewater (includes Stormwater and Land Drainage)

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

Our Community Outcomes Initiatives(s):

All	SDC will ensure Council Five Waters policies and practices comply with statutory and best practice requirements'
All	SDC will adopt a policy on the appropriate level of Asset Management and develop practices that deliver this policy

8.2 Kaitiakitanga, Tikanga

For Maori, linking the past, present and the future is an important concept of life. There is much value in learning from the past in planning for the future. Kaitiakitanga – safe guarding our future (guardianship) and Tikanga (protocols) are two powerful concepts embodied in Maori cultural.

Our Maori Initiatives(s):

All	SDC will seek to understand and exercise the principles of Kaitiakitanga so those who follow can enjoy what we enjoy today.
All	SDC will seek to establish the right Tikanga that will enable us to deliver water services in an integrated and sustainable way

8.3 Integration of community water supply schemes

There are currently 30 physically separate community water supply schemes within SDC. Many of these schemes service people who are within the same **Community of Interest**. Those schemes “level of service” expectations are likely to be the same.

Changes to water treatment and wastewater disposal standards, operational costs, as well as service requirements arising from community growth and the need for increased security of supply can mean that water sources, treatment plants and networks need to be reconfigured. Sometimes the complete or partial integration of schemes provides an optimal long term solution.

Our Integration Initiatives(s):

All	SDC will regularly review the optimal provision of its community water services and provide for these changes in the AcMP and Strategy
------------	---

8.4 Allocation limits

Groundwater allocation reports prepared in 2004 for ECan provide technical and policy information to guide decisions on applications for resource consents for groundwater in highly allocated groundwater zones – including Selwyn District. However there is currently no allocation, particularly in “red zones” for Community Drinking Water Supplies.

Our Allocation Initiatives(s):

All	SDC will seek to secure future community water allocation
------------	--

8.5 Water demand and demand management – including growth

Per capita water demand in Selwyn is high compared to other communities in New Zealand. Undoubtedly climate and free draining soils are contributing factors to high water use. Fully allocated water resources, community growth and increased operating costs will provide increased incentive to understand the reasons for this high demand and then to implement techniques to reduce it..

Our Water Demand Management Initiatives(s):

W WW WR	SDC will evaluate and implement appropriate demand management initiatives that contribute to future protection of water resources that are abstracted for supply to communities
W WW WR	Recycling and Reuse: SDC will undertake studies to understand the water use patterns in communities
All	Conservation: SDC will implement demand strategies and water loss reduction programmes with reference to the outcomes of these studies

8.6 Ageing Infrastructure

The water supply infrastructure is comprised of above ground and below ground assets. The extent, capacity, age and condition of these assets is summarised within the 5 Waters AcMP.

Replacement budgets are determined from current knowledge of assets and an understanding of their performance, criticality and their ability to deliver levels of service.

Our Ageing Infrastructure Initiatives(s):

All	SDC will undertake appropriate condition assessments of all services on a regular basis in accordance with Council's Asset Management Policy, and fund via depreciation or other methods for the services replacement
------------	--

8.7 Affordability and Pricing

Current water supply charges are based on cost recovery within those water supply schemes. Charging systems vary between schemes – some pay according to use and others pay fixed annual charges.

Our Affordability and Pricing Initiatives(s):

All	SDC will review charging mechanisms with a view to ensuring that the charges fund the annual operating costs and contribute to the depreciation or renewal costs of the service
All	SDC will regularly review funding mechanisms (including user-pays, development contributions, metering, trade waste bylaw and charging)

8.8 Tourism

Increased tourism in an area can have two significant impacts on water supply infrastructure:

- Increased demand on services without any supporting source of funding to provide the expanded services
- Elevated risk of transmitted waterborne disease into and out of the District – especially where tourists are in contact with untreated or partially treated water.

Our Tourism Initiatives(s):

<i>All</i>	SDC will seek additional funding needs for any water supply upgrade or new installation that has demands placed on it by tourism
<i>All</i>	SDC will provide adequately treated water to facilities that are utilised by tourists and connected to the water supply network

8.9 Unserved areas

The Local Government Act 2002 requires SDC to complete a Water and Sanitary Services Assessment that is reviewed from time to time. The first assessment was completed in 2005. Improvements have resulted from that work as below:.

Our Unserved Initiatives(s):

<i>All</i>	SDC will continue to investigate and deliver options for improving the knowledge and management of private supplies
<i>All</i>	SDC will participate in the Ministry of Health Technical Advisory Programme to assist private suppliers to understand and manage the risks to their systems
<i>All</i>	SDC will instigate a drinking water monitoring programme for those settlements not currently serviced by a council scheme

8.10 Standards - Stormwater and Land Drainage

Stormwater is managed locally in accordance with agreed LoS for flood, stream and contaminant management, potential for significant local use – refer to the AcMP.

Regionally and locally, low impact urban design including stormwater attenuation is being implemented, as it is becoming increasingly unacceptable to discharge stormwater directly to streams and rainwater drainage services. Integrated stormwater planning should be supported where required, with all treatment and disposal separated from Council wastewater and private wastewater services. This can be assisted by design standards.

Our Stormwater and Land Drainage Initiatives(s):

<i>All</i>	SDC will implement integrated stormwater planning where appropriate and in accordance with its sustainability principles.
<i>All</i>	SDC will apply low impact urban design principles in accordance with the District and Regional plan and local community consultation.

9. Monitoring and Reviewing the Strategy

This strategy will be developed and kept current with the objectives of the community in mind. It covers a range of issues across the five waters with updates will occurring at least every three years to match the Selwyn Community Plan and Activity Management Plan programme.

As community expectations and the context of the strategy change, the strategy will be reviewed in part or entirely. While setting framework for the future, the strategy needs to be flexible and adaptable to circumstances as they occur. Where substantial changes are required, broad consultation will be undertaken; while focused consultation is regarded as appropriate for specific changes.

Achievement towards the success of the Strategy will be monitored annually and reported in a summary format through the Annual Report.

REPORT

TO: Chief Executive
FOR: Council Meeting 23 July 2008
FROM: Asset Manager Utilities
DATE: 15 July 2008
SUBJECT: Five Waters Strategy – Draft for Public Consultation

1. RECOMMENDATION

That the Draft Five Waters Strategy be circulated for public consultation and invitation of feedback.

2. PURPOSE

- 2.1 The purpose of this report is to:
 - Explain the reasons for the proposed Five Waters Strategy and;
 - Gain Council approval to circulate the document for public consultation.
- 2.2 The Five Waters Strategy (the Strategy) defines a pathway to address important issues that will influence the sustainable management of the five waters services – predominantly community water, wastewater, land drainage, waterraces and stormwater services.
- 2.3 Outcomes from the Strategy will be used to define work activities in the Activity Management Plan (AcMP), which also incorporates the Water and Sanitary Services Assessment as previously agreed with Council.
- 2.4 Effectively the Strategy describes what needs to be done – not how to do it.

3. SIGNIFICANCE ASSESSMENT/COMPLIANCE STATEMENT

- 3.1 The final adoption of the Strategy will be an important decision for Council. The draft Strategy attached to this report is intended for further development through the consultation process and further workshops with Council.
- 3.2 The issues and decision in relation to the recommendation has been assessed against the Significance Policy and is regarded as having low significance at this point when considering the following:
 - Feedback from the Communities of Interest (CoI) and stakeholders will be obtained over an 8 week period and evaluated as part of the consultation process recommended in this report.
 - The final Strategy may initiate actions that have financial implications for Council but not until the specific work activities are identified within the AcMP for the 2009-19 Long Term Council Community Plan (LTCCP)
 - Future decisions on financial implications will be addressed through the LTCCP process and associated consultation.
 - This report is expected to generate a variety of different views within the community that will need to be addressed before finalising the Strategy.

4. HISTORY/BACKGROUND

- 4.1 The long term provision of community water supply, wastewater, stormwater, land drainage and water races the “Five Waters” is vitally important to the Selwyn District and a responsibility of Selwyn District Council. These are all identified as significant activities within the LTCCP.
- 4.2 Council has already acknowledged the importance of sustainability through the adoption of seven sustainability principles.
- 4.3 The value of water globally has driven a number of international, national, and regional initiatives that will have long term impacts on the management of water resources and water services within Selwyn District. These initiatives are identified in the proposed Strategy, and include:
- Increasing reliance and dependence of the national economy on natural capital – land, rivers, lakes;
 - Regional Council willingness to complete a Regional Water Strategy over the next 18 months (June 2008-December 2009);
 - The special role afforded to Maori through the Resource Management Act – water is a taonga (treasure);
 - Locally ever increasing competing demands placed on the water resource – communities must have their future needs protected in the essentially first-come-first served environment;
 - Actual and continuing predicted rapid future urban growth – challenging implementation and operation of sustainable urban and rural water systems.

5. PROPOSAL

The primary objective of this report is to present a draft Strategy and to seek Council approval for feedback through public consultation.

- 5.1 To plan for the long term actions, the Strategy assesses:
- initiatives from outside Selwyn District and
 - impacts on water services that are generated from activities within the District
- 5.2 The Strategy takes a high level perspective of issues, and is supported by the Local Government Act (s10) “four well beings” and underlying sustainability principles.
- 5.3 The proposed method of consultation and the development of the Strategy from this point is as follows:

Stage	Date
1	Draft Strategy is approved for consultation
2	Community and stakeholder comment sought and considered
3	Amended Strategy and comments from consultation discussed with Council
4	Final Strategy approved by Council for inclusion in AcMP (and LTCCP 2009-2019)
5	LTCCP 2009-2019 Community Consultation (includes AcMP)
6	LTCCP 2009-2019 adopted
7	Final Strategy and AcMP updated to match adopted LTCCP 2009-2019

- 5.4 Financial limitations, community affordability, the outcome of community consultation and progress with activities that are already committed will ultimately determine work programmes and expenditure.

6. OPTIONS

6.1 Three options are considered and a brief analysis is presented in Table 1:

Table 1 – Options Analysis

Option	Benefits	Disbenefits
4. Strategy not undertaken	<ul style="list-style-type: none"> No short term financial costs 	<ul style="list-style-type: none"> It is difficult for Council to demonstrate a sustainable development approach is being taken if issues are not being considered with a long term view (LGA sec 10) The approach to water services management is more reactive than proactive Regional Strategy and national directives drive District response Lack of coordinated strategic planning across the Five Waters AcMPs do not consider all strategic issues
5. Strategy Adopted	<ul style="list-style-type: none"> Present and future issues for Selwyn are highlighted and considered Strengthens District input into Regional Water Strategy and National Directives Provides sound strategic planning for township structure plans and informs District Development Strategy. 	<ul style="list-style-type: none"> Staff time and resources required Possible reprioritisation of works programmes Amendments to AcMP's subsequent to adoption of 2009-19 LTCCP
6. Strategy Delayed	<ul style="list-style-type: none"> Council adopts a 'wait and see' approach ("low risk approach") 	<ul style="list-style-type: none"> Council does not adequately seek and relay community water issues AcMPs do not consider all strategic issues Structure Plans do not consistently recognise base issues Regional Strategy drives District response

6.2 Option 2 "Strategy Adopted for Consultation is the recommended option as after receiving community and stakeholder feedback will provide the foundation for long term planning of the 5 Water Service

7. VIEWS OF THOSE AFFECTED/CONSULTATION

As a Strategy that assists Council establish a direction for the future, consultation with the community and stakeholders is essential. The consultation programme included in clause 5.3 identifies two opportunities for the views of those affected to be offered and considered:

- As part of specific consultation on this Strategy – the recommendation of this report
- As part of broader consultation with the LTCCP 2009-2019

8. RELEVANT POLICY/PLANS

8.1 Integrated Long-term Planning

Council does not have any legislative requirement to prepare this Strategy. However, given the significance of this issue and recognising clarity is needed to direct the principles of sustainable development, an integrated strategy for the five waters is prudent.

There is a range of planning documents with differing planning horizons. This strategy fulfils a gap which is driven by the need for a long term view of the five waters.

Planning Document	Planning Window
LTCCP – Committed Budgets	3 years
Community Outcomes	6 years
LTCCP	10 years
AcMP	10-20 years
Proposed Regional Water Strategy	20 years +
Greater Christchurch UDS	35 Years
Typical Resource Consents	35 Years
This Strategy	60 years

8.2 The need for an integrated planning approach that set direction for the future was identified in the 2005 Activity Management Plans and the need has become more urgent with recent developments in the District. Environment Canterbury intend to develop a Water Strategy over the next 18 months – Appendix A.

8.3 There are number of Greater Christchurch Urban development Strategy (UDS) Action Points that include future planning and management of water services issues. It is therefore important that Council are well positioned to take a lead in this process for the benefit of current and future generations of Selwyn District.

UDS Action	Lead Agency	UDS ref
Planning for Natural Hazards and Climate Change	UDS Implementation Committee	6.15.4
Reflect infrastructure costs to support growth within LTCCPs (identified as one of the top 20 actions in 2007)	UDS Implementation Committee	6.20.4
Align stormwater discharges and treatment with the operative NRRP	Selwyn District, and other Councils	6.21.4
Prepare cross-boundary Waste Water Strategy	Christchurch City	6.22.4.1
Develop cross-boundary Water Supply Strategy	Christchurch City	6.23.4.1
Develop protocol for cross-boundary water supply infrastructure management	Selwyn District	6.23.4.2
Develop Water Supply Technical Group for Partner Councils	Christchurch City	6.23.4.3

8.4 Other asset strategies that are relevant are listed below

Strategy	Status
Parks and Reserves	- to be prepared
Solid Waste	- to be prepared and amended following the Waste Minimisation Bill
Transportation	- CRETS released, walk/cycle developed

8.5 These strategies will inform a District Development Strategy to be prepared at a later date.

9. LEGAL IMPLICATIONS

9.1 There are no legal implications in relation to this report.

10. FUNDING IMPLICATIONS

10.1 Funding to support the community consultation exercise is provided under the AcMP process.

11. INPUT FROM OTHER DEPARTMENTS

- 11.1 This report and the Five Waters Strategy has been amended following input from the Corporate and Environmental Services groups.

H Blake-Manson
ASSET MANAGER UTILITIES

ENDORSED FOR AGENDA
R Anderson
ASSET DELIVERY MANAGER



<http://www.scoop.co.nz/stories/AK0805/S00269.htm>

Water Management Strategy for Canterbury

Tuesday, 27 May 2008, 5:11 pm

Press Release: Canterbury Mayoral Forum

Media Release

On Behalf of the Canterbury Mayoral Forum

27 May 2008

Water Management Strategy for Canterbury

A comprehensive public engagement programme with the Canterbury public to prepare a strategy for water management in the region has been announced.

The strategy will identify future directions for the region's water management including its agriculture, recreation and environmental aspects.

"Water management is almost certainly the biggest long-term issue facing the Canterbury region," says Bede O'Malley, chairman of the Steering Group charged by the Mayoral Forum with managing the development of the strategy.

"It is very much a renewable but limited resource and increasingly there are competing demands for it. We need a strategy that enables Environment Canterbury to allocate this resource in the best and widest interests of the region.

"There are many considerations. The benefits for the regional economy from agriculture and tourism are vital. The opportunity to generate energy from renewable water resources is also vitally important. A wide variety of recreational and environmental interests are connected in some way with water and, of course, quality of drinking water is paramount.

"Building a strategy that has wide buy-in will not be an easy task, but the alternative is win/lose conflicts fought out in communities and courts often with a result that pleases no one," says O'Malley.

Expected to take up to 18 months to complete, the strategy is intended to be a guide to water management in the region for at least the next 20 years. It will cover all major areas of usage across the whole region.

It will involve two stages of consultation, first about the uses and benefits of water involving both stakeholders and the public. Second, the focus will shift to specific projects and activities when, once again, there will be stakeholder and public consultation. There will also be a strong emphasis on local engagement right around the region.

Environment Canterbury Chairman, Sir Kerry Burke said that the strategy, once completed, will be considered by his Council for proposed introduction into the Canterbury Regional Policy Statement, the Natural Resources Regional Plan (NRRP) and ECan's Long Term Council Community Plan (LTCCP). "Indeed, it will need these statutory measures to confirm it, to give it the force of law and for any public funding to be committed to it," says Sir Kerry.

“Being a non-statutory process it will have the flexibility necessary to encourage positive interaction, even negotiation between the stakeholders. It must still face and pass the tests of the statutory machinery process,” says Burke. “This will be essential in order to have the strategy confirmed and have it locked in with the community’s support and backed by the law.”

Commenting on the proposal, chairman of the Mayoral Forum and Christchurch Mayor Bob Parker says that the regional mayors are under no illusions that this is an ambitious project.

“It’s ambitious, but absolutely necessary. It will require the goodwill of all involved to succeed. None of us wants to be in the situation of 20 years down the track with people saying if only our public officials had had greater foresight we would be in a much better position with water allocation and use.

“Now is the time to have foresight, and this strategy-building process is the way to do it, but we should have no illusions about the complexity of the task we are about to embark on.”

“It should also be noted that the world will not stop while this strategy is being developed. There are a number of water-related matters in public hearings or before the courts in the region and these should continue to their logical conclusion. Decisions made in these processes will become inputs to the strategy,” says Parker.

Some modern technology will be employed to deal with the complexity of the task. A method called Open Strategy is to be used. Developed in Canterbury, but largely employed in the UK over the last few years, Open Strategy is an online method of recording and sorting input into the strategy-forming process. It also enables inclusion of information from previous and current scientific studies of water use to ensure that the valuable work already done to date is not lost.

A range of communication techniques will also be used to ensure access of the stakeholders and the public to the evolving strategy and experience has been called upon from the recent and successful Greater Christchurch Urban Development Strategy programme involving Environment Canterbury and Councils.

“This will be a very open process. No one who has a contribution to make should be left out. We have also vetted the approach with a large number of people in the region and the general consensus is that it is well conceived, says O’Malley.

Stakeholder discussions begin in late June with the first round of public consultation beginning in August. A web site designed specially for the project will be launched in mid June. Also, at that time, an expanded membership of the Steering Group involving additional community representatives will be announced.

ENDS

A3.5 Levels of Service – Detailed Explanations

	Level of Service
1	<p>The community is provided with water services to a standard that protects their health and property</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Drinking water supplied is always safe to drink and sufficient water is available for essential needs, • Wastewater is removed effectively and disposed of safely without overflows causing flooding or contamination, • Stormwater is managed to minimise flooding, • Water races supply sufficient water for stock needs and do not cause flooding, and • Land drainage systems operate effectively. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Unsafe drinking water, or poor sanitation may cause serious illness or, in the worst case, death. Buildings without a safe water supply and adequate sanitary wastewater and stormwater drainage cannot be occupied. • Potential health consequences not only impact on those connected to Council water services, but also those using connected businesses, schools, and community facilities. • The lack of safe water supply and sanitation services may preclude the provision of schools, healthcare and other services for the wider community, and economically impact on business in the community. • Blockages and failures in drainage systems may cause flooding which can damage property and restrict use of roads and other amenities. Floodwaters may also carry contaminants hazardous to health. • Inadequate supply of stockwater places livestock at risk. • Ineffective land drainage may damage crops or result in lost productivity of land.
2	<p>Customers are provided and fairly charged for water services that meet their reasonable needs</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide adequate quantity, quality and reliability of services for reasonable needs. Such needs may change over time in response to lifestyle changes or resource availability constraints. • Provide for fire-fighting needs in designated zones. • Apply fair charges for the operation and maintenance of existing services and the provision of new or upgraded facilities. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Excessive or irresponsible use of the services by some sectors of the community may compromise service delivery to others, or unfairly burden others with additional costs to provide increased service capacity. • Excessive or unfair charges have adverse social and economic effects. • Insufficient charges may prevent the continued provision of the required level of service or place an unfair cost burden on future generations. • Unfair charging systems would see some sectors of the community paying a disproportionate amount for services relative to others.
3	<p>Nuisance effects of water services are minimised</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Drinking water quality, water pressure and reliability of supply is acceptable to consumers, • Disruption to services are minimised, and • Infrastructure does not create problems or cause inconvenience. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • While safe to drink, water may be discoloured, have an undesirable taste or odour, stain laundry or sanitary fittings, result in limescale buildup, or reduce lathering of soap. Low water pressure may affect showering, garden watering, and car washing. • Service disruptions are inconvenient for household customers, but may adversely impact business/farming operations. • Minor surface flooding may not cause damage but can be an inconvenience, preventing normal use of land and amenities. • Poorly design, operated or located infrastructure may cause noise, odour, visual or other impacts, for example a noisy pump station adjacent to residential properties.

4	<p>Water services are provided in a cost effective manner</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Spend money on water services effectively and wisely by managing and operating the water services to get the most out of the assets and implementing work programmes that reflect community priorities. • Identify and manage external factors that may impact on the future cost of service provision. • Consider 'whole-of-life' costs and apportion capital costs equitably over time. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Poor planning, management and operation of water services will result in additional costs to the customer, or inability to provide the desired level of service within an agreed budget. • The current community may carry an unfair share of capital works costs. • Deferral of expenditure may place an unfair cost burden on future generations.
5	<p>Problems with water services are addressed in a timely manner and prioritised according to risk and need</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Respond to service problems and address customer complaints in a timely manner. • Give priority to resolving service deficiencies that have greatest impact on the community, eg where the consequences are most severe or widespread. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Poor customer satisfaction. • Adverse effects on public health, damage to property, economic loss, environmental damage.
6	<p>Service capacity is provided to accommodate growing communities, where this growth is sustainable</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide water services in response to the needs of changing and growing communities without compromising existing levels of service for existing communities. • Plan for and develop additional service capacity in appropriate locations in a timely manner where growth is sustainable. • Limit infrastructure development as may be necessary to constrain growth to sustainable levels. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Declining service standards (eg more frequent water restrictions) for existing customers if additional demand exceeds service capacity. • Constrained economic development through lack of essential services. • Long-term adverse effects (social, cultural, economic, and environmental) arising from unsustainable development facilitated through inappropriate provision of services.

7	<p>Adverse effects of water services on cultural and heritage values are minimised</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide water services without compromising cultural and heritage values associated with the water, the water services infrastructure or the District as a whole. • Provide water services to facilitate protection of, and access to, cultural and heritage sites and facilities. • Recognise that water has particular cultural significance for Maori. Maori belief is that water and all resources have Mauri, a life force. Te Taumutu Runanga have prepared a Natural Resource Management Plan that explains the values that the local resources hold for them. • Recognise that the existing water services infrastructure have cultural or heritage value that contributes to the character of Selwyn District. Settlers from the 1840's onwards found the district mainly flax swamp with light tussock on the higher lands. In order to bring the swamps into production a system of drains were installed. The country became highly productive and thriving local communities were established. Water races constructed to enable productivity in dryland areas have parallels. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Loss or degradation of sites, artefacts, structures, waterways, landscape features and other values of cultural and heritage importance. • Changes to Selwyn District's rural character, particularly through loss of small rural communities founded on the basis of water services. The Community Plan recognises the importance of the rural theme of Selwyn District. • Degradation of the Mauri of land, water or the sea by reduction of its capacity to support traditional uses and values. The values of Maori are considered to be a matter of national importance.
8	<p>Adverse effects of water services on the environment are minimised.</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Avoid, remedy, or mitigate adverse effects of the water services on the environment (as required by the Resource Management Act). The 5Waters activity is strongly connected to the environment. It relies on the ability to take water from the environment for domestic, stock and irrigation purposes. It discharges wastewater back to the environment, and manages water (land drainage and stormwater) within the environment. • Take into consideration how the provision of water services may facilitate land use activities, such as agriculture, residential development and industry that have their own environmental impacts. • Ensure that the community is aware of how their actions may contribute to adverse environmental effects, eg disposal of pollutants to stormwater drains, or excessive water use. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Severe, long-term impacts not only on the environment, but also on the social, cultural and economic wellbeing of Selwyn District. • Depletion of water resources leading to unreliable water supply systems that may make living, working and doing business in the District difficult or undesirable. • Degradation of water quality, having impacts on land and water bodies and their associated habitats and ecosystems. This can also have public health consequences, compromise recreational use of water (eg swimming, fishing, kayaking, beaches), and degrade cultural values associated with water, eg Te Waihora as a food source. • Loss of habitats and biodiversity in the District, including naturalised water races and land drainage channels. • Significant costs to mitigate adverse impacts, or to provide new water sources or additional treatment processes if potential water sources are depleted or degraded.

9	<p>Greenhouse gas emissions from the provision of water services are minimised.</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Minimise potential climate change impacts arising through emission of greenhouse gases. • Reduce electricity use to achieve energy costs savings and reduce Council's carbon footprint. The 5Waters activity accounts for approximately half of SDC's annual power consumption. • Reduce greenhouse gas emissions from the use of liquid fossil fuels (ie petrol and diesel) through improved management and utilisation of technology. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Contribute to climate change impacts resulting from global greenhouse gas emissions on a global level. These impacts will have adverse social, economic and environmental consequences on a global scale as well as for Selwyn District. • Fail to meet Council's obligation to address this issue through supporting New Zealand's move to meet Kyoto obligations. • Be poorly placed to operate in a carbon trading environment and be subject to additional taxation that will increase the cost of providing water services.
---	--

A3.6 Sustainability Principles and Relationship to Levels of Service

Sustainability Principles	Relationship with Level of Service
1 Make decisions based on the four aspects of well-being	<p>1 The community is provided with water services to a standard that protects their health (<i>social well-being</i>) and property (<i>economic well-being</i>)</p> <p>2 Customers are provided (<i>social</i>) and fairly charged (<i>economic</i>) for water services that meet their reasonable needs</p> <p>3 Nuisance effects of water services are minimised (<i>social and economic</i>)</p> <p>4 Water services are provided in a cost effective manner (<i>economic</i>)</p> <p>5 Problems with water services are addressed in a timely manner and prioritised according to risk and need (<i>social, economic, environmental</i>)</p> <p>6 Service capacity is provided to accommodate growing communities, where this growth is sustainable (<i>social, economic, cultural, and environmental</i>)</p> <p>7 Adverse effects of water services on cultural and heritage values are minimised (<i>cultural</i>)</p> <p>8 Adverse effects of water services on the environment are minimised (<i>environment</i>)</p> <p>9 Greenhouse gas emissions from the provision of water services are minimised (<i>environment</i>)</p>
2 Observe the Precautionary Principle to provide contingency and enable adaptability of our community	<p>9 Greenhouse gas emissions from the provision of water services are minimised – <i>In the absence of a detailed understanding of climate change SDC is acting on the best infoResource Management Action available</i></p>
3 Seek “intra-generational” and “inter-generational” equity	<p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>Fair charging systems promote equity for all. Both current and future needs and demands on resources will be taken into account in ascertaining what reasonable needs actually are.</i></p> <p>6 Service capacity is provided to accommodate growing communities, where this growth is sustainable – <i>Growth will be restricted where additional service capacity cannot be provided so as not to adversely impact on services provided to existing consumers, or leave a legacy of unsustainable development for future generations. Additional service capacity will be provided, where possible, to meet the needs of future generations without imposing a burden on current consumers.</i></p>
4 Internalise environmental and social costs	<p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>Fair charging systems will recognise associated environmental and social costs and ensure that these costs are not deferred to future generations.</i></p>
5 Foster community welfare	<p>1 The community is provided with water services to a standard that protects their health and property – <i>strong communities require a safe water supply and drainage system</i></p> <p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>5 Waters services provide for community needs</i></p> <p>3 Nuisance effects of water services are minimised – <i>The wellbeing of a community can be adversely affected by the 5 Waters services if not well managed</i></p> <p>7 Adverse effects of water services on cultural and heritage values are minimised – <i>culture and heritage are elements of community capital that are to be promoted</i></p>
6 Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems	<p>8 Adverse effects of water services on the environment are minimised – <i>Minimising adverse effects and seeking to achieve positive environmental outcomes will promote biodiversity and ecosystem protection.</i></p>

Sustainability Principles	Relationship with Level of Service
7 Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes	<p>7 Adverse effects of water services on cultural and heritage values are minimised – <i>Cultural values cross District boundaries and local efforts can contribute to sustainability on a regional/national level</i></p> <p>8 Adverse effects of water services on the environment are minimised – <i>The environment is wider than Selwyn District and local environmental efforts can contribute to sustainability on a regional/national level.</i></p> <p>9 Greenhouse gas emissions from the provision of water services are minimised – <i>Climate change associated with greenhouse gas emissions is a global issue that SDC cannot address in isolation, but can contribute to wider efforts in this area.</i></p>

A3.7 Pre-Prioritisation

Pre-prioritisation steps i.- iv.

