

## Sewerage & Stormwater

### Goal

To protect the health of the district's residents and environment by providing an efficient and effective means of collecting, treating and disposing of sewage effluent and stormwater.

### What we do

The Council operates and maintains one sewerage reticulation and treatment scheme in the Kaikoura Township. The sewerage system involves the collection of wastewater from individual properties, treating that wastewater to suitable standards, and discharging the treated wastewater back into the environment.

The stormwater system involves receiving excess surface water run-off from streets, parks and buildings, and disposing of that excess water ultimately to the sea and to land.

### Why we do it

Council has a social obligation to provide sanitary works: to protect the health of the community through good sanitary practice, to protect property from flood damage, to support the development of the district, and to manage the environment in a sustainable manner.

### Effects on the Community

|                      |   |  |
|----------------------|---|--|
| <b>Economic</b>      | ☺ | Safe and sanitary wastewater treatment and disposal systems are critical for any community to function   |
| <b>Environmental</b> | ☺ | An efficient sewage treatment and disposal system ensures that what is returned to the environment is not harmful. Stormwater protects individual properties as well as harbour, waterways, and the surrounding environment. |
| <b>Social</b>        | ☺ | Safe and sanitary wastewater treatment is fundamental to the health and safety of the whole community.   |
| <b>Cultural</b>      | ☺ | These systems ensure the efficient disposal of offensive matter.   |

## Sewerage

The system comprises of approximately 46km of reticulation, 11 pump stations and a treatment and disposal system. The treatment and disposal system consist of a partially aerated lagoon followed by an effluent pump station and infiltration beds which provides additional treatment prior to discharge to ground.

Most of the facilities comprising the sewerage system with the exception of the effluent disposal system were constructed approximately 25 years ago. The effluent disposal system was constructed in June 2005 after the old system began to malfunction. At present KDC sewerage system is dedicated to the properties within the urban area, including Ocean Ridge, with 1,805 lots having access while approximately 1,295 lots are actually connected to the system. The discharge from each lot is approximately 1.3m<sup>3</sup> /day while on average over half a million cubic meters of sewage is discharged annually.

Since 2002 there has been significant upgrading of all the pumping stations, the installation of an aerator at the ponds, and extension of the reticulation to accommodate future demand. Operational capacity at the treatment plant was upgraded and can now accommodate flows of 5000 population equivalent. This facility is planned to be extended in year 2009 to accommodate a population of 10,000 which will serve the projected demand to 2031 and beyond.

In 2008 a CCTV survey of the entire network was commissioned, the results of the survey will be used to predict future renewals for the reticulation system rather than relying on the age of the system, as well as direct maintenance strategies for the system.

### Major Projects in the next three years:

| Capital Projects               | Cost        | Funded by   |
|--------------------------------|-------------|---|
| 2 <sup>nd</sup> Aerator Lagoon | \$325,000   | Development Contributions and Reserves                |
| Main Line                      | \$1,143,000 | Development Contributions, Subsidy, Loan and Reserves |
| Renewals                       | \$1,106,800 | Sewerage Rates and Loan                               |

The closed circuit TV project has so far highlighted a number of areas where the sewerage pipelines require urgent replacement. The ten year capital projects are outlined in the forecast cost of service statements.

### Council Assets and How They Will Be Managed

The sewerage infrastructure is currently valued at over \$10m. Fulton Hogan is responsible for the day-to-day maintenance of the system and reticulation, our in-house engineers oversee this work, and Aurecon Ltd provides professional consultancy services for extraordinary work. The system has a comprehensive asset management plan in place.

### Significant Potential Negative Effects

The purpose of providing sewerage systems is arguably to eliminate significant negative effects – should this infrastructure not exist, the public health of residents would be at risk – however this activity does create its own negative effects, mainly in odour nuisances and the characteristics of effluent at treatment facilities.

### Community Outcomes

The sewerage activity contributes to:

- Sustainable Development
- Quality Water & Wastewater Services
- A Quality Standard of Housing
- Environmental Protection & Enhancement

For an understanding of how this activity contributes to these outcomes, please see pages 110 to 113.

### How is it Funded?

#### Operating Expenses Funded by:

- Sewerage Charges
- Sewer Loan Rates
- User Fees & Charges
- Subsidies

#### Capital Expenses Funded by:

- Sewerage Charges
- Sewer Loan Rates
- Loan
- Development Contributions
- Reserves
- Subsidies

The Ministry of Tourism in 2006 approved approximately NZ\$1.6 Million dollars as a subsidy towards the implementation of the proposed upgrading works. To date approximately 53% of this fund has been spent with the remaining 47% to supplement the cost to be incurred for the future works.

The remaining cost of works to be incurred by Council is hoped to be funded by developmental contributions. This has significantly reduced the need to raise loans; however Council has made provision to raise \$200,000 in 2009/10, \$300,000 in 2010/11 and \$525,000 in 2012.