Level of Service Assessment						
LoS Description:	Weighting:	Performance Measure:	Performance Level			
			Current:	Resultant:		
1 The community is provided with water services to a standard that protects their health and property	0.19	1.2 DWSN 2 compliance for water in distribution zone	2	4	0.38	
2 Customers are provided and fairly charged for water services that meet their reasonable needs (quantity)	0.15		0	0	0.00	
3 Nuisance effects of water services are minimised	0.07	1.1 Frequency of unplanned interruptions	1	4	0.21	
4 Water services are provided in a cost effective manner	0.15	1.2 Unplanned maintenance costs as a proportion of total O&M costs	1	3	0.30	
5 Problems with water services are addressed in a timely manner and prioritised according to risk and need	0.14	1. Frequency and Average duration of unplanned service interruption	1	4	0.42	
6 Service capacity is provided to accommodate growing communities, where this growth is sustainable	0.15		0	0	0.00	
7 Adverse effects of water services on cultural and heritage values (including indigenous and local/regional) are minimised	0.03		0	0	0	
8 Adverse effects of water services on the environment are minimised	0.07	1 Receiving water quality	1	3	0.14	
9 Greenhouse gas emissions from the provision of water services are minimised	0.05	1.1 Scope 1 and Scope 2 GHG Emissions	1	3	0.1	
Sub Total:					1.55	
Exposure:					5	
Total:					7.75	

Manual Override: ☐ 1

Reason for Manual Override:

A3.8 Example of Alpine Community Of Interest Prioritised Projects

Community of Interest: **Alpine**

Utility: Wastewater													
Scheme: Castle Hill wastewater													
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Level of Service)													
630	Prepare Replacement Schedule for Pipes in Poor Condition	5	0	2000	0	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			0	2000	0	0	0	0	0	0	0	0	0
Projects													
429	Castle Hill Wastewater Disposal Resource Consent Renewal	7	8000	0	0	0	0	0	0	0	0	0	0
629	CCTV survey of wastewater reticulation	5	10000	0	0	0	0	0	0	0	0	0	0
Projects Subtotal:			18000	0	0	0	0	0	0	0	0	0	0
Castle Hill wastewater Scheme Total:			18000	2000	0	0	0	0	0	0	0	0	0
Scheme: Lake Coleridge wastewater													
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Level of Service)													
631	Prepare Replacement Schedule for Pipes in Poor Condition	5	0	1500	0	0	0	0	0	0	0	0	0
245	Install Lake Coleridge UV Control System	5	0	0	10000	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			0	1500	10000	0	0	0	0	0	0	0	0
Projects													
247	Prepare Lake Coleridge STP Communication Plan	6	5000	0	0	0	0	0	0	0	0	0	0
246	Prepare Lake Coleridge STP Emergency Plan	6	5000	0	0	0	0	0	0	0	0	0	0
Projects Subtotal:			10000	0	0	0	0	0	0	0	0	0	0
Lake Coleridge wastewater Scheme Total:			10000	1500	10000	0	0	0	0	0	0	0	0
Wastewater Utility Total:			28000	3500	10000	0	0	0	0	0	0	0	0
Utility: Water													
Scheme: Arthurs Pass water supply													
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Growth)													
426	Assess Tourist Demand Growth and Capital Works Upgrade Strategy	7	2000	0	0	0	0	0	0	0	0	0	0
Capital (Growth) Subtotal:			2000	0	0	0	0	0	0	0	0	0	0
Capital (Level of Service)													
482	Fire Tank Reservoirs	25000	0	0	0	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			25000	0	0	0	0	0	0	0	0	0	0
Projects													
636	Review Public Health Risk Management Plan for Arthurs Pass	13	0	0	2500	0	0	0	0	0	0	0	0
624	Underlake Catchment Sanitary Survey at Arthurs Pass	6	0	0	2500	0	0	0	0	0	0	0	0
653	Review Protocol Treatment Requirements and Capabilities for Arthurs Pass	6	0	0	2500	0	0	0	0	0	0	0	0
264	Investigate WTP Shut-Down on Power Failure	6	0	0	1000	0	0	0	0	0	0	0	0
263	Review Seismic Restraint	5	0	0	2500	0	0	0	0	0	0	0	0
578	Review of Backflow risk management for Arthurs Pass	4	2000	0	0	0	0	0	0	0	0	0	0

For:	2009 Hynds Paper of the Year	
To:	INGENIUM	
Category:	Asset Management	
Title:	5Waters – Sustainable Activity Management Planning	
Authors:	Hugh Blake-Manson CPeng, Int(PE) Asset Manager Utilities hugh.bm@selwyn.govt.nz	Rob Blakemore, CPeng FIPENZ Manager Environmental Training Centre Rob.Blakemore@opus.co.nz
Organisation:	Selwyn District Council PO Box 90, Rolleston 7643 New Zealand	138 Hutt Park Road PO Box 30 845 `Lower Hutt New Zealand

Abstract:
Max 200 words

A purpose of New Zealand's Local Government Act 2002 is to deliver sustainable development. Local Authorities (Councils), through their Asset Management groups, are moving rapidly to achieve this purpose using the vehicle of Activity Management Plans (AcMP).

The International Infrastructure Management Manual (IIMM) guides AcMP development. The guidelines follow robust and traditional engineering principles – arguably sustainability is not a priority component. The challenge for each of the now Councils is to make a solid connection between comprehensive AcMP and sustainable development without national assistance. This is very inefficient, as all councils have common functions and should be able to share expertise and intellectual property.

Through a mutually beneficial Professional Service Contract, Selwyn District Council and OPUS International Consultants assessed Selwyn's 5 water services (5Waters) as one AcMP. We used a forward-thinking, interconnected set of tools; which make clear the consequences of not changing current and future levels of service, when assessing costs and benefits.

The tools include: integration of the 5Waters, derivation of common LoS and a scalable, transferable programme which prioritises future works based on contributions to LoS for future generations. This sets a new and clearly sustainable AcMP direction for the Council and its community. This process is also transferable to other Councils, with necessary local adaptation.

1.0 Identification of the Issues

1.1 Setting the Scene - The 5Waters

The Selwyn District Council (hereafter council) is a local authority situated in the South Island of New Zealand - cf. Figure 1-1. One of 75¹ in New Zealand, council is in many ways a typical example of the majority of its 74 namesakes as a provider of “core business” activities. Core business is considered to be delivery of water, waste, transportation, regulatory and cost recovery services.

Council is located in the heart of the Canterbury Region’s groundwater zone. How and where water for human, agricultural, cultural and recreational uses is managed is of considerable interest to Cantabrians. The 5Waters Activity is already considered to be a significant one. Council has consistently regarded the provision of the 5Waters as vital to maintaining the community’s health and well-being.

Council sustains more than 70% or 26,000 people of its community via 30 independent and distinct community water service areas. Water service areas are a component of the 80 services areas within the 5Waters Activity. The 5Waters are:

#	Type	# Service Areas
i.	Water	30
ii.	Wastewater	17
iii.	Stormwater	19
iv.	Land Drainage	11
v.	Stockwater	3

The 5Waters are part of the same hydrological water cycle; hence the term “water” is interchangeable throughout this paper, and is therefore regarded as one activity.

Figure 1-1: Council Location



Council has access to a globally unique, high quality water source. Secure, uncontaminated, untreated freshwater for drinking is still delivered to the majority of accessible populated areas in the district. How Council ensures that this life-giving resource is preserved for future generations is of utmost importance.

Generally streams, rivers and springs are not part of this Activity, as they are managed by the overarching authority – the Canterbury Regional Council. In fact, the Canterbury Regional Council is delegated authority to manage the water resource, with Council one of approximately 18,000 parties requesting consent to take/use and discharge it.

1.2 Sustainable Development or Sustainable Management?

The Canterbury Regional Council’s regional water management function is complicated by its requirement to address the purposes of the Resource Management Act 1991 - *sustainable management* and of the Local Government Act 2002 - *sustainable development* cf. Appendix A1.

However, the Canterbury Regional Council’s primary focus has become one of delivering *sustainable management* outcomes. Council on the other hand gives priority to the whole of its communities’ needs with a *sustainable development* focus. It currently does this through community dialogue, identifying the impact of proposed changes on the four well-beings (social, cultural, environmental and economic) and implementing a balanced and affordable solution on a case-by-case basis. This balance of the four well-beings balance is also referred to as the quadruple bottom line.

Both sustainable development and sustainable management have been interpreted by the Courts, various territorial local authorities and the community in markedly different ways. We shall consider what this means from a Council 5Waters viewpoint later in this paper.

1.3 The 5Waters Assets – Water and Physical Infrastructure

Council’s role is to ensure that the four well-beings are met across its business. In this instance that translates to delivering a 5Waters activity which meets the level of service requested by the Community of

¹ 12 Regional Councils, 16 City Councils, 57 District Councils (including the Chatham Islands and four unitary Councils which have regional functions)

Interest (hereafter Col). The Col were determined through grouping areas with similar social, economic or demographic features. Often these Col group customers paying targeted rates for any or a number of the 5Waters services. Council has used this idea, and through a rigorous process identified five separate geographical areas with common features. Identifying five unique Col has significantly assisted in the sustainability process, as it provides manageable clustered groups.

In New Zealand it is recognised in law that water is a public resource, and therefore has no owner. For the purposes of the 5Waters Activity Management Plan (hereafter AcMP), that view is not appropriate. Along with the physical assets that convey water (in its various states) water itself is regarded as a community asset of infinite life. This is because water:

- Is the substance without which there would be no infrastructure, nor habitable environment for humans, and hence no four well-beings.
- Has an infinite life, is part of a continuous cycle and is regarded as having high cultural significance ie. taonga (treasured) status.
- Must be secured for human and environmental uses to meet current and future generations needs
- Must be managed for built communities to exist
- Must be understood, monitored and cared for

2.0 The Issues – Turning An Oil Tanker?

Council has chosen to be proactive to the range of core issues refer Table 2-1 - substantially evolving its approach to 5Waters Asset Management. Any attempt to address the negative effects of these issues has been likened to trying to “turn an oil tanker”. The issues are interlinked across four levels: global, national, regional and local. The effectiveness of council to mitigate or avoid issues improves significantly the closer they are to its governance zone. Never-the-less, 6-9 years of incremental effort are typically required in Councils to adapt, mitigate or change in response to national and global issues. The challenge then lies in identifying if this timeframe can productively be shortened.

Table 2-1: Issues For & Influence of Council 5Waters Activity.

		Key	Sphere of Influence		
		Global	National	Regional	Council
<p style="text-align: center;"> </p>					
<ul style="list-style-type: none"> – Kyoto Climate Change – Liquid fuels reliance – Water Quality Standards – Mobility of Waterborne disease 		<ul style="list-style-type: none"> – Legislation – Resource Management, Local Government Act (Drinking water) Amendment – NPS Freshwater Management – Restrictive distances for international trade 	<ul style="list-style-type: none"> – Over-allocated freshwater – Regional Water policies – General quality decline – Aggregate supply low – Growth (brown field and greenfield) 	<ul style="list-style-type: none"> ↑ OPEX costs² ↑ CAPEX costs³ ↑ Compliance costs ↑ LoS expectations Numerous diverse schemes Diverse interests for water Proposed irrigation scheme 	

Specific local issues for council are highlighted below:

- The second highest population growth rate⁴ in New Zealand, with associate high resource needs
- 5Waters assets of \$157 M, increasing by an average of \$4 M / yr
- Diverse and quickly changing communities of interest, with changing expectations
- Potential for Central Plains Water Irrigation scheme covering 60,000 ha of part developed/ undeveloped upper plains – consents have been applied for
- Level of Service creep – both with customers demanding more and Asset Managers providing a service above that requested
- Increases in operational, capital and compliance costs above consumer price index levels
- The Office of the Auditor General (hereafter OAG) is increasing its expectations for AcMP standards, with limited industry guidance on tools to provide holistic sustainable outcomes
- Effect of historical legislative changes cascading into substantial compliance costs increases

² OPEX – operations and maintenance expenditure,

³ CAPEX – capital (growth and Los) expenditure, LoS – levels of service,

⁴ www.stats.govt.nz 30th June 2007 (4.4 %)

Council has identified a path that will lead to rapid and measurable improvements to outcomes for the 5Waters within the next 3-year planning cycle. It will achieve this through a revised framework approach.

3.0 AcMP Framework – Current and New

3.1 Current AcMP Framework

The way council undertakes the 5Waters Activity is largely directed by regulation⁵. Driven by the Local Government Act 2002, council has to deliver a Long Term Council Community Plan (hereafter LTCCP) covering ten consecutive financial years. The AcMP is the vehicle for this detailed financial, asset, demand forecasts and risk assessment data. AcMP undergo intensive revision on a 3-yearly cycle. At its simplest, this allows council to plan for a long-term view while enabling it to adjust for constantly changing financial factors.

This traditional role of AcMP within this LTCCP process is provided below cf. Figure 3-1. In New Zealand, AcMP are developed using the 2006 issue International Infrastructure Management Manual (hereafter IIMM) guidelines and supporting documentation or guides⁶. Section 3.2 discuss the improvements, shown in Figure 3-2.

Figure 3-1: A “standard” AcMP framework with prioritisation

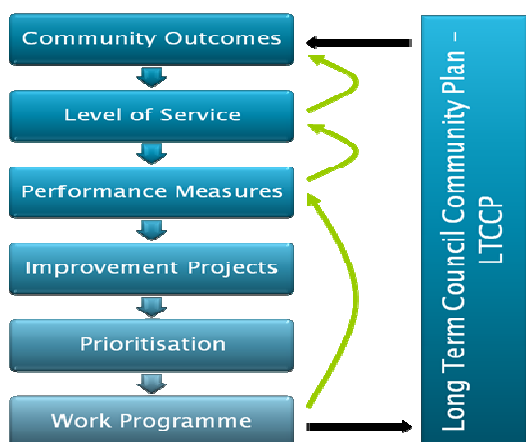


Figure 3-2: The Council 5Waters AcMP framework



The OAG audits the quality of Council's AcMP against the requirements of the Local Government Act 2002 and the IIMM and has stated that continual improvement is required. Expected improvements for the 2009-2019 LTCCP include providing proof that:

- Sustainable development is included
- Different activities are being integrated for efficiencies
- Data integration is being undertaken to deliver more resilient outcomes

The Audit process is powerful, particularly for any Councils' which fail in delivering the minimum level LTCCP required. Where major deficiencies exist a qualified audit is provided; this can have broad negative effect on the whole of that council⁷. Effects could include community criticism, and exposure in the media.

3.2 Council's New AcMP Framework

Having identified the issues and drivers, council needed to confirm what level the 5Waters AcMP should reach. An options assessment cf. Table 3-1 identifies the high level decision process undertaken. Each of the options was constrained by:

- Significance of the Activity - 5Waters is a significant activity
- Council (and staff team) approach - Council LTCCP working party direction
- Human resources and funding - Skills, other work demands and limits to fund extra works

⁵ e.g. Health (amendment) Act prescribes drinking water quality standards, RESOURCE MANAGEMENT ACT based resource consents prescribe wastewater and stormwater quality and quantities, Regional Plans prescribe resource limits

⁶ refer www.nams.org.nz.

⁷ Selwyn District has received an Audit score of "good" for the draft 2009-2019 based primarily on the assessment of the 5Waters AcMP

Table 3-1: Options Assessment – 5Waters AcMP Standard

Option	Benefits	Risks
1. Deliver “do minimum” AcMP	<ul style="list-style-type: none"> Meets Audit NZ requirements Low cost, low resource demands in short term 	<ul style="list-style-type: none"> No view beyond 10 years, or recognition of issues Efficiencies in integration and prioritisation not initiated Delivers minimum LTCCP requirements Sustainability separated from expenditure
2. Provide 5 Individual AcMPs	<ul style="list-style-type: none"> Individual Plans at Core Plus level, meeting appropriate practice 	<ul style="list-style-type: none"> Staff time and resources Inefficiencies in prioritisation of individual Plan works programmes Does not meet national direction Sustainability separated from expenditure
3. Provide Sustainable, Strategic & Integrated 5Waters AcMP	<ul style="list-style-type: none"> Holistic overview and delivery of 5Waters under integrated Level of Service framework Begins pathway to improved management across all lifecycle components of the 5Waters Sustainability and economic commitments build into costs 	<ul style="list-style-type: none"> High initial cost (economic) Requires significant change in way of thinking from staff, Council and community. Outside IIMM guidelines Delivers robust LTCCP requirements

The risk of failure in not having the right team with clear understanding to undertake the work is common to all options. Option 3 was selected by Council, as it was judged as the most appropriate option to meet the community well-beings. A new framework was developed to meet Option 3 requirements cf. Figure 3-2.

3.2.1 Consultancy / Council Alignment

Council recognised that the conventional method of preparing separate plans for 5 separate activities was never going to achieve coordinated sustainable management of its water utilities. There needed to be a new platform created with a fresh approach that allowed for progressive change on an ongoing basis well beyond 2019. It also recognised that external assistance was needed to do this. However, the value of external assistance was dependent on:

- An ability to cast different pairs of eyes around the world to observe trends and changes
- A team of people with wide ranging but relevant skills, who passionately believed in provision of services to meet the needs of existing and future generations
- Understanding of Sustainable Development principles

At the same time the people in this team needed to understand and accept the political framework of Selwyn District Council, and the practical limitations of what was affordable and achievable for its communities. The selection of a Consultancy Team used a process that started with written offers of service and finished with a facilitated workshop with the consultant's people who would be leading and guiding the team.

The workshop environment confirmed Council's view of the preferred consultant. Council staff tested the Consultant's:

- Environmental views eg. proposed holistic methodology, views of sustainability
- Formal training e.g. breadth and depth of technical proficiency to complete activity management plans and forward thinking approaches
- Relationships e.g. ability to relate to others who would form part of a team

On the basis of this process, Opus International Consultants were awarded the commission.

4.0 5Waters AcMP - New

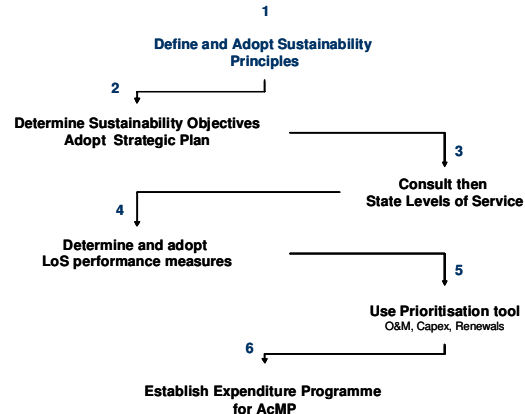
4.1 Implementation Overview

The tools Selwyn have utilised and developed in advancing its implementation of Activity Management may be considered as enabling layers of sustainability cf. Figure 4-1. Council worked outside the IIMM to seek local solutions within a global framework. In general terms the process is:

1. Development of a Sustainability Framework e.g. Adoption of high level Sustainability Principles
2. Determining Sustainability Objectives and Implementation of the 5Waters Strategy based on adopted Sustainability Principles
3. Consultation with the Community of Interest to seek their views on desired Levels of Service
4. Application of Sustainability Principles to final derivation of Levels of Service and Performance Measures
5. Evaluation of proposed projects/improvements against sustainability derived Levels of Service
6. Development of prioritised expenditure programmes

Each of these components is described in further detail below.

Figure 4-1: 5Waters AcMP – Layers of Sustainability



4.2 Step 1 - Define and Adopt Sustainability Principles

4.2.1 The Council 5Waters Sustainability Perspective

Sustainable development covers a complex range of ideas and meanings, dependant on the context it is used in and the views of those referring to it. A local definition of sustainability needed to be established, one which the Council would understand and apply directly to its circumstances.

Sustainable principles were developed within the following guidelines:

- A focus on lifecycle costs, optimisation and understanding risk. Until this point the solid lines of connection between sustainable asset management and sustainability had not been drawn. Nor had there been adequate focus on providing for future generations - in that levels of service had focused on what the existing customers were currently provided. Selwyn was intent on fixing this
- A definition with which the communities could identify. This was easier when one asked them whether they had a role to protect the future of their grandchildren and great grandchildren – the anthropocentric view point. There was an acknowledged risk that sustainability was becoming an overused word and yet no-one had made it clear what it meant, nor why it was relevant. Hence the derivation of principles and explanations to the principles
- An expectation that financial pressure and stress on funding capabilities in the community would continue unless a forward-thinking approach was provided. This allowed Council to understand and make clear the consequences of not taking certain actions

4.2.2 A Framework

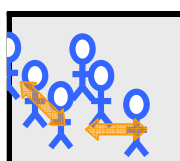
A framework was developed to guide decision making and monitor progress towards sustainability of the 5Waters Activity. The framework used a set of high level sustainability principles that complement the four well-beings, bringing these together with a long-term focus to develop themes and objectives with associated performance indicators. Ultimately the framework could be applied across all council activities cf. A3.1.

4.2.3 Sustainability Principles

Seven Principles of Sustainability were developed. These then provided the framework for direct action in delivering projects which provide the Col with physical infrastructure to support its well beings, meanwhile supporting the potential for adoption in all Council activities.

These Principles were adopted by council “for the purpose of strategic and asset management planning and implementation”. Principle 3 is provided in Figure 4-2 (full extent Appendix A3.2).

Figure 4-2: Principle

	<p>Principle 3: Seek “intra-generational” and “inter-generational” equity</p> <p>Improve quality of life and create opportunity for all of the current generation, without compromising the quality of life and opportunity of future generations.</p>
---	---

4.3 Step 2 - Sustainability Objectives and Strategic Plan

Achievement of sustainability objectives (as measured by sustainability indicators) will ultimately be affected through each of council’s key AcMPs. Adaptation of the 5Waters Principles may occur; however achieving sustainable outcomes at an activity level will contribute to council’s overall sustainability based performance measures.

4.3.1 Strategic Plan

Council’s 5Waters Strategy is a foundation document which supports the AcMP. Recognition that the issues in Table 2-1 could no longer be ignored, provided the incentive for council to develop a 5Waters Strategic Plan cf. Appendix A3.3. This was inherently supported by the sustainability principles. The strategy has identified a range of initiatives aimed at achieving “a sustainable district, a place which we and future generations can use and thrive in.”

A direct outcome of this strategic plan is development of a “core plus” AcMP with measurable, directed and targeted actions conveying the community on the pathway to sustainability. All projects undertaken in the 5Waters are prioritised and then selected to achieve the levels of service set under the sustainability platform.

4.4 Step 3 – Consult On Then State LoS

A key requirement of council 5Waters AcMP was to adopt together with LoS cf. Figure 4-3 the:

- Sustainability Principles and four well-beings
- Council’s existing Community Outcomes

LoS were debated with focus groups throughout the Selwyn district. They are designed to protect the four well-beings of existing and future generations.

Figure 4-3: 5Waters Levels of Service

Level of Service	
1	The community is provided with water services to a standard that protects their health and property
2	Customers are provided and fairly charged for water services that meet their reasonable needs
3	Nuisance effects of water services are minimised
4	Water services are provided in a cost effective manner
5	Problems with water services are addressed in a timely manner and prioritised according to risk and need
6	Service capacity is provided to accommodate growing communities, where this growth is sustainable
7	Adverse effects of water services are cultural and heritage values are minimised
8	Adverse effects of water services on the environment are minimised
9	Greenhouse gas emissions from the provision of water services are minimised

The process and outcomes received strong positive feedback.

While the Levels of Service are written in non-technical language it may not be clear to customers exactly what they mean in relation to the services that they receive and the environment they live in. Explanatory text⁸ was prepared to assist customer understanding of each Level of Service and explain the potential outcomes if they were not achieved. Council needed to develop forward works programmes that were directly linked to maintenance or improvement of levels of service. Many projects will affect more than one levels of service. Early in the process it was realised that it was crucial for CoIs to convey their views on the relative importance of these Levels of Service. These views could then be converted into weightings that could be applied in the prioritisation process explained below. Through a process of customer focus groups and telephone surveys, weightings of each Level of Service for each CoI were derived.

This process has provided a key point of difference to other multi criteria approaches – in that priorities for spending community money could be directly linked to the communities views of the relative importance of each of the Levels of Service.

⁸ A3.5refer A3.5 for full explanation

These Levels of service are common to the 5Waters and in turn are “hard wired” to the sustainability principles adopted by Council

4.5 Step 4 –Performance Measures

The LoS also have associated performance measures, which ensures they:

- Can be benchmarked to any other 5Waters utility
- Are mutually independent of each other – this was an important consideration for development of a tool that was used to prioritise improvements and work programmes

The work to clearly define the base data required was undertaken in July 2009. A robust system for measuring, recording and reporting performance measures is being developed. This will utilise a data warehouse type system. Council's success in delivering a service can then be determined after 1-2 years of data has been assessed i.e. council must determine the current performance measures to establish reliable and achievable future performance targets.

4.6 Step 5 - Prioritising Expenditure

An important final product of integrated asset management plans is expenditure programmes for the next 10-20 years. The final outcomes of these programmes must be sustainable for successive generations and connected to the sustainability principles. Expenditure programmes have been developed for each of the five communities of interest making allowance for the relative importance of each LoS.

4.6.1 Identification and Prioritisation of Projects

The term ‘project’ is used to refer to any specific work item identified in relation to delivery of the 5Waters Activity. A project may be a management task, process improvement, operational action, or construction of a new asset. The source of potential project may be derived from the strategic plan, from legislative requirements that have arisen since preparation of the last AcMP or because of changed community needs. There are also uncompleted improvements that were outlined in the previous AMP.

The design of the prioritisation process has been based on this fundamental premise:

‘No existing work, new work or system improvement should be undertaken unless there is identification of contribution to the retention or improvement of levels of service for the whole or part of the Community of Interest that is serviced’.

Council has also adopted a number of rules around prioritisation:

- Projects can provide a potential contribution to more than one LoS
- A positive contribution in one area may be negated by loss of benefit in another area
- Renewal of existing assets is not considered within the prioritisation process. A balanced, ongoing renewal strategy is essential to maintain existing levels of service for current and future generations

A “prioritisation tool” was developed and based on the need to identify which performance measures were impacted by the proposed project. It did not attempt to quantify the specific benefits of any project because any project is part of a continuum of projects or work activities. If all projects are completed, the result will be to deliver levels of service to the targeted performance.

It is more important to recognise which levels of service the projects contribute to and in what areas performance will be changed.

4.6.2 Pre-Prioritisation Process

Before any project was prioritised 4 steps refer Appendix A3.7 were followed:

- i. Identify the LoS for the 5Waters Activity
- ii. Determine relative importance of each LoS through community consultation
- iii. Identify performance measures – with scores and descriptors relevant to each LoS and each utility
- iv. Define “exposure levels” to reflect extent of coverage of proposed project

Once a potential project had been identified, a further series of steps was followed:

4.6.3 Prioritisation Process

The prioritisation process was undertaken refer Table 4-1. utilising a custom-developed Access database tool. The database recorded project details and the assumptions used to determine the prioritisation score.

This allowed more than 750 ranked projects to be sorted by community of interest, and scheme. There is also provision for recording budget information to allow prioritised expenditure programmes to be produced.

Originally only one person entered all projects details and scored them. This was done to maintain a common and consistent approach. That person has also been heavily involved in the background AcMP work, understanding Council and its 5Waters sustainability and asset details. It will be a requirement that any other projects entered / modified are done after the individual has reached an appropriate level of 5Waters process and systems understanding.

Risk Based Tool

The prioritisation score effectively represents an evaluation of community benefit in the absence of financial implications. It is a measure of the consequence component when assessing the risk of not achieving levels of service. Furthermore, it could be argued that the probability of failing to deliver levels of service is progressively reduced each time a project under evaluation is completed

Table 4-1: Prioritisation Process

Step	Description	Explanation
1	<i>Identify which Levels of Service are potentially affected by the project</i>	These may be affected positively or negatively by the project
2	<i>Identify the most significant performance measure the project can impact</i>	Only one performance measure should be identified for each LOS identified as relevant
3	<i>Assign a “current status” performance measure score for each LOS in the community</i>	Such as “accepted” – to be keep by, “On-hold” – awaiting confirmation
4	<i>Assign a community exposure score for the project under consideration</i>	What relative extent of the Col would be exposed to this project if it was completed?
5	<i>Identify the aspired performance to which this project will contribute</i>	The maximum (best) performance drew a score of 5
6	<i>Calculate the prioritisation score</i>	This is calculated as the sum of all identified performance improvements weighted by the associated Level of Service and exposure

The derivation of work programmes and budgets for the 5Waters AcMP is a multi-stage process. The prioritisation tool outlined in Table 4-1 provides a useful foundation. However, it would be unwise to totally depend on the scoring process without a further assessment of practical details and extenuating circumstances that may result in a reprioritisation.

Typical examples of factors that may justify a “manual override” of the project priority score include:

- Coordination of construction activities with other works e.g. roading or landscaping
- Availability of external funding sources e.g. Ministry of Health
- Issues over community affordability because of current rating systems
- The need to sequence activities for practical reasons
- Projects where there are impacts to the same LoS but in more than one utility e.g. a new telemetry system
- Projects that provide benefit to the whole district or more than one community of interest – where efficiencies can be gained through widespread implementation
- Committed projects where funding is to be carried over from previous budgets

The score derived from use of the prioritisation tool can be regarded as:

“an indicator of comparative community benefit and a comparative evaluation of the consequence of not achieving levels of service if the project or improvement was not done”.

4.7 Step 6 - Development of Expenditure Programmes

The outcome of this prioritisation process was derivation of expenditure programmes that prioritise improvements according to community benefit for existing and future generations. The programmes were taken back to the Councillors and community via community budget meetings. The key question raised at community meetings was whether residents were prepared to accept the associated targeted rate increase to meet their desired level of service. The programme must be accepted in June 2009 (start of the LTCCP cycle) and, implemented according to affordability of the generations that will benefit from the projects.

Draft expenditure programmes cf. Appendix A3.8 based on community benefit can then be reviewed with respect to funding capacity. Where funding constraints limit the amount of work that can be undertaken, the lower priority projects are deferred to future years and a revised expenditure programme produced.

5.0 Conclusions

Council has 80 individual and separately rated water service areas, covering broad, disparate geographic and hydrological catchments. For the purposes of strategic and asset management, planning for these services is to be managed as one service – the 5Waters Activity. Through provision of seven Sustainability Principles in the 5Waters activity, council intends to deliver sustainable development outcomes. This will be done via delivery of projects which will meet the community if interests immediate and long term well-beings.

Sustainable development is a concept, which is interpreted in many ways dependant on its context. It was therefore imperative that the 5Waters Activity Management Plan provide the cement to make sustainability real and visible.

The 5Waters Activity process itself was aligned with the seven adopted Sustainability Principles in the following ways:

- i. Consideration of Community Outcomes reflecting the four aspects of well-being
- ii. Consultation processes and community involvement in decision-making
- iii. Long-term financial planning for asset maintenance and renewal and use of financial systems to fairly apportion costs within the current community and to future communities that will benefit from the assets

Some of the immediate benefits of self defining and implementing a sustainability based activity plan process are:

- Advances to the IIMM framework, not because of Auditor New Zealand requirements but because of clearer recognition of local community, regional to global issues
- Prioritised projects which aim to protect the 5Water asset – as it sustains life, now and in the future – that can be undertaken at a rate to match community affordability
- Improved national and global branding of Selwyn, its people and businesses in a global village
- Raising the recognition of the community that their water services are part of a built and natural system, which will assist in focusing their attention on conservation and efficiency

Many benefits will not be recognized immediately, but through benchmarked performance measurement, council will confirm how successful it is in achieving the 5Waters well-beings

The process of developing the 5Waters Activity Management Plan required a substantial investment of time, effort and funds. The commitment to undertake such work is dependant on the community and councils willingness and perspective.

It now remains for Council to consider integration of the principles and prioritisation across all of Council Activities – an integrated Council management framework. This will challenge council to review the way it undertakes its core business

APPENDICES

A1 Legislation - Purposes

A1.1 Local Government Act 2002

The Local Government Act 2002 makes reference to sustainability, including:

Section 10 Purpose of local government

The purpose of local government is –

- (a) *To enable democratic local decision-making and action by, and on behalf of, communities; and*
- (b) *To promote the social, economic, environmental and cultural well-being of communities, **in the present and for the future.***

Section 14 (1)(h) Principles relating to local authorities

*In taking a **sustainable** development approach, a local authority should take into account –*

- (i) *the social the social, economic, environmental and cultural well-being of communities; and*
- (ii) *the need to maintain and enhance the quality of the environment; and*
- (iii) *the reasonably foreseeable needs of future generations.*

A1.2 Resource Management Act 1991

Section 5 Purpose

*The purpose of this Act is to promote the **sustainable management** of natural and physical resources.*

*In this Act, “**sustainable management**” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well being and for their health and safety while –*

Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

A2 Global to Local Issues Driving 5Waters Sustainable Asset Management

A2.1 Global Issues

The following global issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	World energy markets, particularly the pricing structure of liquid fossil fuels have shown significant upward movement since 2007. While fluctuations occur, there is an international view that demand and cost will disproportionately increase
ii.	There is a related stress on access to affordable basic foods for an estimated 100 million individuals
iii.	A majority of the population live in countries where primary industry and low cost manufacturing of western goods occurs
iv.	The “parent and grandparent” profile in the western world is growing as healthcare continues to support their longevity
v.	A significant Asiatic population e.g. India and China is consuming and producing world resources as it attempts to climb into “1st World” status – equivalent of OECD status
vi.	Readily accessible base resources are being consumed by these countries, making it increasingly more expensive to source the remaining resources eg to locate, refine, produce and deliver to the marketplace
vii.	Migration of skilled and semi-skilled workforce from lower wage economies to high wage ones continues to deplete smaller and more vulnerable countries – subsequent pressure arise to simply manage and fund existing infrastructure

A2.2 National Issues

The following national issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Stronger environmental constraints, delivered through legislation continue to set high economic costs to develop
ii.	As with global resource, access to national raw materials is becoming increasingly expensive
iii.	The relative distance between region/national market places and global market places increases costs locally; successful branding in the marketplace increases in importance
iv.	Awareness and focus on our global communities ongoing vulnerability to climatic variability and change
v.	InfoResource Management Action Technology fostering and redirecting rapidly evolving social and cultural needs. Changes are rapid and not necessarily predictable
vi.	Business moves to triple and quadruple bottom line reporting indicating increasing community regard for all four well-beings
vii.	Review of current legislative drivers NZ – RESOURCE MANAGEMENT ACT and LOCAL GOVERNMENT ACT, what about other countries regimes
viii.	Development of a framework of national policy statements and regulations around sustainability and resource usage
ix.	Further use of risk management techniques

A2.3 Regional Drivers

The following regional issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Water resources are approaching a fully allocated (or in some cases over-allocated) position
ii.	Coalitions of Councils are occurring as costs to continue governance functions rise
iii.	Development of Guiding and Regulatory frameworks (eg in Canterbury this is the Regional Plan and Policy documents)
iv.	Raw materials (aggregate, water) resources totally allocated, or restricted/limited due to construction demands and environmental protection

A2.4 Local Drivers

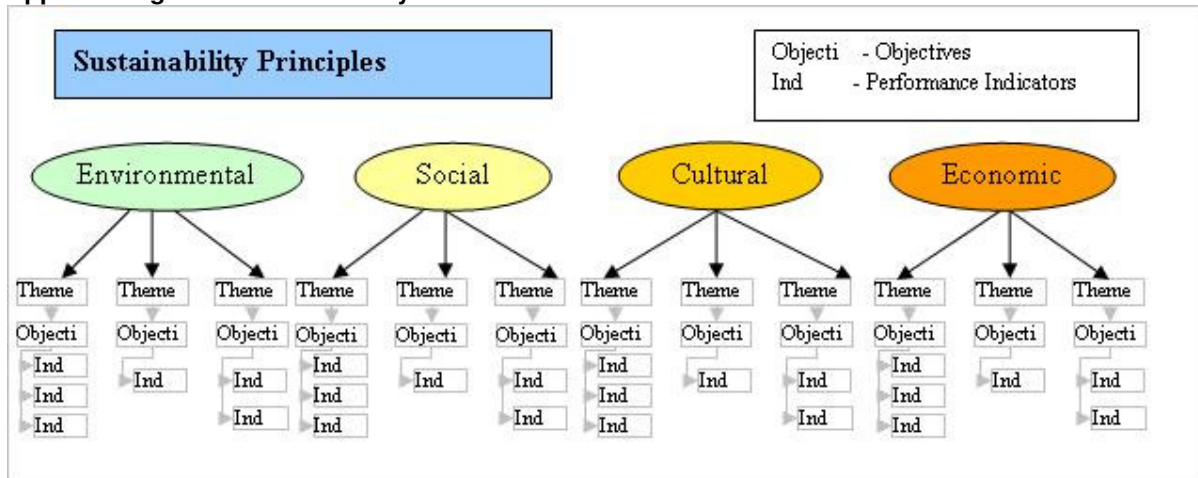
The following local issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Life-cycle asset planning remains relatively fixed on business models supported by supply of fossil fuel based materials and services – few reliable or significant innovations away from this model are occurring. This directly affects and constrains the built environment management
ii.	Financial and asset planning over insufficient duration eg not aligned with the asset life
iii.	Community awareness on broad principle climate change and energy conservation potential is rising e.g. www.powersaving.co.nz Meanwhile the legislative framework for TLAs does not directly encourage innovation, particularly in areas seen as outside core business
iv.	Level of Service creep – with few Strategic and Management Plan linkages to identify what is required

A3 Council Sustainable Asset Management – Selected Tools


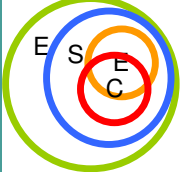
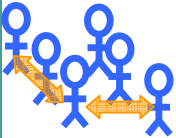
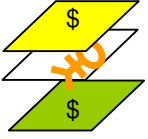



A3.1 Sustainability Framework

Appendix Figure 1: Sustainability Framework

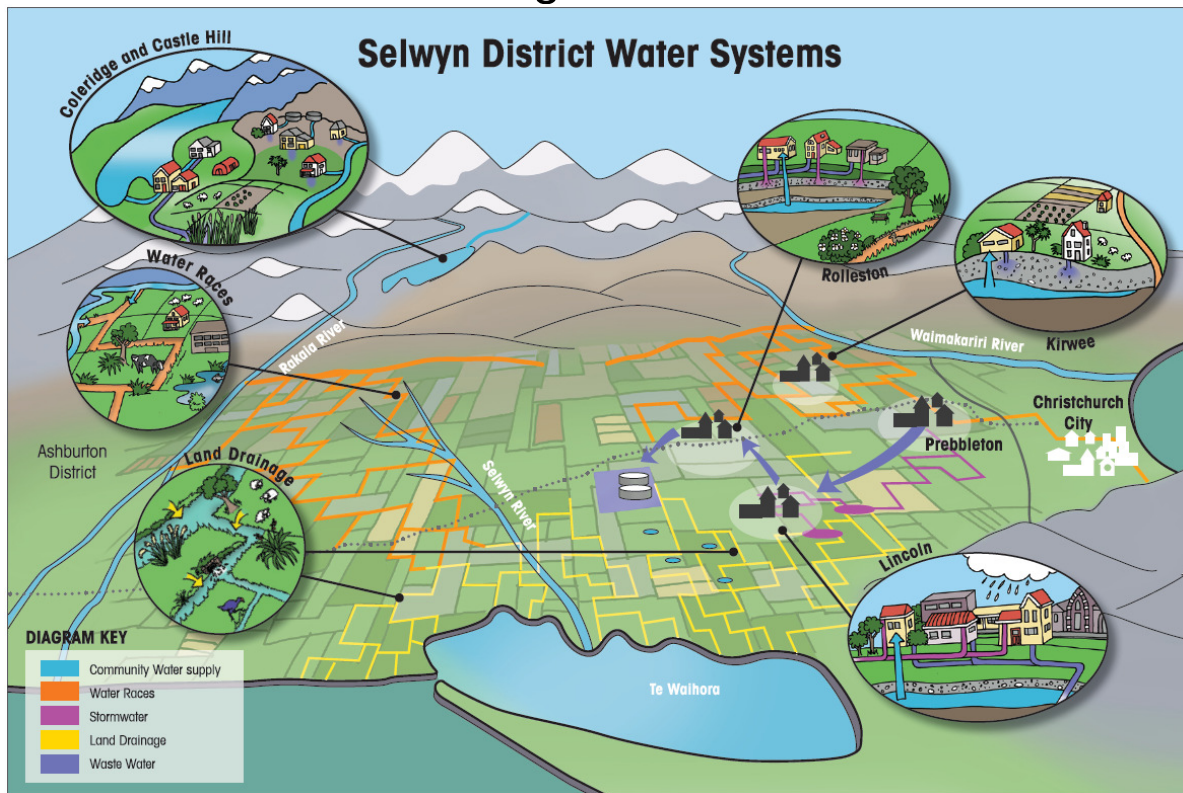


A3.2 Selwyn District Council - Sustainability Principles

Appendix Figure 2: 5Waters Sustainability Principles

	<p>Principle 1: Make decisions based on the four aspects of well-being</p> <p>Integrate environmental, economic, social and cultural considerations within Council decision making. Consider both the short-term and long-term effects of the decision</p>
	<p>Principle 2: Observe the Precautionary Principle to provide contingency and enable adaptability of our Community</p> <p>Err on the side of caution in the face of scientific uncertainty and a risk of serious or irreversible environmental damage</p>
	<p>Principle 3: Seek “intra-generational” and “inter-generational” equity</p> <p>Improve quality of life and create opportunity for all of the current generation, without compromising the quality of life and opportunity of future generations</p>
	<p>Principle 4: Internalise environmental and social costs</p> <p>Develop and adopt a system that recognises the true costs and benefits of protecting and restoring environmental/ecological, human, social and cultural resources affected as a result of the services that Council provides</p>
	<p>Principle 5: Foster Community welfare</p> <p>Support and encourage the region to prosper socially and culturally. Our assets are not just our built assets but our people, their skills and the connections between them</p>
	<p>Principle 6: Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems</p> <p>Conserve, and sustainably use and manage, the district’s biodiversity, recognising the various services that ecosystems provide to humans as well as the environment’s intrinsic value</p>
	<p>Principle 7: Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes</p> <p>Recognise that we are part of a whole globe system whether we can physically see the impacts of our actions or not</p>

Selwyn District Council Five Waters Strategy (Draft) *The Future for:* Community Water Supplies, Wastewater, Waterraces, Land Drainage and Stormwater



Background

Selwyn District Is unique. Water from the sky, rivers and aquifers supports the urban and rural communities, providing for economic wealth, social health and cultural diversity. Use of water resources and the need to protect the environment for future generations creates tensions in some areas.

The Selwyn District Council and the community have an opportunity now to consider all the Five Waters issues in a coordinated manner. To achieve this, the Council is developing a Strategy focusing on the ongoing management of the Districts water.

Prepared
July 2008

*Councils Vision is
"To achieve excellence in the management of resources and the
provision of services for the People of Selwyn District"*



SDC Five Waters Strategic Plan – Future Position of Water Supplies

1. Introduction

Water has been described as the “gold of this century”. The water footprint of societies may be more important than the carbon footprint to ensure a sustainable future. This draft document has been prepared in recognition of the importance of water to Selwyn and how the continued use of the water resources are affected by:

- Globalisation;
- A growing population;
- Increasing pressure on existing services;
- Rising costs;
- Regional Strategies and;
- The need to provide Management Plans

This **Strategy** outlines the strategic vision for Selwyn District Councils “SDC” **five waters**⁹ **community** services – the “Five Waters”. This Strategy also covers **private** water services to an extent identified within legislation¹⁰.

SDC has adopted seven sustainability principles for the purposes of strategic planning over the Five Waters. Sustainability should be regarded as a continuous journey to seek balance between meeting local and global perspectives, along with economic, cultural, environmental and social well-beings. While we personally may view this with different values, we all seek to achieve a sustainable district a place which we and future generations can use and thrive in.

The sustainability principles help by providing a foundation for a long term Strategy for which community feedback is sought. We will also use them to gauge how successful we are on this journey.

This Strategy will be consulted on with these guiding principles, and is intended to:

- Describe the long-term desired position of SDC with respect to the Five Waters in the next 60 years – to the period when others require the environment to live in;
- Describe opportunities to improve integration of water services;
- Identify what we need to do to achieve long term goals;
- Support Councils’ vision

This Strategy does not:

- Contain financial assessments. They will be provided once this draft strategy has been consulted on with outcomes delivered via the Five Waters Activity Management Plans (AcMP)
- Discuss governance issues such as who manages water resources and what role SDC has.

Strategic direction is being developed across the Five Waters in a consistent way. The generic water interrelationship in townships is shown in Figure 1 and where possible the across the districts rural and urban areas.

⁹ Water Supplies (Urban and Rural), Wastewater Schemes, Waterraces, Land Drainage and Stormwater

¹⁰ Local Government Act 2002 – Part 7

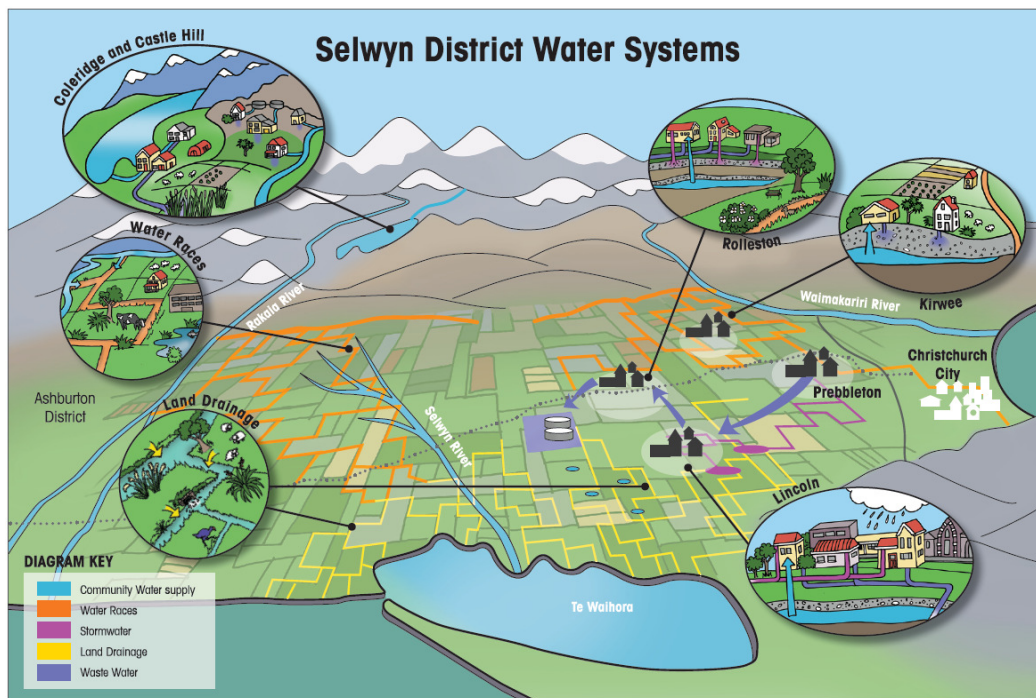


Figure 1 – Five Waters Generic Interrelationships

Take the “Rolleston” example. Water is drawn from deep aquifers for community use, while stormwater is discharged into the gravels above. Wastewater is piped to centralised treatment and disposal areas, with proposed future inflows from other townships. Waterraces flow through and alongside the township.

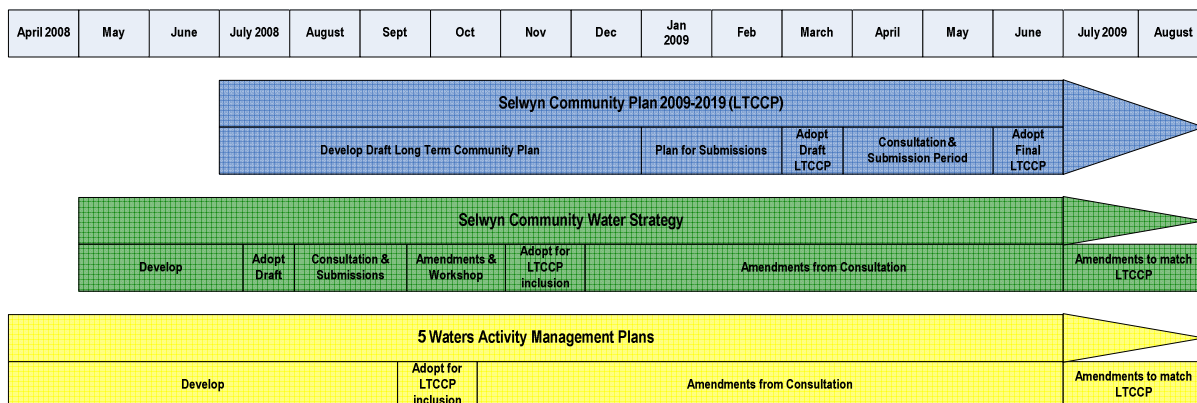
2. Relationship with the AcMP

The AcMP views the five waters as inter-dependant activities for the community of interest. The AcMP will:

- Outline how SDC will undertake the management, delivery and operation for the five water services for the communities in Selwyn over the next 10 years
- Outline the approach to achieve “Levels of Service”
- Contain expenditure programmes, determined by prioritising works and activities that must and could be funded by ratepayers eg meeting mandatory standards, promoting water saving devices.

The AcMP is a living document and is revised at least every three years in time to support the Selwyn Community Plan - the LTCCP.

Currently the AcMP is being reviewed, and will be consulted on from January 2009 – refer Figure Two.



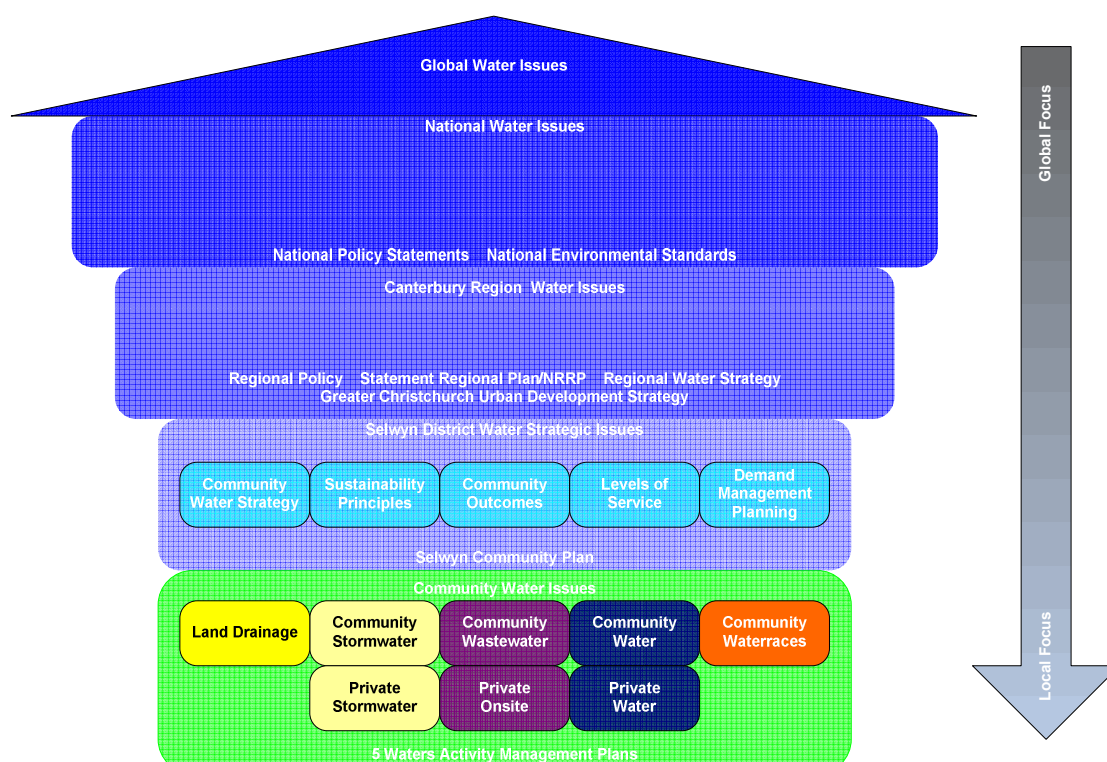
We will in this order:

- i. Adopt a draft Strategy
- ii. Prepare a final AcMP consistent with this draft Strategy
- iii. Prepare and adopt a draft LTCCP based on the above
- iv. Consult on the Strategy
- v. Consult on the LTCCP eg the AcMP
- vi. Revise the LTCCP, Strategy and AcMP in light of feedback and
- vii. Release a final 2009-2019 LTCCP

Before the AcMP review can be completed, the strategic direction should be determined. This Strategy will in effect, create the **vision** and **boundaries** for the AcMP implementation and will be reviewed at least every three (3) years inline with it. Community input strengthens the process by clarifying and prioritising issues, hence consultation is a key part of its validation.

3. Inputs into the Strategy

Strategic planning for the use of Fives Water resources is undertaken at a number of levels. This diagram demonstrates the potential sources of influence on the Strategy.



While the Strategy targets **district** issues – it must do so in a way that accounts for the relevant issues at all other levels.

The Strategy seeks to direct and support the district in a consistent, cohesive and cooperative way. However it is recognised that in the real world there are tensions between the desires of global, national regional and inter-district water allocation, use and management. For example, our urban communities' well-being relies on a strong rural economy, but could suffer from long term environmental impacts of that rural land use.

The strategy is also challenged at a district level by the need to take account of diverse and sometimes, opposing social, economic, cultural and environmental values for different communities in the District Other challenges arise from the impacts of any one of the 5 waters on the others.

4. Proposed Five Waters Strategy Initiatives

Council recognises that rapid improvements (0-3 years) can be made in some areas, while longer term gains (3+ years) can only be brought about after investigation and review – the “possible future”. Initiatives for the possible future are identified for the urban areas serviced by community schemes and rural areas that are not serviced by community schemes – a foldout impact summary sheet is attached.

The Initiatives are identified and graded to indicate priority. It is possible that an initiative may sit at several levels, e.g. global or national, and a decision has been made on the “best fit”. Where any of the Five Waters may be affected, they are noted by abbreviation.

Community Schemes

<i>W</i>	Water
<i>WW</i>	Wastewater
<i>WR</i>	Waterraces
<i>ID</i>	Land Drainage
<i>SW</i>	Stormwater
<i>All</i>	All Urban

Private Schemes

<i>WP</i>	Private Water
<i>WWP</i>	Onsite Wastewater
<i>IDP</i>	Onsite Drainage
<i>SWP</i>	Onsite Stormwater
<i>AllP</i>	All Private Services

All initiatives are summarised below as “**Our Strategy Initiative(s)**” and presented in total on the “foldout” impacts summary sheet. The summary shows the proposed priority and how they will be addressed.

5. Global Initiatives

Global events may move faster than national and regional policy and legislation can currently adapt to. Legislative mechanisms in their current form are regarded as inflexible.



5.1 Sustainability

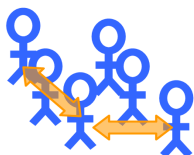
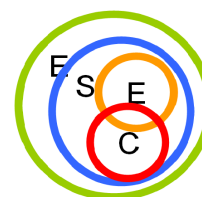
The decision by the SDC on 27.02.2008 to formally adopt **seven sustainability principles** was made after consideration of a number of factors including international concerns around climate fluctuations



Principle 1:

Make decisions based on the four aspects of well-being

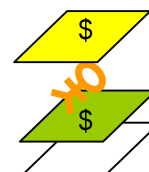
Principle 2:
Observe the Precautionary Principle to provide contingency and enable adaptability of our community



Principle 3:

Seek "intra-generational" and "inter-generational" equity

Principle 4:
Internalise environmental and social costs



Principle 5:

Foster community welfare

Principle 6:
Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems



Principle 7:

Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes

The principles encompass the NZ Government's current commitment to the Kyoto Protocol, and Councils continuing advances in meeting Local Government legislation.

Our Sustainability Strategy Initiatives(s):

All	SDC will have regard to these principles when making any significant decision that affects changes to the installation, renewal, management and operation of the water infrastructure
All	SDC will monitor current and forecast fossil fuels prices and associate effects on its asset management and operation annually. It will identify effective and efficient opportunities to reduce usage and reliance on this energy source, and seek reliable and sustainable alternatives as they arise.

5.2 Climate Change

There is international concern regarding the impact of climate fluctuations effects. SDC see the effects as:

- Local changes to climate that impact the availability of the water used for supply;
- Changes to International demand for food products that are produced in Selwyn District – that use water for production and change the availability of the resource for community use

Our Climate Change Strategy Initiatives(s):

All	SDC will proactively undertake studies to better quantify the potential impacts of climate change on demand and availability as it affects its district.
All ALPP	SDC will minimise use of and conserve energy, as far as practicable while still meeting agreed Levels of Service. This will extend to all private services in time where a need is recognised
All	SDC will undertake to identify and reduce carbon emissions where a benefit is shown, through more efficient use of materials and services.
W WW WR	SDC will establish and where appropriate implement demand strategies and water loss reduction programmes

5.3 Drinking Water Standards

Drinking water quality standards in New Zealand have been adopted in line with WHO guidelines. The Standards acknowledge the mobility of waterborne disease and the potential impact of organisms that are “imported” into New Zealand.

Our Drinking Water Strategy Initiatives(s):

W	SDC will regard with importance the protection of groundwater and surface water quality that is delivered to its urban communities
WP	SDC will with support from Regional and Ministry of Health officials maintain and advise private users regarding drinking water health issues

6. National Initiatives

National Initiatives are generally developed and promoted by central government. They can result from global issues which have been applied to the New Zealand environment, or ones which have been developed to meet the countries unique demands.



6.1 The Health (Drinking Water) Amendment Act 2007

This Act assigns obligations to SDC as a community water supplier to:

- take all practicable steps to comply with the Drinking Water Standards
 - introduce and implement Public Health Risk Management Plans for the water supply
- Specific obligations and timelines vary according to the population served by the supply

Our Health (Drinking Water) Act 2007 Strategy Initiatives(s):

All	SDC will work to achieve compliance through the implementation of PHRMPs and the planning of upgrades to water abstraction and treatment facilities.
------------	---

6.2 Sustainable Water Programme of Action - SWPoA

The Government has initiated a strategy to improve the management of fresh water, protect our freshwater resources into the future, and acknowledge the fundamental importance of water to all New Zealanders. The strategy focuses on three national outcomes for fresh water:

- Improve the quality and efficient use of fresh water by building and enhancing partnerships and providers eg SDC and rural and urban communities;
- Improve the management of the undesirable effects of land use on water quality through increased national direction and partnerships with communities and resource users
- Provide for growing demands on water resources and encourage efficient water management through increased national direction, working with local government to identify options for supporting and enhancing local decision making, and developing best practice. “

Our SWPoA Strategy Initiatives(s):

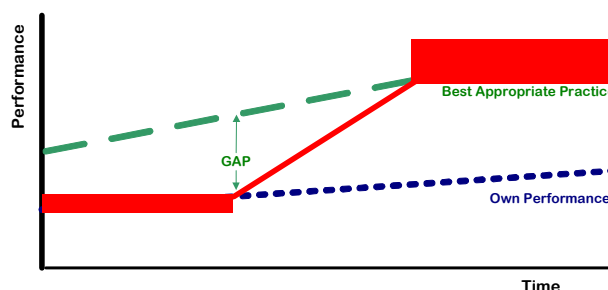
All	SDC will engage with those parties undertaking the SWPoA to understand, apply and sustainably protect the interests of the urban community. This will include submission and representation by Council from time to time.
------------	--

6.3 Benchmarking Performance

Benchmarking refers to the methodology and tools required to identify, measure and respond to key performance indicators of any particular water asset. Benchmarking can be undertaken to allow comparison with neighbours or other utility providers within New Zealand or overseas.

For example, how efficiently SDC is providing or using water could be compared with areas in Australia with similar climate. Adaptable benchmarking is a key aid in identifying opportunities for improvement, learning “best practices”, maintaining stimulus for continuous improvement, and measure success in closing the gap.

Role of Benchmarking

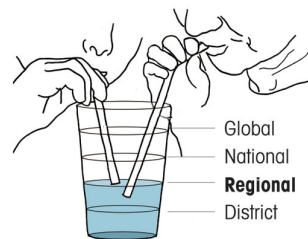


Our Benchmarking Strategy Initiatives(s):

All	SDC will: proactively collect, analyse performance data to establish better comparable performance
W	SDC will collect water quality and water quantity data and present the data in a way that allows assessment of changes to upstream activities on its water supplies

7. Regional Initiatives

Regional initiatives are those which may have been developed as a result of global or national processes. Generally they focus on particular issues which affect the environmental quality in the particular geographic area.



7.1 National Environmental Standard for sources of human drinking water

The National Environmental Standard “NES” requires Regional Councils to ensure that effects on drinking water sources are considered in decisions on resource consents and regional plans. Specifically, Councils will be required to:

- decline discharge or water permits that are likely to result in community drinking water becoming unsafe for human consumption following existing treatment
- be satisfied that permitted activities in regional plans will not result in community drinking water supplies being unsafe for human consumption following existing treatment
- place conditions on relevant resource consents requiring notification of drinking water suppliers if significant unintended events occur (e.g. spills) that may adversely affect sources of human drinking water”

Our NES Strategy Initiatives(s):

W	SDC will seek to ensure that ECan protects the interests of SDC when consenting water abstractions or discharges that can impact on its supplies.
----------	--

7.2 Natural Resources Regional Plan – pNRRP

The proposed NRRP signals many changes to the way in which Council and the community manage their activities and the environmental effects. Some rules such as requiring sewage network utilities operators licences and stormwater discharge consents already have effect, others require the plan to be operative.

Our pNRRP Strategy Initiatives(s):

All Acep	SDC will engage with the Regional Council at a political and technical level to continue promotion of the issues brought by this document as they affect (primarily) the Five Waters and secondly private services.
All	SDC will seek to deliver 100% compliance with all existing consents

7.3 Regional Water Management Strategy

Environment Canterbury has embarked on a public engagement programme to develop a strategy for water management in the region over the next 18 to 20 months. This strategy will cover all water resources in the region.

Our Regional Water Management Strategy Initiatives(s):

All Acep	SDC will proactively give input into the preparation of this strategy to protect existing and future water abstraction requirements for its community schemes and private systems.
All Acep	SDC will demonstrate that future actions to develop and manage water supply consents and systems are consistent with its adopted sustainability principles

7.4 Irrigation schemes

Current irrigation scheme proposals are indicative of the continued demand by farmers to extend irrigation within Selwyn district. The proposed schemes are likely to come from river sources – noting that groundwater is fully allocated. The schemes will involve river abstraction and storage.

Our Irrigation Scheme Strategy Initiatives(s):

All Acep	SDC will be vigilant in the early planning phases of irrigation schemes and seek to ensure there is adequate protection of its water supplies from adverse effects including declining water quality, significant changes to groundwater levels and adequate reservation of water allocation to provide for future community and private domestic use growth
---------------------------	---

7.5 Urban Development Strategy

The Greater Christchurch Urban Development strategy provides the basis for a collaborative approach to managing the pressures arising from growth. SDC is a partner to this strategy and has responsibilities to implement the Strategy.

The responsibilities include provision of water, wastewater and stormwater infrastructure to the communities within Selwyn District and covered by the study area

Our UDS Strategy Initiatives(s):

All	SDC will take account of all its UDS Five Waters obligations including those it has direct responsibility to lead, as it continues planning and implementing the sustainable development and operation of those communities within the Metropolitan Urban Limits.
All AEEP	SDC will control growth patterns via regional and district plans to protect its Five Waters. It will review costs and cost recovery to ensure users pay directly.

7.6 Supply security and emergency preparedness

Water supply is an essential service. The consequences of losing a water supply to a community can have catastrophic consequences. There are legislative requirements such as the Civil Defence Emergency Management (CDEM) Act 2002 that place obligations on SDC to protect the water quality and the continuity of supply to its customers.

The CDEM was provided to:

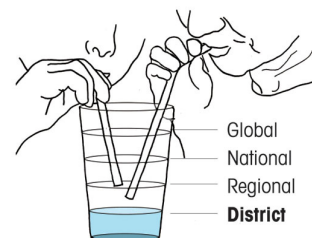
- improve and promote the sustainable management of hazards to contribute to well-being, the safety of the public and the protection of property
- encourage and enable communities to achieve acceptable levels of risk by applying risk management
- provide for planning and preparation for emergencies and response and recovery in the event of an emergency
- require local authorities to coordinate CDEM through regional groups
- encourage the coordination of emergency management across emergency sectors”

7.7 Our Emergency Preparedness Initiatives(s):

All	SDC will regularly participate in Lifelines processes
All	SDC will assess the consequences to the community if key components of water supply infrastructure were taken out of service
All	SDC will implement design standards and operational practices to minimise the risk of failing to deliver a safe continuous supply of water to communities
All	SDC will undertake Risk Management processes that comply with statutory requirements and in accordance with Council's Asset Management Policy
All AEEP	SDC will develop and implement an emergency response plan that outlines interdependencies with other service providers and responsibilities for restoration of supplies following hazard events
W WW WR	SDC will plan and provide new and upgraded water supply infrastructure to reduce the risks of interrupted or contaminated supply during hazard events

8. District Initiatives

District initiatives are those which generally provide specific local solutions to locally recognised issues. These reflect the values of the people and the environment they live in. The district has a diversity of environments but generally there are similar issues in across it. This is referred to as “communities of common interest”.



8.1 Community Outcomes

The Selwyn Community Plan 2006-2016 “LTCCP” contains the key Community Outcomes for each of the four well-beings. Many of these outcomes support or rely on management of the five waters.

- Air, land, water and general environment to be kept in a healthy condition
- A living environment where the rural theme of Selwyn is maintained
- Access to community and public health services
- Coordination of community/social services
- A safe living environment
- Educated Community
- Business-friendly environment
- Effective and accessible transport system
- An ability to experience cultural activities

In the revised AcMP, these outcomes have been linked directly with the four well-beings and the levels of service for each of the five waters. Integrated reporting against the contribution towards the achievement of the community outcomes and the four well-beings is included in the annual report.

The levels of service or service targets for each of the five waters are:

Water Supply

- Water is safe to drink
- The water look smells and tastes good
- There is enough water for my needs
- There is adequate Fire Fighting Supply in approved areas
- Problems are resolved promptly
- Council manages water supply service wisely

Wastewater (includes Stormwater and Land Drainage)

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

Our Community Outcomes Initiatives(s):

All	SDC will ensure Council Five Waters policies and practices comply with statutory and best practice requirements'
All	SDC will adopt a policy on the appropriate level of Asset Management and develop practices that deliver this policy

8.2 Kaitiakitanga, Tikanga

For Maori, linking the past, present and the future is an important concept of life. There is much value in learning from the past in planning for the future. Kaitiakitanga – safe guarding our future (guardianship) and Tikanga (protocols) are two powerful concepts embodied in Maori cultural.

Our Maori Initiatives(s):

All	SDC will seek to understand and exercise the principles of Kaitiakitanga so those who follow can enjoy what we enjoy today.
All	SDC will seek to establish the right Tikanga that will enable us to deliver water services in an integrated and sustainable way

8.3 Integration of community water supply schemes

There are currently 30 physically separate community water supply schemes within SDC. Many of these schemes service people who are within the same **Community of Interest**. Those schemes “level of service” expectations are likely to be the same.

Changes to water treatment and wastewater disposal standards, operational costs, as well as service requirements arising from community growth and the need for increased security of supply can mean that water sources, treatment plants and networks need to be reconfigured. Sometimes the complete or partial integration of schemes provides an optimal long term solution.

Our Integration Initiatives(s):

All	SDC will regularly review the optimal provision of its community water services and provide for these changes in the AcMP and Strategy
------------	---

8.4 Allocation limits

Groundwater allocation reports prepared in 2004 for ECan provide technical and policy information to guide decisions on applications for resource consents for groundwater in highly allocated groundwater zones – including Selwyn District. However there is currently no allocation, particularly in “red zones” for Community Drinking Water Supplies.

Our Allocation Initiatives(s):

All	SDC will seek to secure future community water allocation
------------	--

8.5 Water demand and demand management – including growth

Per capita water demand in Selwyn is high compared to other communities in New Zealand. Undoubtedly climate and free draining soils are contributing factors to high water use. Fully allocated water resources, community growth and increased operating costs will provide increased incentive to understand the reasons for this high demand and then to implement techniques to reduce it..

Our Water Demand Management Initiatives(s):

W WW WR	SDC will evaluate and implement appropriate demand management initiatives that contribute to future protection of water resources that are abstracted for supply to communities
W WW WR	Recycling and Reuse: SDC will undertake studies to understand the water use patterns in communities
All	Conservation: SDC will implement demand strategies and water loss reduction programmes with reference to the outcomes of these studies

8.6 Ageing Infrastructure

The water supply infrastructure is comprised of above ground and below ground assets. The extent, capacity, age and condition of these assets is summarised within the 5 Waters AcMP.

Replacement budgets are determined from current knowledge of assets and an understanding of their performance, criticality and their ability to deliver levels of service.

Our Ageing Infrastructure Initiatives(s):

All	SDC will undertake appropriate condition assessments of all services on a regular basis in accordance with Council's Asset Management Policy, and fund via depreciation or other methods for the services replacement
------------	--

8.7 Affordability and Pricing

Current water supply charges are based on cost recovery within those water supply schemes. Charging systems vary between schemes – some pay according to use and others pay fixed annual charges.

Our Affordability and Pricing Initiatives(s):

All	SDC will review charging mechanisms with a view to ensuring that the charges fund the annual operating costs and contribute to the depreciation or renewal costs of the service
All	SDC will regularly review funding mechanisms (including user-pays, development contributions, metering, trade waste bylaw and charging)

8.8 Tourism

Increased tourism in an area can have two significant impacts on water supply infrastructure:

- Increased demand on services without any supporting source of funding to provide the expanded services
- Elevated risk of transmitted waterborne disease into and out of the District – especially where tourists are in contact with untreated or partially treated water.

Our Tourism Initiatives(s):

All	SDC will seek additional funding needs for any water supply upgrade or new installation that has demands placed on it by tourism
All	SDC will provide adequately treated water to facilities that are utilised by tourists and connected to the water supply network

8.9 Unserviced areas

The Local Government Act 2002 requires SDC to complete a Water and Sanitary Services Assessment that is reviewed from time to time. The first assessment was completed in 2005. Improvements have resulted from that work as below:.

Our Unserviced Initiatives(s):

All	SDC will continue to investigate and deliver options for improving the knowledge and management of private supplies
All	SDC will participate in the Ministry of Health Technical Advisory Programme to assist private suppliers to understand and manage the risks to their systems
All	SDC will instigate a drinking water monitoring programme for those settlements not currently serviced by a council scheme

8.10 Standards - Stormwater and Land Drainage

Stormwater is managed locally in accordance with agreed LoS for flood, stream and contaminant management, potential for significant local use – refer to the AcMP.

Regionally and locally, low impact urban design including stormwater attenuation is being implemented, as it is becoming increasingly unacceptable to discharge stormwater directly to streams and rainwater drainage services. Integrated stormwater planning should be supported where required, with all treatment and disposal separated from Council wastewater and private wastewater services. This can be assisted by design standards.

Our Stormwater and Land Drainage Initiatives(s):

All	SDC will implement integrated stormwater planning where appropriate and in accordance with its sustainability principles.
All	SDC will apply low impact urban design principles in accordance with the District and Regional plan and local community consultation.

9. Monitoring and Reviewing the Strategy

This strategy will be developed and kept current with the objectives of the community in mind. It covers a range of issues across the five waters with updates will occurring at least every three years to match the Selwyn Community Plan and Activity Management Plan programme.

As community expectations and the context of the strategy change, the strategy will be reviewed in part or entirely. While setting framework for the future, the strategy needs to be flexible and adaptable to circumstances as they occur. Where substantial changes are required, broad consultation will be undertaken; while focused consultation is regarded as appropriate for specific changes.

Achievement towards the success of the Strategy will be monitored annually and reported in a summary format through the Annual Report.

REPORT

TO: Chief Executive
FOR: Council Meeting 23 July 2008
FROM: Asset Manager Utilities
DATE: 15 July 2008
SUBJECT: Five Waters Strategy – Draft for Public Consultation

1. RECOMMENDATION

That the Draft Five Waters Strategy be circulated for public consultation and invitation of feedback.

2. PURPOSE

- 2.1 The purpose of this report is to:
 - Explain the reasons for the proposed Five Waters Strategy and;
 - Gain Council approval to circulate the document for public consultation.
- 2.2 The Five Waters Strategy (the Strategy) defines a pathway to address important issues that will influence the sustainable management of the five waters services – predominantly community water, wastewater, land drainage, waterraces and stormwater services.
- 2.3 Outcomes from the Strategy will be used to define work activities in the Activity Management Plan (AcMP), which also incorporates the Water and Sanitary Services Assessment as previously agreed with Council.
- 2.4 Effectively the Strategy describes what needs to be done – not how to do it.

3. SIGNIFICANCE ASSESSMENT/COMPLIANCE STATEMENT

- 3.1 The final adoption of the Strategy will be an important decision for Council. The draft Strategy attached to this report is intended for further development through the consultation process and further workshops with Council.
- 3.2 The issues and decision in relation to the recommendation has been assessed against the Significance Policy and is regarded as having low significance at this point when considering the following:
 - Feedback from the Communities of Interest (CoI) and stakeholders will be obtained over an 8 week period and evaluated as part of the consultation process recommended in this report.
 - The final Strategy may initiate actions that have financial implications for Council but not until the specific work activities are identified within the AcMP for the 2009-19 Long Term Council Community Plan (LTCCP)
 - Future decisions on financial implications will be addressed through the LTCCP process and associated consultation.
 - This report is expected to generate a variety of different views within the community that will need to be addressed before finalising the Strategy.

4. HISTORY/BACKGROUND

- 4.1 The long term provision of community water supply, wastewater, stormwater, land drainage and water races the “Five Waters” is vitally important to the Selwyn District and a responsibility of Selwyn District Council. These are all identified as significant activities within the LTCCP.
- 4.2 Council has already acknowledged the importance of sustainability through the adoption of seven sustainability principles.
- 4.3 The value of water globally has driven a number of international, national, and regional initiatives that will have long term impacts on the management of water resources and water services within Selwyn District. These initiatives are identified in the proposed Strategy, and include:
- Increasing reliance and dependence of the national economy on natural capital – land, rivers, lakes;
 - Regional Council willingness to complete a Regional Water Strategy over the next 18 months (June 2008-December 2009);
 - The special role afforded to Maori through the Resource Management Act – water is a taonga (treasure);
 - Locally ever increasing competing demands placed on the water resource – communities must have their future needs protected in the essentially first-come-first served environment;
 - Actual and continuing predicted rapid future urban growth – challenging implementation and operation of sustainable urban and rural water systems.

5. PROPOSAL

The primary objective of this report is to present a draft Strategy and to seek Council approval for feedback through public consultation.

- 5.1 To plan for the long term actions, the Strategy assesses:
- initiatives from outside Selwyn District and
 - impacts on water services that are generated from activities within the District
- 5.2 The Strategy takes a high level perspective of issues, and is supported by the Local Government Act (s10) “four well beings” and underlying sustainability principles.
- 5.3 The proposed method of consultation and the development of the Strategy from this point is as follows:

Stage	Date
1	Draft Strategy is approved for consultation 23 July 2008
2	Community and stakeholder comment sought and considered 30 July – 19 September 2008
3	Amended Strategy and comments from consultation discussed with Council 8 October 2008
4	Final Strategy approved by Council for inclusion in AcMP (and LTCCP 2009-2019) 22 October 2008
5	LTCCP 2009-2019 Community Consultation (includes AcMP) March 2009
6	LTCCP 2009-2019 adopted June 2009
7	Final Strategy and AcMP updated to match adopted LTCCP 2009-2019 July-August 2009

- 5.4 Financial limitations, community affordability, the outcome of community consultation and progress with activities that are already committed will ultimately determine work programmes and expenditure.

6. OPTIONS

6.1 Three options are considered and a brief analysis is presented in Table 1:

Table 1 – Options Analysis

Option	Benefits	Disbenefits
4. Strategy not undertaken	<ul style="list-style-type: none"> No short term financial costs 	<ul style="list-style-type: none"> It is difficult for Council to demonstrate a sustainable development approach is being taken if issues are not being considered with a long term view (LGA sec 10) The approach to water services management is more reactive than proactive Regional Strategy and national directives drive District response Lack of coordinated strategic planning across the Five Waters AcMPs do not consider all strategic issues
5. Strategy Adopted	<ul style="list-style-type: none"> Present and future issues for Selwyn are highlighted and considered Strengthens District input into Regional Water Strategy and National Directives Provides sound strategic planning for township structure plans and informs District Development Strategy. 	<ul style="list-style-type: none"> Staff time and resources required Possible reprioritisation of works programmes Amendments to AcMP's subsequent to adoption of 2009-19 LTCCP
6. Strategy Delayed	<ul style="list-style-type: none"> Council adopts a 'wait and see' approach ("low risk approach") 	<ul style="list-style-type: none"> Council does not adequately seek and relay community water issues AcMPs do not consider all strategic issues Structure Plans do not consistently recognise base issues Regional Strategy drives District response

6.2 Option 2 "Strategy Adopted for Consultation is the recommended option as after receiving community and stakeholder feedback will provide the foundation for long term planning of the 5 Water Service

7. VIEWS OF THOSE AFFECTED/CONSULTATION

As a Strategy that assists Council establish a direction for the future, consultation with the community and stakeholders is essential. The consultation programme included in clause 5.3 identifies two opportunities for the views of those affected to be offered and considered:

- As part of specific consultation on this Strategy – the recommendation of this report
- As part of broader consultation with the LTCCP 2009-2019

8. RELEVANT POLICY/PLANS

8.1 Integrated Long-term Planning

Council does not have any legislative requirement to prepare this Strategy. However, given the significance of this issue and recognising clarity is needed to direct the principles of sustainable development, an integrated strategy for the five waters is prudent.

There is a range of planning documents with differing planning horizons. This strategy fulfils a gap which is driven by the need for a long term view of the five waters.

Planning Document	Planning Window
LTCCP – Committed Budgets	3 years
Community Outcomes	6 years
LTCCP	10 years
AcMP	10-20 years
Proposed Regional Water Strategy	20 years +
Greater Christchurch UDS	35 Years
Typical Resource Consents	35 Years
This Strategy	60 years

8.2 The need for an integrated planning approach that set direction for the future was identified in the 2005 Activity Management Plans and the need has become more urgent with recent developments in the District. Environment Canterbury intend to develop a Water Strategy over the next 18 months – Appendix A.

8.3 There are number of Greater Christchurch Urban development Strategy (UDS) Action Points that include future planning and management of water services issues. It is therefore important that Council are well positioned to take a lead in this process for the benefit of current and future generations of Selwyn District.

UDS Action	Lead Agency	UDS ref
Planning for Natural Hazards and Climate Change	UDS Implementation Committee	6.15.4
Reflect infrastructure costs to support growth within LTCCPs (identified as one of the top 20 actions in 2007)	UDS Implementation Committee	6.20.4
Align stormwater discharges and treatment with the operative NRRP	Selwyn District, and other Councils	6.21.4
Prepare cross-boundary Waste Water Strategy	Christchurch City	6.22.4.1
Develop cross-boundary Water Supply Strategy	Christchurch City	6.23.4.1
Develop protocol for cross-boundary water supply infrastructure management	Selwyn District	6.23.4.2
Develop Water Supply Technical Group for Partner Councils	Christchurch City	6.23.4.3

8.4 Other asset strategies that are relevant are listed below

Strategy	Status
Parks and Reserves	- to be prepared
Solid Waste	- to be prepared and amended following the Waste Minimisation Bill
Transportation	- CRETS released, walk/cycle developed

8.5 These strategies will inform a District Development Strategy to be prepared at a later date.

9. LEGAL IMPLICATIONS

9.1 There are no legal implications in relation to this report.

10. FUNDING IMPLICATIONS

10.1 Funding to support the community consultation exercise is provided under the AcMP process.

11. INPUT FROM OTHER DEPARTMENTS

- 11.1 This report and the Five Waters Strategy has been amended following input from the Corporate and Environmental Services groups.

H Blake-Manson
ASSET MANAGER UTILITIES

ENDORSED FOR AGENDA
R Anderson
ASSET DELIVERY MANAGER



<http://www.scoop.co.nz/stories/AK0805/S00269.htm>

Water Management Strategy for Canterbury

Tuesday, 27 May 2008, 5:11 pm

Press Release: Canterbury Mayoral Forum

Media Release

On Behalf of the Canterbury Mayoral Forum

27 May 2008

Water Management Strategy for Canterbury

A comprehensive public engagement programme with the Canterbury public to prepare a strategy for water management in the region has been announced.

The strategy will identify future directions for the region's water management including its agriculture, recreation and environmental aspects.

"Water management is almost certainly the biggest long-term issue facing the Canterbury region," says Bede O'Malley, chairman of the Steering Group charged by the Mayoral Forum with managing the development of the strategy.

"It is very much a renewable but limited resource and increasingly there are competing demands for it. We need a strategy that enables Environment Canterbury to allocate this resource in the best and widest interests of the region.

"There are many considerations. The benefits for the regional economy from agriculture and tourism are vital. The opportunity to generate energy from renewable water resources is also vitally important. A wide variety of recreational and environmental interests are connected in some way with water and, of course, quality of drinking water is paramount.

"Building a strategy that has wide buy-in will not be an easy task, but the alternative is win/lose conflicts fought out in communities and courts often with a result that pleases no one," says O'Malley.

Expected to take up to 18 months to complete, the strategy is intended to be a guide to water management in the region for at least the next 20 years. It will cover all major areas of usage across the whole region.

It will involve two stages of consultation, first about the uses and benefits of water involving both stakeholders and the public. Second, the focus will shift to specific projects and activities when, once again, there will be stakeholder and public consultation. There will also be a strong emphasis on local engagement right around the region.

Environment Canterbury Chairman, Sir Kerry Burke said that the strategy, once completed, will be considered by his Council for proposed introduction into the Canterbury Regional Policy Statement, the Natural Resources Regional Plan (NRRP) and ECan's Long Term Council Community Plan (LTCCP). "Indeed, it will need these statutory measures to confirm it, to give it the force of law and for any public funding to be committed to it," says Sir Kerry.

“Being a non-statutory process it will have the flexibility necessary to encourage positive interaction, even negotiation between the stakeholders. It must still face and pass the tests of the statutory machinery process,” says Burke. “This will be essential in order to have the strategy confirmed and have it locked in with the community’s support and backed by the law.”

Commenting on the proposal, chairman of the Mayoral Forum and Christchurch Mayor Bob Parker says that the regional mayors are under no illusions that this is an ambitious project.

“It’s ambitious, but absolutely necessary. It will require the goodwill of all involved to succeed. None of us wants to be in the situation of 20 years down the track with people saying if only our public officials had had greater foresight we would be in a much better position with water allocation and use.

“Now is the time to have foresight, and this strategy-building process is the way to do it, but we should have no illusions about the complexity of the task we are about to embark on.”

“It should also be noted that the world will not stop while this strategy is being developed. There are a number of water-related matters in public hearings or before the courts in the region and these should continue to their logical conclusion. Decisions made in these processes will become inputs to the strategy,” says Parker.

Some modern technology will be employed to deal with the complexity of the task. A method called Open Strategy is to be used. Developed in Canterbury, but largely employed in the UK over the last few years, Open Strategy is an online method of recording and sorting input into the strategy-forming process. It also enables inclusion of information from previous and current scientific studies of water use to ensure that the valuable work already done to date is not lost.

A range of communication techniques will also be used to ensure access of the stakeholders and the public to the evolving strategy and experience has been called upon from the recent and successful Greater Christchurch Urban Development Strategy programme involving Environment Canterbury and Councils.

“This will be a very open process. No one who has a contribution to make should be left out. We have also vetted the approach with a large number of people in the region and the general consensus is that it is well conceived, says O’Malley.

Stakeholder discussions begin in late June with the first round of public consultation beginning in August. A web site designed specially for the project will be launched in mid June. Also, at that time, an expanded membership of the Steering Group involving additional community representatives will be announced.

ENDS

A3.5 Levels of Service – Detailed Explanations

	Level of Service
1	<p>The community is provided with water services to a standard that protects their health and property</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Drinking water supplied is always safe to drink and sufficient water is available for essential needs, • Wastewater is removed effectively and disposed of safely without overflows causing flooding or contamination, • Stormwater is managed to minimise flooding, • Water races supply sufficient water for stock needs and do not cause flooding, and • Land drainage systems operate effectively. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Unsafe drinking water, or poor sanitation may cause serious illness or, in the worst case, death. Buildings without a safe water supply and adequate sanitary wastewater and stormwater drainage cannot be occupied. • Potential health consequences not only impact on those connected to Council water services, but also those using connected businesses, schools, and community facilities. • The lack of safe water supply and sanitation services may preclude the provision of schools, healthcare and other services for the wider community, and economically impact on business in the community. • Blockages and failures in drainage systems may cause flooding which can damage property and restrict use of roads and other amenities. Floodwaters may also carry contaminants hazardous to health. • Inadequate supply of stockwater places livestock at risk. • Ineffective land drainage may damage crops or result in lost productivity of land.
2	<p>Customers are provided and fairly charged for water services that meet their reasonable needs</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide adequate quantity, quality and reliability of services for reasonable needs. Such needs may change over time in response to lifestyle changes or resource availability constraints. • Provide for fire-fighting needs in designated zones. • Apply fair charges for the operation and maintenance of existing services and the provision of new or upgraded facilities. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Excessive or irresponsible use of the services by some sectors of the community may compromise service delivery to others, or unfairly burden others with additional costs to provide increased service capacity. • Excessive or unfair charges have adverse social and economic effects. • Insufficient charges may prevent the continued provision of the required level of service or place an unfair cost burden on future generations. • Unfair charging systems would see some sectors of the community paying a disproportionate amount for services relative to others.
3	<p>Nuisance effects of water services are minimised</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Drinking water quality, water pressure and reliability of supply is acceptable to consumers, • Disruption to services are minimised, and • Infrastructure does not create problems or cause inconvenience. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • While safe to drink, water may be discoloured, have an undesirable taste or odour, stain laundry or sanitary fittings, result in limescale buildup, or reduce lathering of soap. Low water pressure may affect showering, garden watering, and car washing. • Service disruptions are inconvenient for household customers, but may adversely impact business/farming operations. • Minor surface flooding may not cause damage but can be an inconvenience, preventing normal use of land and amenities. • Poorly design, operated or located infrastructure may cause noise, odour, visual or other impacts, for example a noisy pump station adjacent to residential properties.

4	<p>Water services are provided in a cost effective manner</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Spend money on water services effectively and wisely by managing and operating the water services to get the most out of the assets and implementing work programmes that reflect community priorities. • Identify and manage external factors that may impact on the future cost of service provision. • Consider 'whole-of-life' costs and apportion capital costs equitably over time. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Poor planning, management and operation of water services will result in additional costs to the customer, or inability to provide the desired level of service within an agreed budget. • The current community may carry an unfair share of capital works costs. • Deferral of expenditure may place an unfair cost burden on future generations.
5	<p>Problems with water services are addressed in a timely manner and prioritised according to risk and need</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Respond to service problems and address customer complaints in a timely manner. • Give priority to resolving service deficiencies that have greatest impact on the community, eg where the consequences are most severe or widespread. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Poor customer satisfaction. • Adverse effects on public health, damage to property, economic loss, environmental damage.
6	<p>Service capacity is provided to accommodate growing communities, where this growth is sustainable</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide water services in response to the needs of changing and growing communities without compromising existing levels of service for existing communities. • Plan for and develop additional service capacity in appropriate locations in a timely manner where growth is sustainable. • Limit infrastructure development as may be necessary to constrain growth to sustainable levels. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Declining service standards (eg more frequent water restrictions) for existing customers if additional demand exceeds service capacity. • Constrained economic development through lack of essential services. • Long-term adverse effects (social, cultural, economic, and environmental) arising from unsustainable development facilitated through inappropriate provision of services.

7	<p>Adverse effects of water services on cultural and heritage values are minimised</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide water services without compromising cultural and heritage values associated with the water, the water services infrastructure or the District as a whole. • Provide water services to facilitate protection of, and access to, cultural and heritage sites and facilities. • Recognise that water has particular cultural significance for Maori. Maori belief is that water and all resources have Mauri, a life force. Te Taumutu Runanga have prepared a Natural Resource Management Plan that explains the values that the local resources hold for them. • Recognise that the existing water services infrastructure have cultural or heritage value that contributes to the character of Selwyn District. Settlers from the 1840's onwards found the district mainly flax swamp with light tussock on the higher lands. In order to bring the swamps into production a system of drains were installed. The country became highly productive and thriving local communities were established. Water races constructed to enable productivity in dryland areas have parallels. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Loss or degradation of sites, artefacts, structures, waterways, landscape features and other values of cultural and heritage importance. • Changes to Selwyn District's rural character, particularly through loss of small rural communities founded on the basis of water services. The Community Plan recognises the importance of the rural theme of Selwyn District. • Degradation of the Mauri of land, water or the sea by reduction of its capacity to support traditional uses and values. The values of Maori are considered to be a matter of national importance.
8	<p>Adverse effects of water services on the environment are minimised.</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Avoid, remedy, or mitigate adverse effects of the water services on the environment (as required by the Resource Management Act). The 5Waters activity is strongly connected to the environment. It relies on the ability to take water from the environment for domestic, stock and irrigation purposes. It discharges wastewater back to the environment, and manages water (land drainage and stormwater) within the environment. • Take into consideration how the provision of water services may facilitate land use activities, such as agriculture, residential development and industry that have their own environmental impacts. • Ensure that the community is aware of how their actions may contribute to adverse environmental effects, eg disposal of pollutants to stormwater drains, or excessive water use. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Severe, long-term impacts not only on the environment, but also on the social, cultural and economic wellbeing of Selwyn District. • Depletion of water resources leading to unreliable water supply systems that may make living, working and doing business in the District difficult or undesirable. • Degradation of water quality, having impacts on land and water bodies and their associated habitats and ecosystems. This can also have public health consequences, compromise recreational use of water (eg swimming, fishing, kayaking, beaches), and degrade cultural values associated with water, eg Te Waihora as a food source. • Loss of habitats and biodiversity in the District, including naturalised water races and land drainage channels. • Significant costs to mitigate adverse impacts, or to provide new water sources or additional treatment processes if potential water sources are depleted or degraded.

9	<p>Greenhouse gas emissions from the provision of water services are minimised.</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Minimise potential climate change impacts arising through emission of greenhouse gases. • Reduce electricity use to achieve energy costs savings and reduce Council's carbon footprint. The 5Waters activity accounts for approximately half of SDC's annual power consumption. • Reduce greenhouse gas emissions from the use of liquid fossil fuels (ie petrol and diesel) through improved management and utilisation of technology. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Contribute to climate change impacts resulting from global greenhouse gas emissions on a global level. These impacts will have adverse social, economic and environmental consequences on a global scale as well as for Selwyn District. • Fail to meet Council's obligation to address this issue through supporting New Zealand's move to meet Kyoto obligations. • Be poorly placed to operate in a carbon trading environment and be subject to additional taxation that will increase the cost of providing water services.
---	--

A3.6 Sustainability Principles and Relationship to Levels of Service

Sustainability Principles	Relationship with Level of Service
1 Make decisions based on the four aspects of well-being	<p>1 The community is provided with water services to a standard that protects their health (<i>social well-being</i>) and property (<i>economic well-being</i>)</p> <p>2 Customers are provided (<i>social</i>) and fairly charged (<i>economic</i>) for water services that meet their reasonable needs</p> <p>3 Nuisance effects of water services are minimised (<i>social and economic</i>)</p> <p>4 Water services are provided in a cost effective manner (<i>economic</i>)</p> <p>5 Problems with water services are addressed in a timely manner and prioritised according to risk and need (<i>social, economic, environmental</i>)</p> <p>6 Service capacity is provided to accommodate growing communities, where this growth is sustainable (<i>social, economic, cultural, and environmental</i>)</p> <p>7 Adverse effects of water services on cultural and heritage values are minimised (<i>cultural</i>)</p> <p>8 Adverse effects of water services on the environment are minimised (<i>environment</i>)</p> <p>9 Greenhouse gas emissions from the provision of water services are minimised (<i>environment</i>)</p>
2 Observe the Precautionary Principle to provide contingency and enable adaptability of our community	<p>9 Greenhouse gas emissions from the provision of water services are minimised – <i>In the absence of a detailed understanding of climate change SDC is acting on the best infoResource Management Action available</i></p>
3 Seek “intra-generational” and “inter-generational” equity	<p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>Fair charging systems promote equity for all. Both current and future needs and demands on resources will be taken into account in ascertaining what reasonable needs actually are.</i></p> <p>6 Service capacity is provided to accommodate growing communities, where this growth is sustainable – <i>Growth will be restricted where additional service capacity cannot be provided so as not to adversely impact on services provided to existing consumers, or leave a legacy of unsustainable development for future generations. Additional service capacity will be provided, where possible, to meet the needs of future generations without imposing a burden on current consumers.</i></p>
4 Internalise environmental and social costs	<p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>Fair charging systems will recognise associated environmental and social costs and ensure that these costs are not deferred to future generations.</i></p>
5 Foster community welfare	<p>1 The community is provided with water services to a standard that protects their health and property – <i>strong communities require a safe water supply and drainage system</i></p> <p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>5 Waters services provide for community needs</i></p> <p>3 Nuisance effects of water services are minimised – <i>The wellbeing of a community can be adversely affected by the 5 Waters services if not well managed</i></p> <p>7 Adverse effects of water services on cultural and heritage values are minimised – <i>culture and heritage are elements of community capital that are to be promoted</i></p>
6 Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems	<p>8 Adverse effects of water services on the environment are minimised – <i>Minimising adverse effects and seeking to achieve positive environmental outcomes will promote biodiversity and ecosystem protection.</i></p>

Sustainability Principles	Relationship with Level of Service
7 Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes	<p>7 Adverse effects of water services on cultural and heritage values are minimised – <i>Cultural values cross District boundaries and local efforts can contribute to sustainability on a regional/national level</i></p> <p>8 Adverse effects of water services on the environment are minimised – <i>The environment is wider than Selwyn District and local environmental efforts can contribute to sustainability on a regional/national level.</i></p> <p>9 Greenhouse gas emissions from the provision of water services are minimised – <i>Climate change associated with greenhouse gas emissions is a global issue that SDC cannot address in isolation, but can contribute to wider efforts in this area.</i></p>

A3.7 Pre-Prioritisation

Pre-prioritisation steps i.- iv.

Level of Service Assessment						
LoS Description:	Weighting:	Performance Measure:	Performance Level		iv	
			Current:	Resultant:		
1 The community is provided with water services to a standard that protects their health and property	0.19	1.2 DWSN 2 compliance for water in distribution zone	2	4	0.38	
2 Customers are provided and fairly charged for water services that meet their reasonable needs (quantity)	0.15		0	0	0.00	
3 Nuisance effects of water services are minimised	0.07	1.1 Frequency of unplanned interruptions	1	4	0.21	
4 Water services are provided in a cost effective manner	0.15	1.2 Unplanned maintenance costs as a proportion of total O&M costs	1	3	0.30	
5 Problems with water services are addressed in a timely manner and prioritised according to risk and need	0.14	1. Frequency and Average duration of unplanned service interruption	1	4	0.42	
6 Service capacity is provided to accommodate growing communities, where this growth is sustainable	0.15		0	0	0.00	
7 Adverse effects of water services on cultural and heritage values (including indigenous and local/regional) are minimised	0.03		0	0	0	
8 Adverse effects of water services on the environment are minimised	0.07	1 Receiving water quality	1	3	0.14	
9 Greenhouse gas emissions from the provision of water services are minimised	0.05	1.1 Scope 1 and Scope 2 GHG Emissions	1	3	0.1	
Sub Total:					1.55	
Exposure:					5	
Total:					7.75	

Manual Override: ☐ 1 ☐ OK

Reason for Manual Override:

A3.8 Example of Alpine Community Of Interest Prioritised Projects

Community of Interest: **Alpine**

Utility: Wastewater													
Scheme: Castle Hill wastewater													
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Level of Service)													
630	Prepare Replacement Schedule for Pipes in Poor Condition	5	0	2000	0	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			0	2000	0	0	0	0	0	0	0	0	0
Projects													
429	Castle Hill Wastewater Disposal Resource Consent Renewal	7	8000	0	0	0	0	0	0	0	0	0	0
629	CCTV survey of wastewater reticulation	5	10000	0	0	0	0	0	0	0	0	0	0
Projects Subtotal:			18000	0	0	0	0	0	0	0	0	0	0
Castle Hill wastewater Scheme Total:			18000	2000	0	0	0	0	0	0	0	0	0
Scheme: Lake Coleridge wastewater													
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Level of Service)													
631	Prepare Replacement Schedule for Pipes in Poor Condition	5	0	1500	0	0	0	0	0	0	0	0	0
245	Install Lake Coleridge UV Control System	5	0	0	10000	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			0	1500	10000	0	0	0	0	0	0	0	0
Projects													
247	Prepare Lake Coleridge STP Communication Plan	6	5000	0	0	0	0	0	0	0	0	0	0
246	Prepare Lake Coleridge STP Emergency Plan	6	5000	0	0	0	0	0	0	0	0	0	0
Projects Subtotal:			10000	0	0	0	0	0	0	0	0	0	0
Lake Coleridge wastewater Scheme Total:			10000	1500	10000	0	0	0	0	0	0	0	0
Wastewater Utility Total:			28000	3500	10000	0	0	0	0	0	0	0	0
Utility: Water													
Scheme: Arthurs Pass water supply													
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Growth)													
426	Assess Tourist Demand Growth and Capital Works Upgrade Strategy	7	2000	0	0	0	0	0	0	0	0	0	0
Capital (Growth) Subtotal:			2000	0	0	0	0	0	0	0	0	0	0
Capital (Level of Service)													
482	Fire Tank Reservoirs	25000	0	0	0	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			25000	0	0	0	0	0	0	0	0	0	0
Projects													
636	Review Public Health Risk Management Plan for Arthurs Pass	13	0	0	2500	0	0	0	0	0	0	0	0
624	Underlake Catchment Sanitary Survey at Arthurs Pass	6	0	0	2500	0	0	0	0	0	0	0	0
653	Review Protocol Treatment Requirements and Capabilities for Arthurs Pass	6	0	0	2500	0	0	0	0	0	0	0	0
264	Investigate WTP Shut-Down on Power Failure	6	0	0	1000	0	0	0	0	0	0	0	0
263	Review Seismic Restraint	5	0	0	2500	0	0	0	0	0	0	0	0
578	Review of Backflow risk management for Arthurs Pass	4	2000	0	0	0	0	0	0	0	0	0	0

For:	2009 Hynds Paper of the Year	
To:	INGENIUM	
Category:	Asset Management	
Title:	5Waters – Sustainable Activity Management Planning	
Authors:	Hugh Blake-Manson CPeng, Int(PE) Asset Manager Utilities hugh.bm@selwyn.govt.nz	Rob Blakemore, CPeng FIPENZ Manager Environmental Training Centre Rob.Blakemore@opus.co.nz
Organisation:	Selwyn District Council PO Box 90, Rolleston 7643 New Zealand	138 Hutt Park Road PO Box 30 845 `Lower Hutt New Zealand
Abstract: Max 200 words	<p>A purpose of New Zealand's Local Government Act 2002 is to deliver sustainable development. Local Authorities (Councils), through their Asset Management groups, are moving rapidly to achieve this purpose using the vehicle of Activity Management Plans (AcMP).</p> <p>The International Infrastructure Management Manual (IIMM) guides AcMP development. The guidelines follow robust and traditional engineering principles – arguably sustainability is not a priority component. The challenge for each of the now Councils is to make a solid connection between comprehensive AcMP and sustainable development without national assistance. This is very inefficient, as all councils have common functions and should be able to share expertise and intellectual property.</p> <p>Through a mutually beneficial Professional Service Contract, Selwyn District Council and OPUS International Consultants assessed Selwyn's 5 water services (5Waters) as one AcMP. We used a forward-thinking, interconnected set of tools; which make clear the consequences of <u>not</u> changing current and future levels of service, when assessing costs and benefits.</p> <p>The tools include: integration of the 5Waters, derivation of common LoS and a scalable, transferable programme which prioritises future works based on contributions to LoS for future generations. This sets a new and clearly sustainable AcMP direction for the Council and its community. This process is also transferable to other Councils, with necessary local adaptation.</p>	

1.0 Identification of the Issues

1.1 Setting the Scene - The 5Waters

The Selwyn District Council (hereafter council) is a local authority situated in the South Island of New Zealand - cf. Figure 1-1. One of 75¹ in New Zealand, council is in many ways a typical example of the majority of its 74 namesakes as a provider of “core business” activities. Core business is considered to be delivery of water, waste, transportation, regulatory and cost recovery services.

Council is located in the heart of the Canterbury Region’s groundwater zone. How and where water for human, agricultural, cultural and recreational uses is managed is of considerable interest to Cantabrians. The 5Waters Activity is already considered to be a significant one. Council has consistently regarded the provision of the 5Waters as vital to maintaining the community’s health and well-being.

Council sustains more than 70% or 26,000 people of its community via 30 independent and distinct community water service areas. Water service areas are a component of the 80 services areas within the 5Waters Activity. The 5Waters are:

#	Type	# Service Areas
i.	Water	30
ii.	Wastewater	17
iii.	Stormwater	19
iv.	Land Drainage	11
v.	Stockwater	3

The 5Waters are part of the same hydrological water cycle; hence the term “water” is interchangeable throughout this paper, and is therefore regarded as one activity.

Figure 1-1: Council Location



Council has access to a globally unique, high quality water source. Secure, uncontaminated, untreated freshwater for drinking is still delivered to the majority of accessible populated areas in the district. How Council ensures that this life-giving resource is preserved for future generations is of utmost importance.

Generally streams, rivers and springs are not part of this Activity, as they are managed by the overarching authority – the Canterbury Regional Council. In fact, the Canterbury Regional Council is delegated authority to manage the water resource, with Council one of approximately 18,000 parties requesting consent to take/use and discharge it.

1.2 Sustainable Development or Sustainable Management?

The Canterbury Regional Council’s regional water management function is complicated by its requirement to address the purposes of the Resource Management Act 1991 - *sustainable management* and of the Local Government Act 2002 - *sustainable development* cf. Appendix A1.

However, the Canterbury Regional Council’s primary focus has become one of delivering *sustainable management* outcomes. Council on the other hand gives priority to the whole of its communities’ needs with a *sustainable development* focus. It currently does this through community dialogue, identifying the impact of proposed changes on the four well-beings (social, cultural, environmental and economic) and implementing a balanced and affordable solution on a case-by-case basis. This balance of the four well-beings balance is also referred to as the quadruple bottom line.

Both sustainable development and sustainable management have been interpreted by the Courts, various territorial local authorities and the community in markedly different ways. We shall consider what this means from a Council 5Waters viewpoint later in this paper.

1.3 The 5Waters Assets – Water and Physical Infrastructure

Council’s role is to ensure that the four well-beings are met across its business. In this instance that translates to delivering a 5Waters activity which meets the level of service requested by the Community of

¹ 12 Regional Councils, 16 City Councils, 57 District Councils (including the Chatham Islands and four unitary Councils which have regional functions)

Interest (hereafter Col). The Col were determined through grouping areas with similar social, economic or demographic features. Often these Col group customers paying targeted rates for any or a number of the 5Waters services. Council has used this idea, and through a rigorous process identified five separate geographical areas with common features. Identifying five unique Col has significantly assisted in the sustainability process, as it provides manageable clustered groups.

In New Zealand it is recognised in law that water is a public resource, and therefore has no owner. For the purposes of the 5Waters Activity Management Plan (hereafter AcMP), that view is not appropriate. Along with the physical assets that convey water (in its various states) water itself is regarded as a community asset of infinite life. This is because water:

- Is the substance without which there would be no infrastructure, nor habitable environment for humans, and hence no four well-beings.
- Has an infinite life, is part of a continuous cycle and is regarded as having high cultural significance ie. taonga (treasured) status.
- Must be secured for human and environmental uses to meet current and future generations needs
- Must be managed for built communities to exist
- Must be understood, monitored and cared for

2.0 The Issues – Turning An Oil Tanker?

Council has chosen to be proactive to the range of core issues refer Table 2-1 - substantially evolving its approach to 5Waters Asset Management. Any attempt to address the negative effects of these issues has been likened to trying to “turn an oil tanker”. The issues are interlinked across four levels: global, national, regional and local. The effectiveness of council to mitigate or avoid issues improves significantly the closer they are to its governance zone. Never-the-less, 6-9 years of incremental effort are typically required in Councils to adapt, mitigate or change in response to national and global issues. The challenge then lies in identifying if this timeframe can productively be shortened.

Table 2-1: Issues For & Influence of Council 5Waters Activity.

		Key	Sphere of Influence		
		Global	National	Regional	Council
<p style="text-align: center;"> </p>					
<ul style="list-style-type: none"> – Kyoto Climate Change – Liquid fuels reliance – Water Quality Standards – Mobility of Waterbourne disease 		<ul style="list-style-type: none"> – Legislation – Resource Management, Local Government Act Health (Drinking water)Amendment – NPS Freshwater Management – Restrictive distances for international trade 	<ul style="list-style-type: none"> – Over-allocated freshwater – Regional Water policies – General quality decline – Aggregate supply low – Growth (brown field and greenfield) 	<ul style="list-style-type: none"> ↑ OPEX costs² ↑ CAPEX costs³ ↑ Compliance costs ↑ LoS expectations Numerous diverse schemes Diverse interests for water Proposed irrigation scheme 	

Specific local issues for council are highlighted below:

- The second highest population growth rate⁴ in New Zealand, with associate high resource needs
- 5Waters assets of \$157 M, increasing by an average of \$4 M / yr
- Diverse and quickly changing communities of interest, with changing expectations
- Potential for Central Plains Water Irrigation scheme covering 60,000 ha of part developed/ undeveloped upper plains – consents have been applied for
- Level of Service creep – both with customers demanding more and Asset Managers providing a service above that requested
- Increases in operational, capital and compliance costs above consumer price index levels
- The Office of the Auditor General (hereafter OAG) is increasing its expectations for AcMP standards, with limited industry guidance on tools to provide holistic sustainable outcomes
- Effect of historical legislative changes cascading into substantial compliance costs increases

² OPEX – operations and maintenance expenditure,

³ CAPEX – capital (growth and Los) expenditure, LoS – levels of service,

⁴ www.stats.govt.nz 30th June 2007 (4.4 %)

Council has identified a path that will lead to rapid and measurable improvements to outcomes for the 5Waters within the next 3-year planning cycle. It will achieve this through a revised framework approach.

3.0 AcMP Framework – Current and New

3.1 Current AcMP Framework

The way council undertakes the 5Waters Activity is largely directed by regulation⁵. Driven by the Local Government Act 2002, council has to deliver a Long Term Council Community Plan (hereafter LTCCP) covering ten consecutive financial years. The AcMP is the vehicle for this detailed financial, asset, demand forecasts and risk assessment data. AcMP undergo intensive revision on a 3-yearly cycle. At its simplest, this allows council to plan for a long-term view while enabling it to adjust for constantly changing financial factors.

This traditional role of AcMP within this LTCCP process is provided below cf. Figure 3-1. In New Zealand, AcMP are developed using the 2006 issue International Infrastructure Management Manual (hereafter IIMM) guidelines and supporting documentation or guides⁶. Section 3.2 discuss the improvements, shown in Figure 3-2.

Figure 3-1: A “standard” AcMP framework with prioritisation

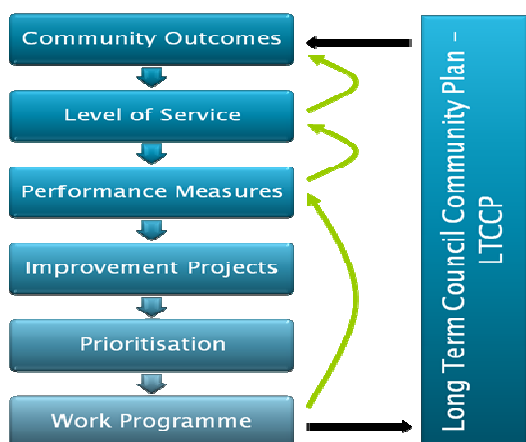


Figure 3-2: The Council 5Waters AcMP framework



The OAG audits the quality of Council's AcMP against the requirements of the Local Government Act 2002 and the IIMM and has stated that continual improvement is required. Expected improvements for the 2009-2019 LTCCP include providing proof that:

- Sustainable development is included
- Different activities are being integrated for efficiencies
- Data integration is being undertaken to deliver more resilient outcomes

The Audit process is powerful, particularly for any Councils' which fail in delivering the minimum level LTCCP required. Where major deficiencies exist a qualified audit is provided; this can have broad negative effect on the whole of that council⁷. Effects could include community criticism, and exposure in the media.

3.2 Council's New AcMP Framework

Having identified the issues and drivers, council needed to confirm what level the 5Waters AcMP should reach. An options assessment cf. Table 3-1 identifies the high level decision process undertaken. Each of the options was constrained by:

- Significance of the Activity - 5Waters is a significant activity
- Council (and staff team) approach - Council LTCCP working party direction
- Human resources and funding - Skills, other work demands and limits to fund extra works

⁵ e.g. Health (amendment) Act prescribes drinking water quality standards, RESOURCE MANAGEMENT ACT based resource consents prescribe wastewater and stormwater quality and quantities, Regional Plans prescribe resource limits

⁶ refer www.nams.org.nz.

⁷ Selwyn District has received an Audit score of "good" for the draft 2009-2019 based primarily on the assessment of the 5Waters AcMP

Table 3-1: Options Assessment – 5Waters AcMP Standard

Option	Benefits	Risks
1. Deliver “do minimum” AcMP	<ul style="list-style-type: none"> Meets Audit NZ requirements Low cost, low resource demands in short term 	<ul style="list-style-type: none"> No view beyond 10 years, or recognition of issues Efficiencies in integration and prioritisation not initiated Delivers minimum LTCCP requirements Sustainability separated from expenditure
2. Provide 5 Individual AcMPs	<ul style="list-style-type: none"> Individual Plans at Core Plus level, meeting appropriate practice 	<ul style="list-style-type: none"> Staff time and resources Inefficiencies in prioritisation of individual Plan works programmes Does not meet national direction Sustainability separated from expenditure
3. Provide Sustainable, Strategic & Integrated 5Waters AcMP	<ul style="list-style-type: none"> Holistic overview and delivery of 5Waters under integrated Level of Service framework Begins pathway to improved management across all lifecycle components of the 5Waters Sustainability and economic commitments build into costs 	<ul style="list-style-type: none"> High initial cost (economic) Requires significant change in way of thinking from staff, Council and community. Outside IIMM guidelines Delivers robust LTCCP requirements

The risk of failure in not having the right team with clear understanding to undertake the work is common to all options. Option 3 was selected by Council, as it was judged as the most appropriate option to meet the community well-beings. A new framework was developed to meet Option 3 requirements cf. Figure 3-2.

3.2.1 Consultancy / Council Alignment

Council recognised that the conventional method of preparing separate plans for 5 separate activities was never going to achieve coordinated sustainable management of its water utilities. There needed to be a new platform created with a fresh approach that allowed for progressive change on an ongoing basis well beyond 2019. It also recognised that external assistance was needed to do this. However, the value of external assistance was dependent on:

- An ability to cast different pairs of eyes around the world to observe trends and changes
- A team of people with wide ranging but relevant skills, who passionately believed in provision of services to meet the needs of existing and future generations
- Understanding of Sustainable Development principles

At the same time the people in this team needed to understand and accept the political framework of Selwyn District Council, and the practical limitations of what was affordable and achievable for its communities. The selection of a Consultancy Team used a process that started with written offers of service and finished with a facilitated workshop with the consultant's people who would be leading and guiding the team.

The workshop environment confirmed Council's view of the preferred consultant. Council staff tested the Consultant's:

- Environmental views eg. proposed holistic methodology, views of sustainability
- Formal training e.g. breadth and depth of technical proficiency to complete activity management plans and forward thinking approaches
- Relationships e.g. ability to relate to others who would form part of a team

On the basis of this process, Opus International Consultants were awarded the commission.

4.0 5Waters AcMP - New

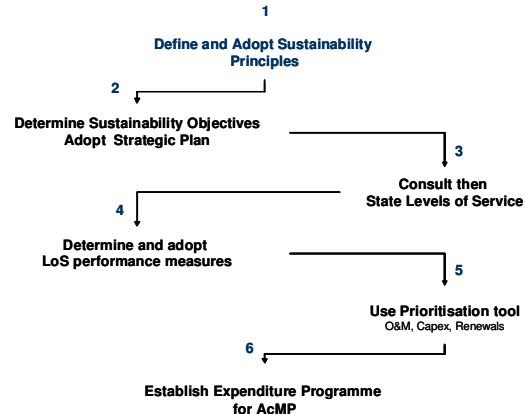
4.1 Implementation Overview

The tools Selwyn have utilised and developed in advancing its implementation of Activity Management may be considered as enabling layers of sustainability cf. Figure 4-1. Council worked outside the IIMM to seek local solutions within a global framework. In general terms the process is:

1. Development of a Sustainability Framework e.g. Adoption of high level Sustainability Principles
2. Determining Sustainability Objectives and Implementation of the 5Waters Strategy based on adopted Sustainability Principles
3. Consultation with the Community of Interest to seek their views on desired Levels of Service
4. Application of Sustainability Principles to final derivation of Levels of Service and Performance Measures
5. Evaluation of proposed projects/improvements against sustainability derived Levels of Service
6. Development of prioritised expenditure programmes

Each of these components is described in further detail below.

Figure 4-1: 5Waters AcMP – Layers of Sustainability



4.2 Step 1 - Define and Adopt Sustainability Principles

4.2.1 The Council 5Waters Sustainability Perspective

Sustainable development covers a complex range of ideas and meanings, dependant on the context it is used in and the views of those referring to it. A local definition of sustainability needed to be established, one which the Council would understand and apply directly to its circumstances.

Sustainable principles were developed within the following guidelines:

- A focus on lifecycle costs, optimisation and understanding risk. Until this point the solid lines of connection between sustainable asset management and sustainability had not been drawn. Nor had there been adequate focus on providing for future generations - in that levels of service had focused on what the existing customers were currently provided. Selwyn was intent on fixing this
- A definition with which the communities could identify. This was easier when one asked them whether they had a role to protect the future of their grandchildren and great grandchildren – the anthropocentric view point. There was an acknowledged risk that sustainability was becoming an overused word and yet no-one had made it clear what it meant, nor why it was relevant. Hence the derivation of principles and explanations to the principles
- An expectation that financial pressure and stress on funding capabilities in the community would continue unless a forward-thinking approach was provided. This allowed Council to understand and make clear the consequences of not taking certain actions

4.2.2 A Framework

A framework was developed to guide decision making and monitor progress towards sustainability of the 5Waters Activity. The framework used a set of high level sustainability principles that complement the four well-beings, bringing these together with a long-term focus to develop themes and objectives with associated performance indicators. Ultimately the framework could be applied across all council activities cf. A3.1.

4.2.3 Sustainability Principles

Seven Principles of Sustainability were developed. These then provided the framework for direct action in delivering projects which provide the Col with physical infrastructure to support its well beings, meanwhile supporting the potential for adoption in all Council activities.

These Principles were adopted by council “for the purpose of strategic and asset management planning and implementation”. Principle 3 is provided in Figure 4-2 (full extent Appendix A3.2).

Figure 4-2: Principle

	<p>Principle 3: Seek “intra-generational” and “inter-generational” equity</p> <p>Improve quality of life and create opportunity for all of the current generation, without compromising the quality of life and opportunity of future generations.</p>
--	---

4.3 Step 2 - Sustainability Objectives and Strategic Plan

Achievement of sustainability objectives (as measured by sustainability indicators) will ultimately be affected through each of council’s key AcMPs. Adaptation of the 5Waters Principles may occur; however achieving sustainable outcomes at an activity level will contribute to council’s overall sustainability based performance measures.

4.3.1 Strategic Plan

Council’s 5Waters Strategy is a foundation document which supports the AcMP. Recognition that the issues in Table 2-1 could no longer be ignored, provided the incentive for council to develop a 5Waters Strategic Plan cf. Appendix A3.3. This was inherently supported by the sustainability principles. The strategy has identified a range of initiatives aimed at achieving “a sustainable district, a place which we and future generations can use and thrive in.”

A direct outcome of this strategic plan is development of a “core plus” AcMP with measurable, directed and targeted actions conveying the community on the pathway to sustainability. All projects undertaken in the 5Waters are prioritised and then selected to achieve the levels of service set under the sustainability platform.

4.4 Step 3 – Consult On Then State LoS

A key requirement of council 5Waters AcMP was to adopt together with LoS cf. Figure 4-3 the:

- Sustainability Principles and four well-beings
- Council’s existing Community Outcomes

LoS were debated with focus groups throughout the Selwyn district. They are designed to protect the four well-beings of existing and future generations.

Figure 4-3: 5Waters Levels of Service

Level of Service
1 The community is provided with water services to a standard that protects their health and property
2 Customers are provided and fairly charged for water services that meet their reasonable needs
3 Nuisance effects of water services are minimised
4 Water services are provided in a cost effective manner
5 Problems with water services are addressed in a timely manner and prioritised according to risk and need
6 Service capacity is provided to accommodate growing communities, where this growth is sustainable
7 Adverse effects of water services are cultural and heritage values are minimised
8 Adverse effects of water services on the environment are minimised
9 Greenhouse gas emissions from the provision of water services are minimised

The process and outcomes received strong positive feedback.

While the Levels of Service are written in non-technical language it may not be clear to customers exactly what they mean in relation to the services that they receive and the environment they live in. Explanatory text⁸ was prepared to assist customer understanding of each Level of Service and explain the potential outcomes if they were not achieved. Council needed to develop forward works programmes that were directly linked to maintenance or improvement of levels of service. Many projects will affect more than one levels of service. Early in the process it was realised that it was crucial for CoIs to convey their views on the relative importance of these Levels of Service. These views could then be converted into weightings that could be applied in the prioritisation process explained below. Through a process of customer focus groups and telephone surveys, weightings of each Level of Service for each CoI were derived.

This process has provided a key point of difference to other multi criteria approaches – in that priorities for spending community money could be directly linked to the communities views of the relative importance of each of the Levels of Service.

⁸ A3.5refer A3.5 for full explanation

These Levels of service are common to the 5Waters and in turn are “hard wired” to the sustainability principles adopted by Council

4.5 Step 4 –Performance Measures

The LoS also have associated performance measures, which ensures they:

- Can be benchmarked to any other 5Waters utility
- Are mutually independent of each other – this was an important consideration for development of a tool that was used to prioritise improvements and work programmes

The work to clearly define the base data required was undertaken in July 2009. A robust system for measuring, recording and reporting performance measures is being developed. This will utilise a data warehouse type system. Council's success in delivering a service can then be determined after 1-2 years of data has been assessed i.e. council must determine the current performance measures to establish reliable and achievable future performance targets.

4.6 Step 5 - Prioritising Expenditure

An important final product of integrated asset management plans is expenditure programmes for the next 10-20 years. The final outcomes of these programmes must be sustainable for successive generations and connected to the sustainability principles. Expenditure programmes have been developed for each of the five communities of interest making allowance for the relative importance of each LoS.

4.6.1 Identification and Prioritisation of Projects

The term ‘project’ is used to refer to any specific work item identified in relation to delivery of the 5Waters Activity. A project may be a management task, process improvement, operational action, or construction of a new asset. The source of potential project may be derived from the strategic plan, from legislative requirements that have arisen since preparation of the last AcMP or because of changed community needs. There are also uncompleted improvements that were outlined in the previous AMP.

The design of the prioritisation process has been based on this fundamental premise:

‘No existing work, new work or system improvement should be undertaken unless there is identification of contribution to the retention or improvement of levels of service for the whole or part of the Community of Interest that is serviced’.

Council has also adopted a number of rules around prioritisation:

- Projects can provide a potential contribution to more than one LoS
- A positive contribution in one area may be negated by loss of benefit in another area
- Renewal of existing assets is not considered within the prioritisation process. A balanced, ongoing renewal strategy is essential to maintain existing levels of service for current and future generations

A “prioritisation tool” was developed and based on the need to identify which performance measures were impacted by the proposed project. It did not attempt to quantify the specific benefits of any project because any project is part of a continuum of projects or work activities. If all projects are completed, the result will be to deliver levels of service to the targeted performance.

It is more important to recognise which levels of service the projects contribute to and in what areas performance will be changed.

4.6.2 Pre-Prioritisation Process

Before any project was prioritised 4 steps refer Appendix A3.7 were followed:

- i. Identify the LoS for the 5Waters Activity
- ii. Determine relative importance of each LoS through community consultation
- iii. Identify performance measures – with scores and descriptors relevant to each LoS and each utility
- iv. Define “exposure levels” to reflect extent of coverage of proposed project

Once a potential project had been identified, a further series of steps was followed:

4.6.3 Prioritisation Process

The prioritisation process was undertaken refer Table 4-1. utilising a custom-developed Access database tool. The database recorded project details and the assumptions used to determine the prioritisation score.

This allowed more than 750 ranked projects to be sorted by community of interest, and scheme. There is also provision for recording budget information to allow prioritised expenditure programmes to be produced.

Originally only one person entered all projects details and scored them. This was done to maintain a common and consistent approach. That person has also been heavily involved in the background AcMP work, understanding Council and its 5Waters sustainability and asset details. It will be a requirement that any other projects entered / modified are done after the individual has reached an appropriate level of 5Waters process and systems understanding.

Risk Based Tool

The prioritisation score effectively represents an evaluation of community benefit in the absence of financial implications. It is a measure of the consequence component when assessing the risk of not achieving levels of service. Furthermore, it could be argued that the probability of failing to deliver levels of service is progressively reduced each time a project under evaluation is completed

Table 4-1: Prioritisation Process

Step	Description	Explanation
1	<i>Identify which Levels of Service are potentially affected by the project</i>	These may be affected positively or negatively by the project
2	<i>Identify the most significant performance measure the project can impact</i>	Only one performance measure should be identified for each LOS identified as relevant
3	<i>Assign a “current status” performance measure score for each LOS in the community</i>	Such as “accepted” – to be keep by, “On-hold” – awaiting confirmation
4	<i>Assign a community exposure score for the project under consideration</i>	What relative extent of the Col would be exposed to this project if it was completed?
5	<i>Identify the aspired performance to which this project will contribute</i>	The maximum (best) performance drew a score of 5
6	<i>Calculate the prioritisation score</i>	This is calculated as the sum of all identified performance improvements weighted by the associated Level of Service and exposure

The derivation of work programmes and budgets for the 5Waters AcMP is a multi-stage process. The prioritisation tool outlined in Table 4-1 provides a useful foundation. However, it would be unwise to totally depend on the scoring process without a further assessment of practical details and extenuating circumstances that may result in a reprioritisation.

Typical examples of factors that may justify a “manual override” of the project priority score include:

- Coordination of construction activities with other works e.g. roading or landscaping
- Availability of external funding sources e.g. Ministry of Health
- Issues over community affordability because of current rating systems
- The need to sequence activities for practical reasons
- Projects where there are impacts to the same LoS but in more than one utility e.g. a new telemetry system
- Projects that provide benefit to the whole district or more than one community of interest – where efficiencies can be gained through widespread implementation
- Committed projects where funding is to be carried over from previous budgets

The score derived from use of the prioritisation tool can be regarded as:

“an indicator of comparative community benefit and a comparative evaluation of the consequence of not achieving levels of service if the project or improvement was not done”.

4.7 Step 6 - Development of Expenditure Programmes

The outcome of this prioritisation process was derivation of expenditure programmes that prioritise improvements according to community benefit for existing and future generations. The programmes were taken back to the Councillors and community via community budget meetings. The key question raised at community meetings was whether residents were prepared to accept the associated targeted rate increase to meet their desired level of service. The programme must be accepted in June 2009 (start of the LTCCP cycle) and, implemented according to affordability of the generations that will benefit from the projects.

Draft expenditure programmes cf. Appendix A3.8 based on community benefit can then be reviewed with respect to funding capacity. Where funding constraints limit the amount of work that can be undertaken, the lower priority projects are deferred to future years and a revised expenditure programme produced.

5.0 Conclusions

Council has 80 individual and separately rated water service areas, covering broad, disparate geographic and hydrological catchments. For the purposes of strategic and asset management, planning for these services is to be managed as one service – the 5Waters Activity. Through provision of seven Sustainability Principles in the 5Waters activity, council intends to deliver sustainable development outcomes. This will be done via delivery of projects which will meet the community if interests immediate and long term well-beings.

Sustainable development is a concept, which is interpreted in many ways dependant on its context. It was therefore imperative that the 5Waters Activity Management Plan provide the cement to make sustainability real and visible.

The 5Waters Activity process itself was aligned with the seven adopted Sustainability Principles in the following ways:

- i. Consideration of Community Outcomes reflecting the four aspects of well-being
- ii. Consultation processes and community involvement in decision-making
- iii. Long-term financial planning for asset maintenance and renewal and use of financial systems to fairly apportion costs within the current community and to future communities that will benefit from the assets

Some of the immediate benefits of self defining and implementing a sustainability based activity plan process are:

- Advances to the IIMM framework, not because of Auditor New Zealand requirements but because of clearer recognition of local community, regional to global issues
- Prioritised projects which aim to protect the 5Water asset – as it sustains life, now and in the future – that can be undertaken at a rate to match community affordability
- Improved national and global branding of Selwyn, its people and businesses in a global village
- Raising the recognition of the community that their water services are part of a built and natural system, which will assist in focusing their attention on conservation and efficiency

Many benefits will not be recognized immediately, but through benchmarked performance measurement, council will confirm how successful it is in achieving the 5Waters well-beings

The process of developing the 5Waters Activity Management Plan required a substantial investment of time, effort and funds. The commitment to undertake such work is dependant on the community and councils willingness and perspective.

It now remains for Council to consider integration of the principles and prioritisation across all of Council Activities – an integrated Council management framework. This will challenge council to review the way it undertakes its core business

APPENDICES

A1 Legislation - Purposes

A1.1 Local Government Act 2002

The Local Government Act 2002 makes reference to sustainability, including:

Section 10 Purpose of local government

The purpose of local government is –

- (a) *To enable democratic local decision-making and action by, and on behalf of, communities; and*
- (b) *To promote the social, economic, environmental and cultural well-being of communities, **in the present and for the future.***

Section 14 (1)(h) Principles relating to local authorities

*In taking a **sustainable** development approach, a local authority should take into account –*

- (i) *the social the social, economic, environmental and cultural well-being of communities; and*
- (ii) *the need to maintain and enhance the quality of the environment; and*
- (iii) *the reasonably foreseeable needs of future generations.*

A1.2 Resource Management Act 1991

Section 5 Purpose

*The purpose of this Act is to promote the **sustainable management** of natural and physical resources.*

*In this Act, “**sustainable management**” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well being and for their health and safety while –*

Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

A2 Global to Local Issues Driving 5Waters Sustainable Asset Management

A2.1 Global Issues

The following global issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	World energy markets, particularly the pricing structure of liquid fossil fuels have shown significant upward movement since 2007. While fluctuations occur, there is an international view that demand and cost will disproportionately increase
ii.	There is a related stress on access to affordable basic foods for an estimated 100 million individuals
iii.	A majority of the population live in countries where primary industry and low cost manufacturing of western goods occurs
iv.	The “parent and grandparent” profile in the western world is growing as healthcare continues to support their longevity
v.	A significant Asiatic population e.g. India and China is consuming and producing world resources as it attempts to climb into “1st World” status – equivalent of OECD status
vi.	Readily accessible base resources are being consumed by these countries, making it increasingly more expensive to source the remaining resources eg to locate, refine, produce and deliver to the marketplace
vii.	Migration of skilled and semi-skilled workforce from lower wage economies to high wage ones continues to deplete smaller and more vulnerable countries – subsequent pressure arise to simply manage and fund existing infrastructure

A2.2 National Issues

The following national issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Stronger environmental constraints, delivered through legislation continue to set high economic costs to develop
ii.	As with global resource, access to national raw materials is becoming increasingly expensive
iii.	The relative distance between region/national market places and global market places increases costs locally; successful branding in the marketplace increases in importance
iv.	Awareness and focus on our global communities ongoing vulnerability to climatic variability and change
v.	InfoResource Management Action Technology fostering and redirecting rapidly evolving social and cultural needs. Changes are rapid and not necessarily predictable
vi.	Business moves to triple and quadruple bottom line reporting indicating increasing community regard for all four well-beings
vii.	Review of current legislative drivers NZ – RESOURCE MANAGEMENT ACT and LOCAL GOVERNMENT ACT, what about other countries regimes
viii.	Development of a framework of national policy statements and regulations around sustainability and resource usage
ix.	Further use of risk management techniques

A2.3 Regional Drivers

The following regional issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Water resources are approaching a fully allocated (or in some cases over-allocated) position
ii.	Coalitions of Councils are occurring as costs to continue governance functions rise
iii.	Development of Guiding and Regulatory frameworks (eg in Canterbury this is the Regional Plan and Policy documents)
iv.	Raw materials (aggregate, water) resources totally allocated, or restricted/limited due to construction demands and environmental protection

A2.4 Local Drivers

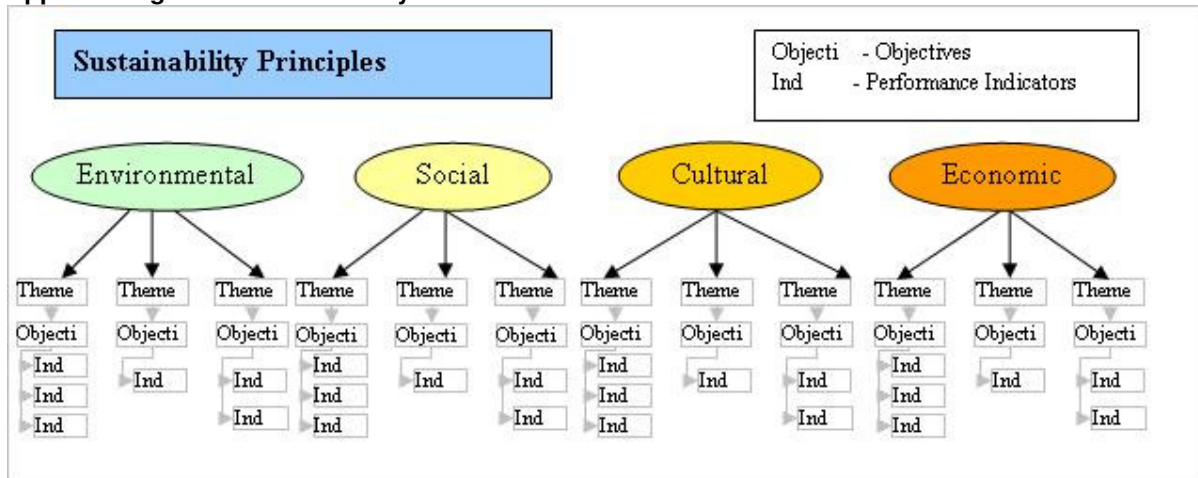
The following local issues have been identified relative to Selwyn District and the 5Waters Activity.

i.	Life-cycle asset planning remains relatively fixed on business models supported by supply of fossil fuel based materials and services – few reliable or significant innovations away from this model are occurring. This directly affects and constrains the built environment management
ii.	Financial and asset planning over insufficient duration eg not aligned with the asset life
iii.	Community awareness on broad principle climate change and energy conservation potential is rising e.g. www.powersaving.co.nz Meanwhile the legislative framework for TLAs does not directly encourage innovation, particularly in areas seen as outside core business
iv.	Level of Service creep – with few Strategic and Management Plan linkages to identify what is required

A3 Council Sustainable Asset Management – Selected Tools


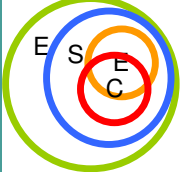
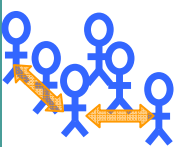
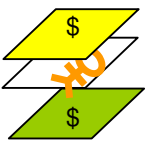



A3.1 Sustainability Framework

Appendix Figure 1: Sustainability Framework

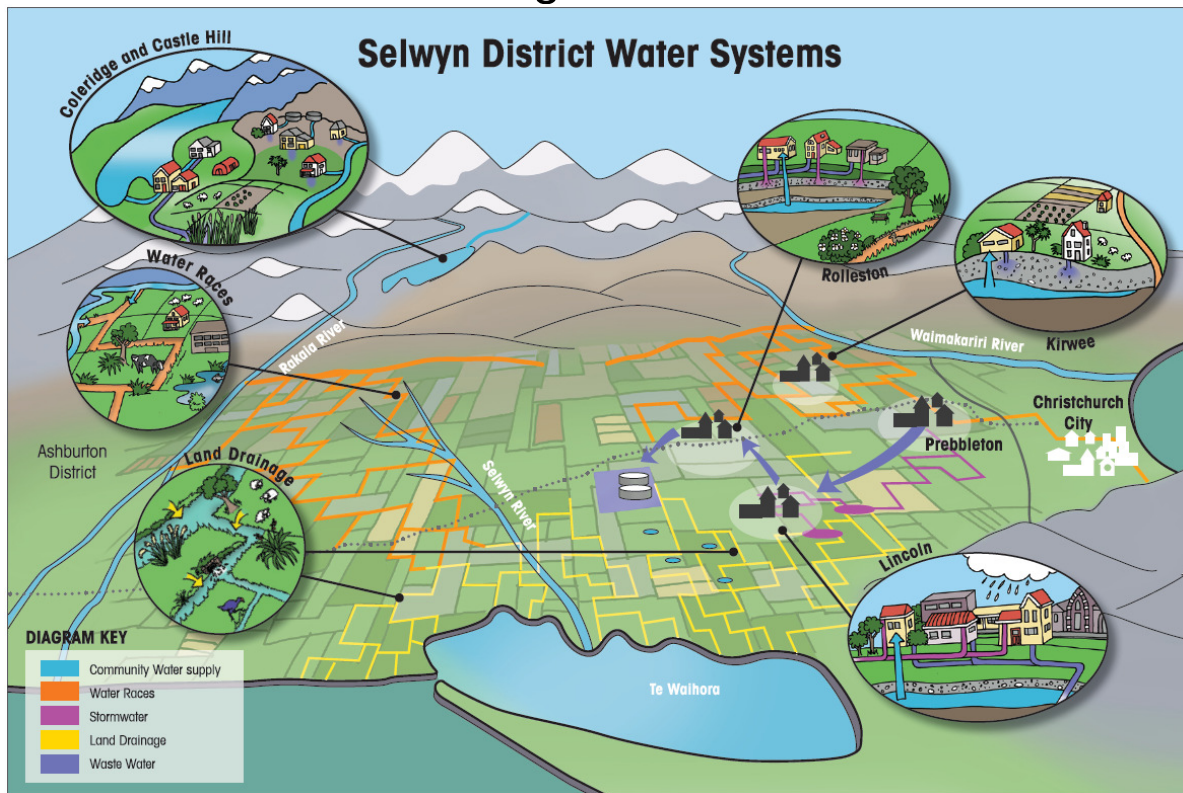


A3.2 Selwyn District Council - Sustainability Principles

Appendix Figure 2: 5Waters Sustainability Principles

	<p>Principle 1: Make decisions based on the four aspects of well-being</p> <p>Integrate environmental, economic, social and cultural considerations within Council decision making. Consider both the short-term and long-term effects of the decision</p>
	<p>Principle 2: Observe the Precautionary Principle to provide contingency and enable adaptability of our Community</p> <p>Err on the side of caution in the face of scientific uncertainty and a risk of serious or irreversible environmental damage</p>
	<p>Principle 3: Seek “intra-generational” and “inter-generational” equity</p> <p>Improve quality of life and create opportunity for all of the current generation, without compromising the quality of life and opportunity of future generations</p>
	<p>Principle 4: Internalise environmental and social costs</p> <p>Develop and adopt a system that recognises the true costs and benefits of protecting and restoring environmental/ecological, human, social and cultural resources affected as a result of the services that Council provides</p>
	<p>Principle 5: Foster Community welfare</p> <p>Support and encourage the region to prosper socially and culturally. Our assets are not just our built assets but our people, their skills and the connections between them</p>
	<p>Principle 6: Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems</p> <p>Conserve, and sustainably use and manage, the district’s biodiversity, recognising the various services that ecosystems provide to humans as well as the environment’s intrinsic value</p>
	<p>Principle 7: Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes</p> <p>Recognise that we are part of a whole globe system whether we can physically see the impacts of our actions or not</p>

Selwyn District Council Five Waters Strategy (Draft) *The Future for:* Community Water Supplies, Wastewater, Waterraces, Land Drainage and Stormwater



Background

Selwyn District Is unique. Water from the sky, rivers and aquifers supports the urban and rural communities, providing for economic wealth, social health and cultural diversity. Use of water resources and the need to protect the environment for future generations creates tensions in some areas.

The Selwyn District Council and the community have an opportunity now to consider all the Five Waters issues in a coordinated manner. To achieve this, the Council is developing a Strategy focusing on the ongoing management of the Districts water.

Prepared
July 2008

*Councils Vision is
"To achieve excellence in the management of resources and the
provision of services for the People of Selwyn District"*



SDC Five Waters Strategic Plan – Future Position of Water Supplies

1. Introduction

Water has been described as the “gold of this century”. The water footprint of societies may be more important than the carbon footprint to ensure a sustainable future. This draft document has been prepared in recognition of the importance of water to Selwyn and how the continued use of the water resources are affected by:

- Globalisation;
- A growing population;
- Increasing pressure on existing services;
- Rising costs;
- Regional Strategies and;
- The need to provide Management Plans

This **Strategy** outlines the strategic vision for Selwyn District Councils “SDC” **five waters**⁹ **community** services – the “Five Waters”. This Strategy also covers **private** water services to an extent identified within legislation¹⁰.

SDC has adopted seven sustainability principles for the purposes of strategic planning over the Five Waters. Sustainability should be regarded as a continuous journey to seek balance between meeting local and global perspectives, along with economic, cultural, environmental and social well-beings. While we personally may view this with different values, we all seek to achieve a sustainable district a place which we and future generations can use and thrive in.

The sustainability principles help by providing a foundation for a long term Strategy for which community feedback is sought. We will also use them to gauge how successful we are on this journey.

This Strategy will be consulted on with these guiding principles, and is intended to:

- Describe the long-term desired position of SDC with respect to the Five Waters in the next 60 years – to the period when others require the environment to live in;
- Describe opportunities to improve integration of water services;
- Identify what we need to do to achieve long term goals;
- Support Councils’ vision

This Strategy does not:

- Contain financial assessments. They will be provided once this draft strategy has been consulted on with outcomes delivered via the Five Waters Activity Management Plans (AcMP)
- Discuss governance issues such as who manages water resources and what role SDC has.

Strategic direction is being developed across the Five Waters in a consistent way. The generic water interrelationship in townships is shown in Figure 1 and where possible the across the districts rural and urban areas.

⁹ Water Supplies (Urban and Rural), Wastewater Schemes, Waterraces, Land Drainage and Stormwater

¹⁰ Local Government Act 2002 – Part 7

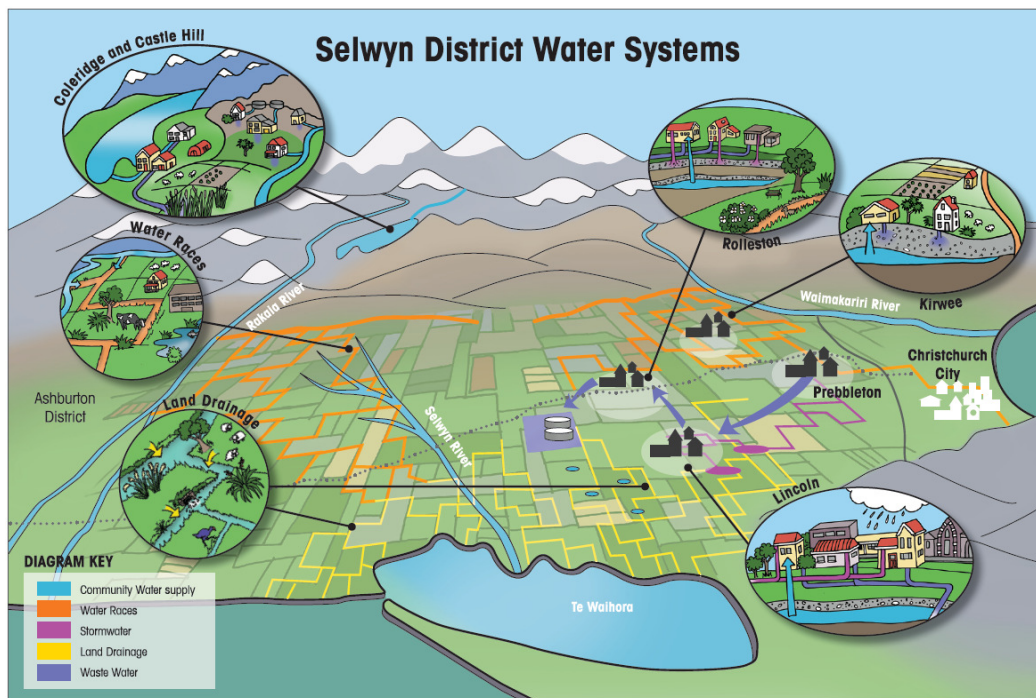


Figure 1 – Five Waters Generic Interrelationships

Take the “Rolleston” example. Water is drawn from deep aquifers for community use, while stormwater is discharged into the gravels above. Wastewater is piped to centralised treatment and disposal areas, with proposed future inflows from other townships. Waterraces flow through and alongside the township.

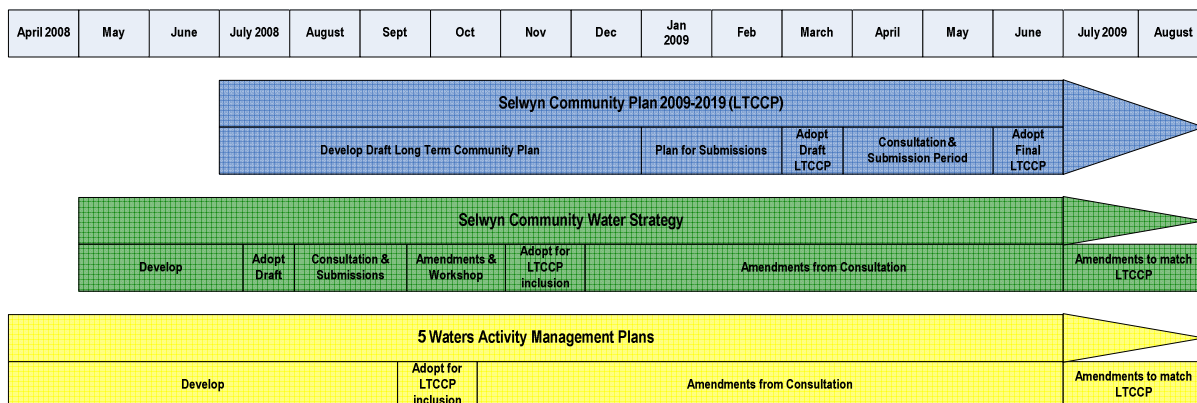
2. Relationship with the AcMP

The AcMP views the five waters as inter-dependant activities for the community of interest. The AcMP will:

- Outline how SDC will undertake the management, delivery and operation for the five water services for the communities in Selwyn over the next 10 years
- Outline the approach to achieve “Levels of Service”
- Contain expenditure programmes, determined by prioritising works and activities that must and could be funded by ratepayers eg meeting mandatory standards, promoting water saving devices.

The AcMP is a living document and is revised at least every three years in time to support the Selwyn Community Plan - the LTCCP.

Currently the AcMP is being reviewed, and will be consulted on from January 2009 – refer Figure Two.



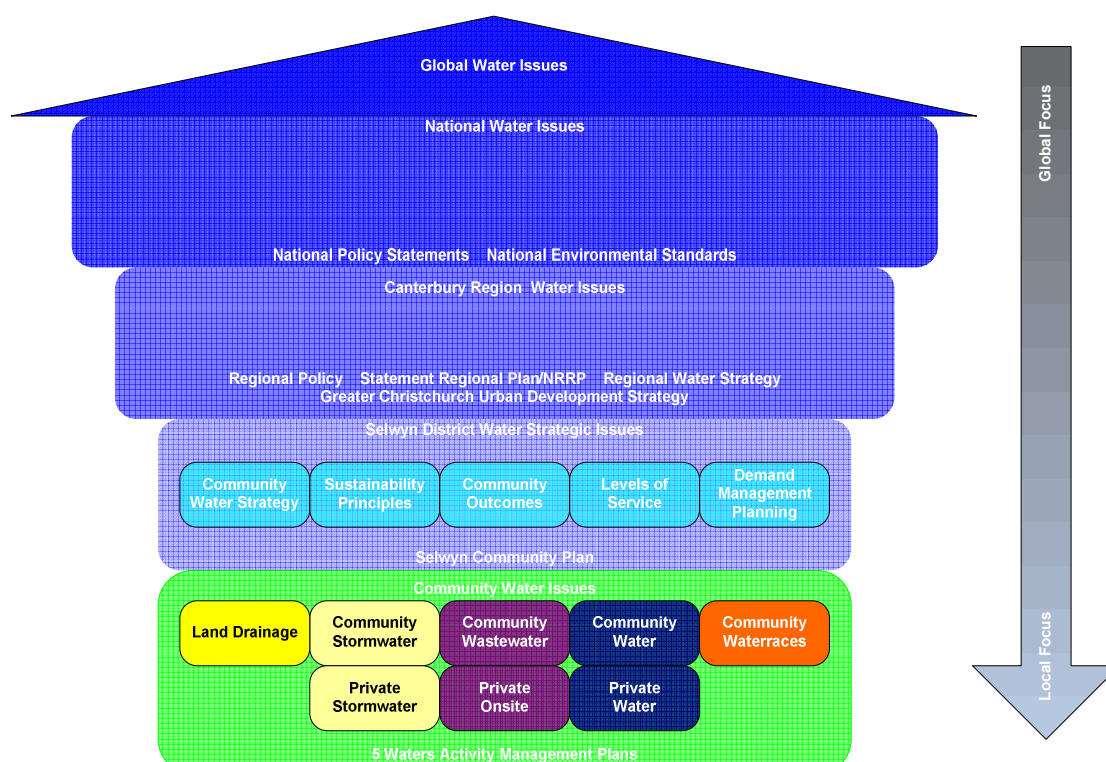
We will in this order:

- i. Adopt a draft Strategy
- ii. Prepare a final AcMP consistent with this draft Strategy
- iii. Prepare and adopt a draft LTCCP based on the above
- iv. Consult on the Strategy
- v. Consult on the LTCCP eg the AcMP
- vi. Revise the LTCCP, Strategy and AcMP in light of feedback and
- vii. Release a final 2009-2019 LTCCP

Before the AcMP review can be completed, the strategic direction should be determined. This Strategy will in effect, create the **vision** and **boundaries** for the AcMP implementation and will be reviewed at least every three (3) years inline with it. Community input strengthens the process by clarifying and prioritising issues, hence consultation is a key part of its validation.

3. Inputs into the Strategy

Strategic planning for the use of Fives Water resources is undertaken at a number of levels. This diagram demonstrates the potential sources of influence on the Strategy.



While the Strategy targets **district** issues – it must do so in a way that accounts for the relevant issues at all other levels.

The Strategy seeks to direct and support the district in a consistent, cohesive and cooperative way. However it is recognised that in the real world there are tensions between the desires of global, national regional and inter-district water allocation, use and management. For example, our urban communities' well-being relies on a strong rural economy, but could suffer from long term environmental impacts of that rural land use.

The strategy is also challenged at a district level by the need to take account of diverse and sometimes, opposing social, economic, cultural and environmental values for different communities in the District Other challenges arise from the impacts of any one of the 5 waters on the others.

4. Proposed Five Waters Strategy Initiatives

Council recognises that rapid improvements (0-3 years) can be made in some areas, while longer term gains (3+ years) can only be brought about after investigation and review – the “possible future”. Initiatives for the possible future are identified for the urban areas serviced by community schemes and rural areas that are not serviced by community schemes – a foldout impact summary sheet is attached.

The Initiatives are identified and graded to indicate priority. It is possible that an initiative may sit at several levels, e.g. global or national, and a decision has been made on the “best fit”. Where any of the Five Waters may be affected, they are noted by abbreviation.

Community Schemes

<i>W</i>	Water
<i>WW</i>	Wastewater
<i>WR</i>	Waterraces
<i>ID</i>	Land Drainage
<i>SW</i>	Stormwater
<i>All</i>	All Urban

Private Schemes

<i>WP</i>	Private Water
<i>WWP</i>	Onsite Wastewater
<i>IDP</i>	Onsite Drainage
<i>SWP</i>	Onsite Stormwater
<i>AllP</i>	All Private Services

All initiatives are summarised below as “**Our Strategy Initiative(s)**” and presented in total on the “foldout” impacts summary sheet. The summary shows the proposed priority and how they will be addressed.

5. Global Initiatives

Global events may move faster than national and regional policy and legislation can currently adapt to. Legislative mechanisms in their current form are regarded as inflexible.



5.1 Sustainability

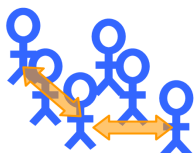
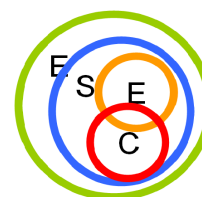
The decision by the SDC on 27.02.2008 to formally adopt **seven sustainability principles** was made after consideration of a number of factors including international concerns around climate fluctuations



Principle 1:

Make decisions based on the four aspects of well-being

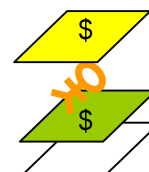
Principle 2:
Observe the Precautionary Principle to provide contingency and enable adaptability of our community



Principle 3:

Seek “intra-generational” and “inter-generational” equity

Principle 4:
Internalise environmental and social costs



Principle 5:

Foster community welfare

Principle 6:
Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems



Principle 7:

Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes

The principles encompass the NZ Government’s current commitment to the Kyoto Protocol, and Councils continuing advances in meeting Local Government legislation.

Our Sustainability Strategy Initiatives(s):

All	SDC will have regard to these principles when making any significant decision that affects changes to the installation, renewal, management and operation of the water infrastructure
All	SDC will monitor current and forecast fossil fuels prices and associate effects on its asset management and operation annually. It will identify effective and efficient opportunities to reduce usage and reliance on this energy source, and seek reliable and sustainable alternatives as they arise.

5.2 Climate Change

There is international concern regarding the impact of climate fluctuations effects. SDC see the effects as:

- Local changes to climate that impact the availability of the water used for supply;
- Changes to International demand for food products that are produced in Selwyn District – that use water for production and change the availability of the resource for community use

Our Climate Change Strategy Initiatives(s):

All	SDC will proactively undertake studies to better quantify the potential impacts of climate change on demand and availability as it affects its district.
All ALCP	SDC will minimise use of and conserve energy, as far as practicable while still meeting agreed Levels of Service. This will extend to all private services in time where a need is recognised
All	SDC will undertake to identify and reduce carbon emissions where a benefit is shown, through more efficient use of materials and services.
W WW WR	SDC will establish and where appropriate implement demand strategies and water loss reduction programmes

5.3 Drinking Water Standards

Drinking water quality standards in New Zealand have been adopted in line with WHO guidelines. The Standards acknowledge the mobility of waterborne disease and the potential impact of organisms that are “imported” into New Zealand.

Our Drinking Water Strategy Initiatives(s):

W	SDC will regard with importance the protection of groundwater and surface water quality that is delivered to its urban communities
WP	SDC will with support from Regional and Ministry of Health officials maintain and advise private users regarding drinking water health issues

6. National Initiatives

National Initiatives are generally developed and promoted by central government. They can result from global issues which have been applied to the New Zealand environment, or ones which have been developed to meet the countries unique demands.



6.1 The Health (Drinking Water) Amendment Act 2007

This Act assigns obligations to SDC as a community water supplier to:

- take all practicable steps to comply with the Drinking Water Standards
 - introduce and implement Public Health Risk Management Plans for the water supply
- Specific obligations and timelines vary according to the population served by the supply

Our Health (Drinking Water) Act 2007 Strategy Initiatives(s):

All	SDC will work to achieve compliance through the implementation of PHRMPs and the planning of upgrades to water abstraction and treatment facilities.
------------	---

6.2 Sustainable Water Programme of Action - SWPoA

The Government has initiated a strategy to improve the management of fresh water, protect our freshwater resources into the future, and acknowledge the fundamental importance of water to all New Zealanders. The strategy focuses on three national outcomes for fresh water:

- Improve the quality and efficient use of fresh water by building and enhancing partnerships and providers eg SDC and rural and urban communities;
- Improve the management of the undesirable effects of land use on water quality through increased national direction and partnerships with communities and resource users
- Provide for growing demands on water resources and encourage efficient water management through increased national direction, working with local government to identify options for supporting and enhancing local decision making, and developing best practice. “

Our SWPoA Strategy Initiatives(s):

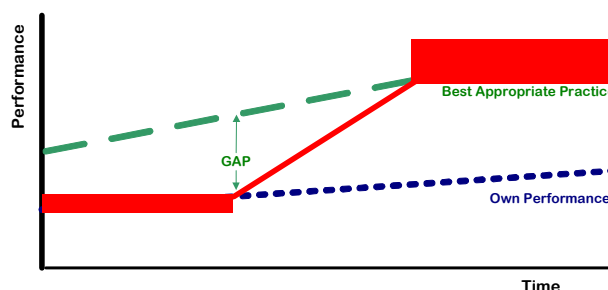
All	SDC will engage with those parties undertaking the SWPoA to understand, apply and sustainably protect the interests of the urban community. This will include submission and representation by Council from time to time.
------------	--

6.3 Benchmarking Performance

Benchmarking refers to the methodology and tools required to identify, measure and respond to key performance indicators of any particular water asset. Benchmarking can be undertaken to allow comparison with neighbours or other utility providers within New Zealand or overseas.

For example, how efficiently SDC is providing or using water could be compared with areas in Australia with similar climate. Adaptable benchmarking is a key aid in identifying opportunities for improvement, learning “best practices”, maintaining stimulus for continuous improvement, and measure success in closing the gap.

Role of Benchmarking

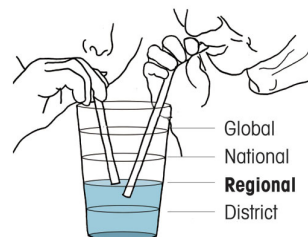


Our Benchmarking Strategy Initiatives(s):

All	SDC will: proactively collect, analyse performance data to establish better comparable performance
W	SDC will collect water quality and water quantity data and present the data in a way that allows assessment of changes to upstream activities on its water supplies

7. Regional Initiatives

Regional initiatives are those which may have been developed as a result of global or national processes. Generally they focus on particular issues which affect the environmental quality in the particular geographic area.



7.1 National Environmental Standard for sources of human drinking water

The National Environmental Standard “NES” requires Regional Councils to ensure that effects on drinking water sources are considered in decisions on resource consents and regional plans. Specifically, Councils will be required to:

- decline discharge or water permits that are likely to result in community drinking water becoming unsafe for human consumption following existing treatment
- be satisfied that permitted activities in regional plans will not result in community drinking water supplies being unsafe for human consumption following existing treatment
- place conditions on relevant resource consents requiring notification of drinking water suppliers if significant unintended events occur (e.g. spills) that may adversely affect sources of human drinking water”

Our NES Strategy Initiatives(s):

W	SDC will seek to ensure that ECan protects the interests of SDC when consenting water abstractions or discharges that can impact on its supplies.
----------	--

7.2 Natural Resources Regional Plan – pNRRP

The proposed NRRP signals many changes to the way in which Council and the community manage their activities and the environmental effects. Some rules such as requiring sewage network utilities operators licences and stormwater discharge consents already have effect, others require the plan to be operative.

Our pNRRP Strategy Initiatives(s):

All AEEP	SDC will engage with the Regional Council at a political and technical level to continue promotion of the issues brought by this document as they affect (primarily) the Five Waters and secondly private services.
All	SDC will seek to deliver 100% compliance with all existing consents

7.3 Regional Water Management Strategy

Environment Canterbury has embarked on a public engagement programme to develop a strategy for water management in the region over the next 18 to 20 months. This strategy will cover all water resources in the region.

Our Regional Water Management Strategy Initiatives(s):

All AEEP	SDC will proactively give input into the preparation of this strategy to protect existing and future water abstraction requirements for its community schemes and private systems.
All AEEP	SDC will demonstrate that future actions to develop and manage water supply consents and systems are consistent with its adopted sustainability principles

7.4 Irrigation schemes

Current irrigation scheme proposals are indicative of the continued demand by farmers to extend irrigation within Selwyn district. The proposed schemes are likely to come from river sources – noting that groundwater is fully allocated. The schemes will involve river abstraction and storage.

Our Irrigation Scheme Strategy Initiatives(s):

All AEEP	SDC will be vigilant in the early planning phases of irrigation schemes and seek to ensure there is adequate protection of its water supplies from adverse effects including declining water quality, significant changes to groundwater levels and adequate reservation of water allocation to provide for future community and private domestic use growth
---------------------------	---

7.5 Urban Development Strategy

The Greater Christchurch Urban Development strategy provides the basis for a collaborative approach to managing the pressures arising from growth. SDC is a partner to this strategy and has responsibilities to implement the Strategy.

The responsibilities include provision of water, wastewater and stormwater infrastructure to the communities within Selwyn District and covered by the study area

Our UDS Strategy Initiatives(s):

All	SDC will take account of all its UDS Five Waters obligations including those it has direct responsibility to lead, as it continues planning and implementing the sustainable development and operation of those communities within the Metropolitan Urban Limits.
All AEEP	SDC will control growth patterns via regional and district plans to protect its Five Waters. It will review costs and cost recovery to ensure users pay directly.

7.6 Supply security and emergency preparedness

Water supply is an essential service. The consequences of losing a water supply to a community can have catastrophic consequences. There are legislative requirements such as the Civil Defence Emergency Management (CDEM) Act 2002 that place obligations on SDC to protect the water quality and the continuity of supply to its customers.

The CDEM was provided to:

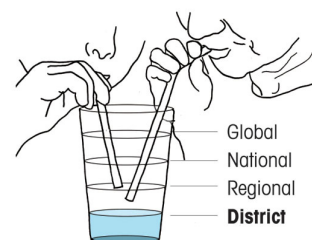
- improve and promote the sustainable management of hazards to contribute to well-being, the safety of the public and the protection of property
- encourage and enable communities to achieve acceptable levels of risk by applying risk management
- provide for planning and preparation for emergencies and response and recovery in the event of an emergency
- require local authorities to coordinate CDEM through regional groups
- encourage the coordination of emergency management across emergency sectors”

7.7 Our Emergency Preparedness Initiatives(s):

All	SDC will regularly participate in Lifelines processes
All	SDC will assess the consequences to the community if key components of water supply infrastructure were taken out of service
All	SDC will implement design standards and operational practices to minimise the risk of failing to deliver a safe continuous supply of water to communities
All	SDC will undertake Risk Management processes that comply with statutory requirements and in accordance with Council's Asset Management Policy
All AEEP	SDC will develop and implement an emergency response plan that outlines interdependencies with other service providers and responsibilities for restoration of supplies following hazard events
W WW WR	SDC will plan and provide new and upgraded water supply infrastructure to reduce the risks of interrupted or contaminated supply during hazard events

8. District Initiatives

District initiatives are those which generally provide specific local solutions to locally recognised issues. These reflect the values of the people and the environment they live in. The district has a diversity of environments but generally there are similar issues in across it. This is referred to as “communities of common interest”.



8.1 Community Outcomes

The Selwyn Community Plan 2006-2016 “LTCCP” contains the key Community Outcomes for each of the four well-beings. Many of these outcomes support or rely on management of the five waters.

- Air, land, water and general environment to be kept in a healthy condition
- A living environment where the rural theme of Selwyn is maintained
- Access to community and public health services
- Coordination of community/social services
- A safe living environment
- Educated Community
- Business-friendly environment
- Effective and accessible transport system
- An ability to experience cultural activities

In the revised AcMP, these outcomes have been linked directly with the four well-beings and the levels of service for each of the five waters. Integrated reporting against the contribution towards the achievement of the community outcomes and the four well-beings is included in the annual report.

The levels of service or service targets for each of the five waters are:

Water Supply

- Water is safe to drink
- The water look smells and tastes good
- There is enough water for my needs
- There is adequate Fire Fighting Supply in approved areas
- Problems are resolved promptly
- Council manages water supply service wisely

Wastewater (includes Stormwater and Land Drainage)

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

Our Community Outcomes Initiatives(s):

All	SDC will ensure Council Five Waters policies and practices comply with statutory and best practice requirements'
All	SDC will adopt a policy on the appropriate level of Asset Management and develop practices that deliver this policy

8.2 Kaitiakitanga, Tikanga

For Maori, linking the past, present and the future is an important concept of life. There is much value in learning from the past in planning for the future. Kaitiakitanga – safe guarding our future (guardianship) and Tikanga (protocols) are two powerful concepts embodied in Maori cultural.

Our Maori Initiatives(s):

All	SDC will seek to understand and exercise the principles of Kaitiakitanga so those who follow can enjoy what we enjoy today.
All	SDC will seek to establish the right Tikanga that will enable us to deliver water services in an integrated and sustainable way

8.3 Integration of community water supply schemes

There are currently 30 physically separate community water supply schemes within SDC. Many of these schemes service people who are within the same **Community of Interest**. Those schemes “level of service” expectations are likely to be the same.

Changes to water treatment and wastewater disposal standards, operational costs, as well as service requirements arising from community growth and the need for increased security of supply can mean that water sources, treatment plants and networks need to be reconfigured. Sometimes the complete or partial integration of schemes provides an optimal long term solution.

Our Integration Initiatives(s):

All	SDC will regularly review the optimal provision of its community water services and provide for these changes in the AcMP and Strategy
------------	---

8.4 Allocation limits

Groundwater allocation reports prepared in 2004 for ECan provide technical and policy information to guide decisions on applications for resource consents for groundwater in highly allocated groundwater zones – including Selwyn District. However there is currently no allocation, particularly in “red zones” for Community Drinking Water Supplies.

Our Allocation Initiatives(s):

All	SDC will seek to secure future community water allocation
------------	--

8.5 Water demand and demand management – including growth

Per capita water demand in Selwyn is high compared to other communities in New Zealand. Undoubtedly climate and free draining soils are contributing factors to high water use. Fully allocated water resources, community growth and increased operating costs will provide increased incentive to understand the reasons for this high demand and then to implement techniques to reduce it..

Our Water Demand Management Initiatives(s):

W WW WR	SDC will evaluate and implement appropriate demand management initiatives that contribute to future protection of water resources that are abstracted for supply to communities
W WW WR	Recycling and Reuse: SDC will undertake studies to understand the water use patterns in communities
All	Conservation: SDC will implement demand strategies and water loss reduction programmes with reference to the outcomes of these studies

8.6 Ageing Infrastructure

The water supply infrastructure is comprised of above ground and below ground assets. The extent, capacity, age and condition of these assets is summarised within the 5 Waters AcMP.

Replacement budgets are determined from current knowledge of assets and an understanding of their performance, criticality and their ability to deliver levels of service.

Our Ageing Infrastructure Initiatives(s):

All	SDC will undertake appropriate condition assessments of all services on a regular basis in accordance with Council's Asset Management Policy, and fund via depreciation or other methods for the services replacement
------------	--

8.7 Affordability and Pricing

Current water supply charges are based on cost recovery within those water supply schemes. Charging systems vary between schemes – some pay according to use and others pay fixed annual charges.

Our Affordability and Pricing Initiatives(s):

All	SDC will review charging mechanisms with a view to ensuring that the charges fund the annual operating costs and contribute to the depreciation or renewal costs of the service
All	SDC will regularly review funding mechanisms (including user-pays, development contributions, metering, trade waste bylaw and charging)

8.8 Tourism

Increased tourism in an area can have two significant impacts on water supply infrastructure:

- Increased demand on services without any supporting source of funding to provide the expanded services
- Elevated risk of transmitted waterborne disease into and out of the District – especially where tourists are in contact with untreated or partially treated water.

Our Tourism Initiatives(s):

<i>All</i>	SDC will seek additional funding needs for any water supply upgrade or new installation that has demands placed on it by tourism
<i>All</i>	SDC will provide adequately treated water to facilities that are utilised by tourists and connected to the water supply network

8.9 Unserved areas

The Local Government Act 2002 requires SDC to complete a Water and Sanitary Services Assessment that is reviewed from time to time. The first assessment was completed in 2005. Improvements have resulted from that work as below:.

Our Unserved Initiatives(s):

<i>All</i>	SDC will continue to investigate and deliver options for improving the knowledge and management of private supplies
<i>All</i>	SDC will participate in the Ministry of Health Technical Advisory Programme to assist private suppliers to understand and manage the risks to their systems
<i>All</i>	SDC will instigate a drinking water monitoring programme for those settlements not currently serviced by a council scheme

8.10 Standards - Stormwater and Land Drainage

Stormwater is managed locally in accordance with agreed LoS for flood, stream and contaminant management, potential for significant local use – refer to the AcMP.

Regionally and locally, low impact urban design including stormwater attenuation is being implemented, as it is becoming increasingly unacceptable to discharge stormwater directly to streams and rainwater drainage services. Integrated stormwater planning should be supported where required, with all treatment and disposal separated from Council wastewater and private wastewater services. This can be assisted by design standards.

Our Stormwater and Land Drainage Initiatives(s):

<i>All</i>	SDC will implement integrated stormwater planning where appropriate and in accordance with its sustainability principles.
<i>All</i>	SDC will apply low impact urban design principles in accordance with the District and Regional plan and local community consultation.

9. Monitoring and Reviewing the Strategy

This strategy will be developed and kept current with the objectives of the community in mind. It covers a range of issues across the five waters with updates will occurring at least every three years to match the Selwyn Community Plan and Activity Management Plan programme.

As community expectations and the context of the strategy change, the strategy will be reviewed in part or entirely. While setting framework for the future, the strategy needs to be flexible and adaptable to circumstances as they occur. Where substantial changes are required, broad consultation will be undertaken; while focused consultation is regarded as appropriate for specific changes.

Achievement towards the success of the Strategy will be monitored annually and reported in a summary format through the Annual Report.

REPORT

TO: Chief Executive
FOR: Council Meeting 23 July 2008
FROM: Asset Manager Utilities
DATE: 15 July 2008
SUBJECT: Five Waters Strategy – Draft for Public Consultation

1. RECOMMENDATION

That the Draft Five Waters Strategy be circulated for public consultation and invitation of feedback.

2. PURPOSE

- 2.1 The purpose of this report is to:
 - Explain the reasons for the proposed Five Waters Strategy and;
 - Gain Council approval to circulate the document for public consultation.
- 2.2 The Five Waters Strategy (the Strategy) defines a pathway to address important issues that will influence the sustainable management of the five waters services – predominantly community water, wastewater, land drainage, waterraces and stormwater services.
- 2.3 Outcomes from the Strategy will be used to define work activities in the Activity Management Plan (AcMP), which also incorporates the Water and Sanitary Services Assessment as previously agreed with Council.
- 2.4 Effectively the Strategy describes what needs to be done – not how to do it.

3. SIGNIFICANCE ASSESSMENT/COMPLIANCE STATEMENT

- 3.1 The final adoption of the Strategy will be an important decision for Council. The draft Strategy attached to this report is intended for further development through the consultation process and further workshops with Council.
- 3.2 The issues and decision in relation to the recommendation has been assessed against the Significance Policy and is regarded as having low significance at this point when considering the following:
 - Feedback from the Communities of Interest (CoI) and stakeholders will be obtained over an 8 week period and evaluated as part of the consultation process recommended in this report.
 - The final Strategy may initiate actions that have financial implications for Council but not until the specific work activities are identified within the AcMP for the 2009-19 Long Term Council Community Plan (LTCCP)
 - Future decisions on financial implications will be addressed through the LTCCP process and associated consultation.
 - This report is expected to generate a variety of different views within the community that will need to be addressed before finalising the Strategy.

4. HISTORY/BACKGROUND

- 4.1 The long term provision of community water supply, wastewater, stormwater, land drainage and water races the “Five Waters” is vitally important to the Selwyn District and a responsibility of Selwyn District Council. These are all identified as significant activities within the LTCCP.
- 4.2 Council has already acknowledged the importance of sustainability through the adoption of seven sustainability principles.
- 4.3 The value of water globally has driven a number of international, national, and regional initiatives that will have long term impacts on the management of water resources and water services within Selwyn District. These initiatives are identified in the proposed Strategy, and include:
- Increasing reliance and dependence of the national economy on natural capital – land, rivers, lakes;
 - Regional Council willingness to complete a Regional Water Strategy over the next 18 months (June 2008-December 2009);
 - The special role afforded to Maori through the Resource Management Act – water is a taonga (treasure);
 - Locally ever increasing competing demands placed on the water resource – communities must have their future needs protected in the essentially first-come-first served environment;
 - Actual and continuing predicted rapid future urban growth – challenging implementation and operation of sustainable urban and rural water systems.

5. PROPOSAL

The primary objective of this report is to present a draft Strategy and to seek Council approval for feedback through public consultation.

- 5.1 To plan for the long term actions, the Strategy assesses:
- initiatives from outside Selwyn District and
 - impacts on water services that are generated from activities within the District
- 5.2 The Strategy takes a high level perspective of issues, and is supported by the Local Government Act (s10) “four well beings” and underlying sustainability principles.
- 5.3 The proposed method of consultation and the development of the Strategy from this point is as follows:

Stage	Date
1	Draft Strategy is approved for consultation
2	Community and stakeholder comment sought and considered
3	Amended Strategy and comments from consultation discussed with Council
4	Final Strategy approved by Council for inclusion in AcMP (and LTCCP 2009-2019)
5	LTCCP 2009-2019 Community Consultation (includes AcMP)
6	LTCCP 2009-2019 adopted
7	Final Strategy and AcMP updated to match adopted LTCCP 2009-2019

- 5.4 Financial limitations, community affordability, the outcome of community consultation and progress with activities that are already committed will ultimately determine work programmes and expenditure.

6. OPTIONS

6.1 Three options are considered and a brief analysis is presented in Table 1:

Table 1 – Options Analysis

Option	Benefits	Disbenefits
4. Strategy not undertaken	<ul style="list-style-type: none"> No short term financial costs 	<ul style="list-style-type: none"> It is difficult for Council to demonstrate a sustainable development approach is being taken if issues are not being considered with a long term view (LGA sec 10) The approach to water services management is more reactive than proactive Regional Strategy and national directives drive District response Lack of coordinated strategic planning across the Five Waters AcMPs do not consider all strategic issues
5. Strategy Adopted	<ul style="list-style-type: none"> Present and future issues for Selwyn are highlighted and considered Strengthens District input into Regional Water Strategy and National Directives Provides sound strategic planning for township structure plans and informs District Development Strategy. 	<ul style="list-style-type: none"> Staff time and resources required Possible reprioritisation of works programmes Amendments to AcMP's subsequent to adoption of 2009-19 LTCCP
6. Strategy Delayed	<ul style="list-style-type: none"> Council adopts a 'wait and see' approach ("low risk approach") 	<ul style="list-style-type: none"> Council does not adequately seek and relay community water issues AcMPs do not consider all strategic issues Structure Plans do not consistently recognise base issues Regional Strategy drives District response

6.2 Option 2 "Strategy Adopted for Consultation is the recommended option as after receiving community and stakeholder feedback will provide the foundation for long term planning of the 5 Water Service

7. VIEWS OF THOSE AFFECTED/CONSULTATION

As a Strategy that assists Council establish a direction for the future, consultation with the community and stakeholders is essential. The consultation programme included in clause 5.3 identifies two opportunities for the views of those affected to be offered and considered:

- As part of specific consultation on this Strategy – the recommendation of this report
- As part of broader consultation with the LTCCP 2009-2019

8. RELEVANT POLICY/PLANS

8.1 Integrated Long-term Planning

Council does not have any legislative requirement to prepare this Strategy. However, given the significance of this issue and recognising clarity is needed to direct the principles of sustainable development, an integrated strategy for the five waters is prudent.

There is a range of planning documents with differing planning horizons. This strategy fulfils a gap which is driven by the need for a long term view of the five waters.

Planning Document	Planning Window
LTCCP – Committed Budgets	3 years
Community Outcomes	6 years
LTCCP	10 years
AcMP	10-20 years
Proposed Regional Water Strategy	20 years +
Greater Christchurch UDS	35 Years
Typical Resource Consents	35 Years
This Strategy	60 years

8.2 The need for an integrated planning approach that set direction for the future was identified in the 2005 Activity Management Plans and the need has become more urgent with recent developments in the District. Environment Canterbury intend to develop a Water Strategy over the next 18 months – Appendix A.

8.3 There are number of Greater Christchurch Urban development Strategy (UDS) Action Points that include future planning and management of water services issues. It is therefore important that Council are well positioned to take a lead in this process for the benefit of current and future generations of Selwyn District.

UDS Action	Lead Agency	UDS ref
Planning for Natural Hazards and Climate Change	UDS Implementation Committee	6.15.4
Reflect infrastructure costs to support growth within LTCCPs (identified as one of the top 20 actions in 2007)	UDS Implementation Committee	6.20.4
Align stormwater discharges and treatment with the operative NRRP	Selwyn District, and other Councils	6.21.4
Prepare cross-boundary Waste Water Strategy	Christchurch City	6.22.4.1
Develop cross-boundary Water Supply Strategy	Christchurch City	6.23.4.1
Develop protocol for cross-boundary water supply infrastructure management	Selwyn District	6.23.4.2
Develop Water Supply Technical Group for Partner Councils	Christchurch City	6.23.4.3

8.4 Other asset strategies that are relevant are listed below

Strategy	Status
Parks and Reserves	- to be prepared
Solid Waste	- to be prepared and amended following the Waste Minimisation Bill
Transportation	- CRETS released, walk/cycle developed

8.5 These strategies will inform a District Development Strategy to be prepared at a later date.

9. LEGAL IMPLICATIONS

9.1 There are no legal implications in relation to this report.

10. FUNDING IMPLICATIONS

10.1 Funding to support the community consultation exercise is provided under the AcMP process.

11. INPUT FROM OTHER DEPARTMENTS

- 11.1 This report and the Five Waters Strategy has been amended following input from the Corporate and Environmental Services groups.

H Blake-Manson
ASSET MANAGER UTILITIES

ENDORSED FOR AGENDA
R Anderson
ASSET DELIVERY MANAGER



<http://www.scoop.co.nz/stories/AK0805/S00269.htm>

Water Management Strategy for Canterbury

Tuesday, 27 May 2008, 5:11 pm

Press Release: Canterbury Mayoral Forum

Media Release

On Behalf of the Canterbury Mayoral Forum

27 May 2008

Water Management Strategy for Canterbury

A comprehensive public engagement programme with the Canterbury public to prepare a strategy for water management in the region has been announced.

The strategy will identify future directions for the region's water management including its agriculture, recreation and environmental aspects.

"Water management is almost certainly the biggest long-term issue facing the Canterbury region," says Bede O'Malley, chairman of the Steering Group charged by the Mayoral Forum with managing the development of the strategy.

"It is very much a renewable but limited resource and increasingly there are competing demands for it. We need a strategy that enables Environment Canterbury to allocate this resource in the best and widest interests of the region.

"There are many considerations. The benefits for the regional economy from agriculture and tourism are vital. The opportunity to generate energy from renewable water resources is also vitally important. A wide variety of recreational and environmental interests are connected in some way with water and, of course, quality of drinking water is paramount.

"Building a strategy that has wide buy-in will not be an easy task, but the alternative is win/lose conflicts fought out in communities and courts often with a result that pleases no one," says O'Malley.

Expected to take up to 18 months to complete, the strategy is intended to be a guide to water management in the region for at least the next 20 years. It will cover all major areas of usage across the whole region.

It will involve two stages of consultation, first about the uses and benefits of water involving both stakeholders and the public. Second, the focus will shift to specific projects and activities when, once again, there will be stakeholder and public consultation. There will also be a strong emphasis on local engagement right around the region.

Environment Canterbury Chairman, Sir Kerry Burke said that the strategy, once completed, will be considered by his Council for proposed introduction into the Canterbury Regional Policy Statement, the Natural Resources Regional Plan (NRRP) and ECan's Long Term Council Community Plan (LTCCP). "Indeed, it will need these statutory measures to confirm it, to give it the force of law and for any public funding to be committed to it," says Sir Kerry.

“Being a non-statutory process it will have the flexibility necessary to encourage positive interaction, even negotiation between the stakeholders. It must still face and pass the tests of the statutory machinery process,” says Burke. “This will be essential in order to have the strategy confirmed and have it locked in with the community’s support and backed by the law.”

Commenting on the proposal, chairman of the Mayoral Forum and Christchurch Mayor Bob Parker says that the regional mayors are under no illusions that this is an ambitious project.

“It’s ambitious, but absolutely necessary. It will require the goodwill of all involved to succeed. None of us wants to be in the situation of 20 years down the track with people saying if only our public officials had had greater foresight we would be in a much better position with water allocation and use.

“Now is the time to have foresight, and this strategy-building process is the way to do it, but we should have no illusions about the complexity of the task we are about to embark on.”

“It should also be noted that the world will not stop while this strategy is being developed. There are a number of water-related matters in public hearings or before the courts in the region and these should continue to their logical conclusion. Decisions made in these processes will become inputs to the strategy,” says Parker.

Some modern technology will be employed to deal with the complexity of the task. A method called Open Strategy is to be used. Developed in Canterbury, but largely employed in the UK over the last few years, Open Strategy is an online method of recording and sorting input into the strategy-forming process. It also enables inclusion of information from previous and current scientific studies of water use to ensure that the valuable work already done to date is not lost.

A range of communication techniques will also be used to ensure access of the stakeholders and the public to the evolving strategy and experience has been called upon from the recent and successful Greater Christchurch Urban Development Strategy programme involving Environment Canterbury and Councils.

“This will be a very open process. No one who has a contribution to make should be left out. We have also vetted the approach with a large number of people in the region and the general consensus is that it is well conceived, says O’Malley.

Stakeholder discussions begin in late June with the first round of public consultation beginning in August. A web site designed specially for the project will be launched in mid June. Also, at that time, an expanded membership of the Steering Group involving additional community representatives will be announced.

ENDS

A3.5 Levels of Service – Detailed Explanations

	Level of Service
1	<p>The community is provided with water services to a standard that protects their health and property</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Drinking water supplied is always safe to drink and sufficient water is available for essential needs, • Wastewater is removed effectively and disposed of safely without overflows causing flooding or contamination, • Stormwater is managed to minimise flooding, • Water races supply sufficient water for stock needs and do not cause flooding, and • Land drainage systems operate effectively. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Unsafe drinking water, or poor sanitation may cause serious illness or, in the worst case, death. Buildings without a safe water supply and adequate sanitary wastewater and stormwater drainage cannot be occupied. • Potential health consequences not only impact on those connected to Council water services, but also those using connected businesses, schools, and community facilities. • The lack of safe water supply and sanitation services may preclude the provision of schools, healthcare and other services for the wider community, and economically impact on business in the community. • Blockages and failures in drainage systems may cause flooding which can damage property and restrict use of roads and other amenities. Floodwaters may also carry contaminants hazardous to health. • Inadequate supply of stockwater places livestock at risk. • Ineffective land drainage may damage crops or result in lost productivity of land.
2	<p>Customers are provided and fairly charged for water services that meet their reasonable needs</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide adequate quantity, quality and reliability of services for reasonable needs. Such needs may change over time in response to lifestyle changes or resource availability constraints. • Provide for fire-fighting needs in designated zones. • Apply fair charges for the operation and maintenance of existing services and the provision of new or upgraded facilities. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Excessive or irresponsible use of the services by some sectors of the community may compromise service delivery to others, or unfairly burden others with additional costs to provide increased service capacity. • Excessive or unfair charges have adverse social and economic effects. • Insufficient charges may prevent the continued provision of the required level of service or place an unfair cost burden on future generations. • Unfair charging systems would see some sectors of the community paying a disproportionate amount for services relative to others.
3	<p>Nuisance effects of water services are minimised</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Drinking water quality, water pressure and reliability of supply is acceptable to consumers, • Disruption to services are minimised, and • Infrastructure does not create problems or cause inconvenience. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • While safe to drink, water may be discoloured, have an undesirable taste or odour, stain laundry or sanitary fittings, result in limescale buildup, or reduce lathering of soap. Low water pressure may affect showering, garden watering, and car washing. • Service disruptions are inconvenient for household customers, but may adversely impact business/farming operations. • Minor surface flooding may not cause damage but can be an inconvenience, preventing normal use of land and amenities. • Poorly design, operated or located infrastructure may cause noise, odour, visual or other impacts, for example a noisy pump station adjacent to residential properties.

4	<p>Water services are provided in a cost effective manner</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Spend money on water services effectively and wisely by managing and operating the water services to get the most out of the assets and implementing work programmes that reflect community priorities. • Identify and manage external factors that may impact on the future cost of service provision. • Consider 'whole-of-life' costs and apportion capital costs equitably over time. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Poor planning, management and operation of water services will result in additional costs to the customer, or inability to provide the desired level of service within an agreed budget. • The current community may carry an unfair share of capital works costs. • Deferral of expenditure may place an unfair cost burden on future generations.
5	<p>Problems with water services are addressed in a timely manner and prioritised according to risk and need</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Respond to service problems and address customer complaints in a timely manner. • Give priority to resolving service deficiencies that have greatest impact on the community, eg where the consequences are most severe or widespread. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Poor customer satisfaction. • Adverse effects on public health, damage to property, economic loss, environmental damage.
6	<p>Service capacity is provided to accommodate growing communities, where this growth is sustainable</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide water services in response to the needs of changing and growing communities without compromising existing levels of service for existing communities. • Plan for and develop additional service capacity in appropriate locations in a timely manner where growth is sustainable. • Limit infrastructure development as may be necessary to constrain growth to sustainable levels. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Declining service standards (eg more frequent water restrictions) for existing customers if additional demand exceeds service capacity. • Constrained economic development through lack of essential services. • Long-term adverse effects (social, cultural, economic, and environmental) arising from unsustainable development facilitated through inappropriate provision of services.

7	<p>Adverse effects of water services on cultural and heritage values are minimised</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Provide water services without compromising cultural and heritage values associated with the water, the water services infrastructure or the District as a whole. • Provide water services to facilitate protection of, and access to, cultural and heritage sites and facilities. • Recognise that water has particular cultural significance for Maori. Maori belief is that water and all resources have Mauri, a life force. Te Taumutu Runanga have prepared a Natural Resource Management Plan that explains the values that the local resources hold for them. • Recognise that the existing water services infrastructure have cultural or heritage value that contributes to the character of Selwyn District. Settlers from the 1840's onwards found the district mainly flax swamp with light tussock on the higher lands. In order to bring the swamps into production a system of drains were installed. The country became highly productive and thriving local communities were established. Water races constructed to enable productivity in dryland areas have parallels. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Loss or degradation of sites, artefacts, structures, waterways, landscape features and other values of cultural and heritage importance. • Changes to Selwyn District's rural character, particularly through loss of small rural communities founded on the basis of water services. The Community Plan recognises the importance of the rural theme of Selwyn District. • Degradation of the Mauri of land, water or the sea by reduction of its capacity to support traditional uses and values. The values of Maori are considered to be a matter of national importance.
8	<p>Adverse effects of water services on the environment are minimised.</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Avoid, remedy, or mitigate adverse effects of the water services on the environment (as required by the Resource Management Act). The 5Waters activity is strongly connected to the environment. It relies on the ability to take water from the environment for domestic, stock and irrigation purposes. It discharges wastewater back to the environment, and manages water (land drainage and stormwater) within the environment. • Take into consideration how the provision of water services may facilitate land use activities, such as agriculture, residential development and industry that have their own environmental impacts. • Ensure that the community is aware of how their actions may contribute to adverse environmental effects, eg disposal of pollutants to stormwater drains, or excessive water use. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Severe, long-term impacts not only on the environment, but also on the social, cultural and economic wellbeing of Selwyn District. • Depletion of water resources leading to unreliable water supply systems that may make living, working and doing business in the District difficult or undesirable. • Degradation of water quality, having impacts on land and water bodies and their associated habitats and ecosystems. This can also have public health consequences, compromise recreational use of water (eg swimming, fishing, kayaking, beaches), and degrade cultural values associated with water, eg Te Waihora as a food source. • Loss of habitats and biodiversity in the District, including naturalised water races and land drainage channels. • Significant costs to mitigate adverse impacts, or to provide new water sources or additional treatment processes if potential water sources are depleted or degraded.

9	<p>Greenhouse gas emissions from the provision of water services are minimised.</p> <p>GOAL: To ensure that:</p> <ul style="list-style-type: none"> • Minimise potential climate change impacts arising through emission of greenhouse gases. • Reduce electricity use to achieve energy costs savings and reduce Council's carbon footprint. The 5Waters activity accounts for approximately half of SDC's annual power consumption. • Reduce greenhouse gas emissions from the use of liquid fossil fuels (ie petrol and diesel) through improved management and utilisation of technology. <p>ADVERSE CONSEQUENCES: If we fail to achieve:</p> <ul style="list-style-type: none"> • Contribute to climate change impacts resulting from global greenhouse gas emissions on a global level. These impacts will have adverse social, economic and environmental consequences on a global scale as well as for Selwyn District. • Fail to meet Council's obligation to address this issue through supporting New Zealand's move to meet Kyoto obligations. • Be poorly placed to operate in a carbon trading environment and be subject to additional taxation that will increase the cost of providing water services.
---	--

A3.6 Sustainability Principles and Relationship to Levels of Service

Sustainability Principles	Relationship with Level of Service
1 Make decisions based on the four aspects of well-being	<p>1 The community is provided with water services to a standard that protects their health (<i>social well-being</i>) and property (<i>economic well-being</i>)</p> <p>2 Customers are provided (<i>social</i>) and fairly charged (<i>economic</i>) for water services that meet their reasonable needs</p> <p>3 Nuisance effects of water services are minimised (<i>social and economic</i>)</p> <p>4 Water services are provided in a cost effective manner (<i>economic</i>)</p> <p>5 Problems with water services are addressed in a timely manner and prioritised according to risk and need (<i>social, economic, environmental</i>)</p> <p>6 Service capacity is provided to accommodate growing communities, where this growth is sustainable (<i>social, economic, cultural, and environmental</i>)</p> <p>7 Adverse effects of water services on cultural and heritage values are minimised (<i>cultural</i>)</p> <p>8 Adverse effects of water services on the environment are minimised (<i>environment</i>)</p> <p>9 Greenhouse gas emissions from the provision of water services are minimised (<i>environment</i>)</p>
2 Observe the Precautionary Principle to provide contingency and enable adaptability of our community	<p>9 Greenhouse gas emissions from the provision of water services are minimised – <i>In the absence of a detailed understanding of climate change SDC is acting on the best infoResource Management Action available</i></p>
3 Seek “intra-generational” and “inter-generational” equity	<p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>Fair charging systems promote equity for all. Both current and future needs and demands on resources will be taken into account in ascertaining what reasonable needs actually are.</i></p> <p>6 Service capacity is provided to accommodate growing communities, where this growth is sustainable – <i>Growth will be restricted where additional service capacity cannot be provided so as not to adversely impact on services provided to existing consumers, or leave a legacy of unsustainable development for future generations. Additional service capacity will be provided, where possible, to meet the needs of future generations without imposing a burden on current consumers.</i></p>
4 Internalise environmental and social costs	<p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>Fair charging systems will recognise associated environmental and social costs and ensure that these costs are not deferred to future generations.</i></p>
5 Foster community welfare	<p>1 The community is provided with water services to a standard that protects their health and property – <i>strong communities require a safe water supply and drainage system</i></p> <p>2 Customers are provided and fairly charged for water services that meet their reasonable needs – <i>5 Waters services provide for community needs</i></p> <p>3 Nuisance effects of water services are minimised – <i>The wellbeing of a community can be adversely affected by the 5 Waters services if not well managed</i></p> <p>7 Adverse effects of water services on cultural and heritage values are minimised – <i>culture and heritage are elements of community capital that are to be promoted</i></p>
6 Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems	<p>8 Adverse effects of water services on the environment are minimised – <i>Minimising adverse effects and seeking to achieve positive environmental outcomes will promote biodiversity and ecosystem protection.</i></p>

Sustainability Principles	Relationship with Level of Service
7 Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes	<p>7 Adverse effects of water services on cultural and heritage values are minimised – <i>Cultural values cross District boundaries and local efforts can contribute to sustainability on a regional/national level</i></p> <p>8 Adverse effects of water services on the environment are minimised – <i>The environment is wider than Selwyn District and local environmental efforts can contribute to sustainability on a regional/national level.</i></p> <p>9 Greenhouse gas emissions from the provision of water services are minimised – <i>Climate change associated with greenhouse gas emissions is a global issue that SDC cannot address in isolation, but can contribute to wider efforts in this area.</i></p>

A3.7 Pre-Prioritisation

Pre-prioritisation steps i.- iv.

Level of Service Assessment						
LoS Description:	Weighting:	Performance Measure:	Performance Level		iv	
			Current:	Resultant:		
1 The community is provided with water services to a standard that protects their health and property	0.19	1.2 DWSN 2 compliance for water in distribution zone	2	4	0.38	
2 Customers are provided and fairly charged for water services that meet their reasonable needs (quantity)	0.15		0	0	0.00	
3 Nuisance effects of water services are minimised	0.07	1.1 Frequency of unplanned interruptions	1	4	0.21	
4 Water services are provided in a cost effective manner	0.15	1.2 Unplanned maintenance costs as a proportion of total O&M costs	1	3	0.30	
5 Problems with water services are addressed in a timely manner and prioritised according to risk and need	0.14	1. Frequency and Average duration of unplanned service interruption	1	4	0.42	
6 Service capacity is provided to accommodate growing communities, where this growth is sustainable	0.15		0	0	0.00	
7 Adverse effects of water services on cultural and heritage values (including indigenous and local/regional) are minimised	0.03		0	0	0	
8 Adverse effects of water services on the environment are minimised	0.07	1 Receiving water quality	1	3	0.14	
9 Greenhouse gas emissions from the provision of water services are minimised	0.05	1.1 Scope 1 and Scope 2 GHG Emissions	1	3	0.1	
Sub Total:					1.55	
Exposure:					5	
Total:					7.75	

Manual Override: ☐ 1

Reason for Manual Override:

A3.8 Example of Alpine Community Of Interest Prioritised Projects

Community of Interest: **Alpine**

Utility: Wastewater													
Scheme:		Castle Hill wastewater						Year					
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Level of Service)													
630	Prepare Replacement Schedule for Pipes in Poor Condition	5	0	2000	0	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			0	2000	0	0	0	0	0	0	0	0	0
Projects													
429	Castle Hill Wastewater Disposal Resource Consent Renewal	7	8000	0	0	0	0	0	0	0	0	0	0
629	CCTV survey of wastewater reticulation	5	10000	0	0	0	0	0	0	0	0	0	0
Projects Subtotal:			18000	0	0	0	0	0	0	0	0	0	0
Castle Hill wastewater Scheme Total:			18000	2000	0	0	0	0	0	0	0	0	0

Scheme:		Lake Coleridge wastewater						Year					
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Level of Service)													
631	Prepare Replacement Schedule for Pipes in Poor Condition	5	0	1500	0	0	0	0	0	0	0	0	0
245	Install Lake Coleridge UV Control System	5	0	0	10000	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			0	1500	10000	0	0	0	0	0	0	0	0
Projects													
247	Prepare Lake Coleridge STP Communication Plan	6	5000	0	0	0	0	0	0	0	0	0	0
246	Prepare Lake Coleridge STP Emergency Plan	6	5000	0	0	0	0	0	0	0	0	0	0
Projects Subtotal:			10000	0	0	0	0	0	0	0	0	0	0
Lake Coleridge wastewater Scheme Total:			10000	1500	10000	0	0	0	0	0	0	0	0

Wastewater Utility Total:			28000	3500	10000	0	0	0	0	0	0	0	0
---------------------------	--	--	-------	------	-------	---	---	---	---	---	---	---	---

Utility: Water													
Scheme:		Arthurs Pass water supply						Year					
IN	Project_Name	Score	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	2019 +
Capital (Growth)													
426	Assess Tourist Demand Growth and Capital Works Upgrade Strategy	7	2000	0	0	0	0	0	0	0	0	0	0
Capital (Growth) Subtotal:			2000	0	0	0	0	0	0	0	0	0	0
Capital (Level of Service)													
482	Fire Tank Reservoirs		25000	0	0	0	0	0	0	0	0	0	0
Capital (Level of Service) Subtotal:			25000	0	0	0	0	0	0	0	0	0	0
Projects													
636	Review Public Health Risk Management Plan for Arthurs Pass	13	0	0	2500	0	0	0	0	0	0	0	0
524	Undertake Catchment Sanitary Survey at Arthurs Pass	6	0	0	2500	0	0	0	0	0	0	0	0
553	Review Protocol Treatment Requirements and Capabilities for Arthurs Pass	6	0	0	2500	0	0	0	0	0	0	0	0
264	Investigate WTP Shut-Down on Power Failure	6	0	0	1000	0	0	0	0	0	0	0	0
263	Review Seismic Restraint	5	0	0	2500	0	0	0	0	0	0	0	0
578	Review of Backflow risk management for Arthurs Pass	4	2000	0	0	0	0	0	0	0	0	0	0