### Levels of Service

|   | Base Line | 2009/10 Target | 2010/11 Target | 2011/12 Target | 10 Year Target |
|---|-----------|----------------|----------------|----------------|----------------|
| Levels of dissolved oxygen exceed 2mg/l at the Oxidation Pond <sup>1</sup>                                    | 80%       | 90%            | 90%            | 90%            | 100%           |
| Nitrogen levels at the Oxidation Pond are less than 10mg/l <sup>2</sup>                                       | 100%      | 100%           | 100%           | 100%           | 100%           |
| Alarms, overflows and breaches of consent conditions are responded to within 1 hour of reporting or detection | 100%      | 100%           | 100%           | 100%           | 100%           |

By developing a second aerator lagoon in 2009/10, there will be an increase in the efficiency of the oxidation pond, meaning an increase in the levels of dissolved oxygen.

<sup>1</sup> The pond is designed to operate in an aerobic environment meaning it needs oxygen for the bacterial activities to occur. If the concentration of oxygen falls below 2mg/l it means the pond activity is not optimal and the efficiency of the pond has reduced.

<sup>2</sup> Excess nitrogen can mean the pond becomes overly rich in nutrients, enabling algae and bacteria to grow rapidly and deplete the oxygen supply

## Stormwater

The stormwater system predominantly protects the Kaikoura Township, including Ocean Ridge, and comprises of approximately 17km of reticulation system that discharges to land, sea and other water courses.

Much of the Kaikoura stormwater system was constructed within the last 16 years as part of private subdivision and handed over to Council on completion. The system is comprised of a number of small piped and open drain networks most of which discharges to sea or to Lyell Creek. Certain areas of the township do not have stormwater reticulation other than that provided by kerb and channel on the roads; swales such as those found in the Seaview and Ocean Ridge subdivisions; and large drains such as Phairs Drain and Sullivans Gully.

Since the last significant flood event of Christmas Eve 1993, in which the Kowhai River burst its banks and entered the township, there has been two flooding events – both of which occurred in 2008. The first event of July 2008 saw a number of properties flooded however fewer properties were affected by the August 2008 event. The reason for the fewer properties being flooded was attributed to ensuring the grates of the sumps were free from debris deposited by the rain.

Separate and apart from the incidence of flooding there has been complaints of litter in the stormwater system located around the Kaikoura High and St. Josephs Primary Schools. This is one area that will require further attention especially during the wet season when drains are required to be free flowing.

### Major Projects in the next three years:

| Capital Projects        | Cost      | Funded by        |
|-------------------------|-----------|------------------|
| New Pipe Infrastructure | \$234,000 | Loan             |
| Renewals                | \$36,000  | Stormwater Rates |

New infrastructure is required to accommodate a one-in-five year flood event for Deal St, Ramsgate St and Sullivan's Gully, and to accommodate a one-in-fifty year event for Whitby Pl, Killarney St, Avoca St and the Churchill St/Deal St intersection. The ten year capital projects are outlined in the forecast cost of service statements.

### Council Assets and How They Will Be Managed

The stormwater system is currently valued at just under \$4m. Fulton Hogan is responsible for the day-to-day maintenance of the system, our in-house engineers oversee this work, and Aurecon Ltd provides professional consultancy services for extraordinary work. The system has a comprehensive asset management plan in place.

### Significant Potential Negative Effects

The stormwater system is there to protect property and the environment from flooding, however overflowing of stormwater systems in storm events results in infiltration to the sewerage system, and discharge of contaminated runoff from roads into coastal waters.

### Community Outcomes

Stormwater contributes to:

- Sustainable Development
- Quality Water & Wastewater Services
- A Quality Standard of Housing
- Environmental Protection & Enhancement

For an understanding of how this activity contributes to these outcomes, please see pages 110 to 113.

### How is it Funded?

**Operating Expenses Funded by:**

Stormwater Rate

**Capital Expenses Funded by:**

Stormwater Rate

Loan

Development Contributions

Reserves

The stormwater rate is a targeted rate applied to all properties within the urban area, regardless of whether or not individual properties actually have stormwater services at their boundary. This is because Council considers that the stormwater system protects the entire township from serious flooding and enables the urban community and the local economy to continue to function during periods of heavy rain.

A loan of \$224,000 will be raised in 2009/10 to fund the development of new pipe infrastructure in the urban area.

### Levels of Service

|  | Base Line       | 2009/10 Target | 2010/11 Target | 2011/12 Target | 10 Year Target |
|--|-----------------|----------------|----------------|----------------|----------------|
| The system complies with the conditions of its resource consents   | 90%             | 100%           | 100%           | 100%           | 100%           |
| System should accommodate 2 yr and 5 yr flood event without and with surcharge respectively <sup>3</sup> | 67% (two year)  | 100%           | 100%           | 100%           | 100%           |
|  | 91% (five year) | 100%           | 100%           | 100%           | 100%           |

This represents an increase in the level of service for stormwater, and will be achieved by developing new pipe infrastructure within parts of the urban area.

<sup>3</sup> Surcharge refers to the capacity of the system – so accommodating a 2 year flood event without surcharge means the system has capacity to spare, but accommodating a 5 year flood event with surcharge means the system is at full capacity (but not compromised).

**Performance Measures to assess progress towards achievement of Community Outcomes**

| Community Outcome   | How the Sewerage & Stormwater Activity Contributes   | Performance Measure  | Target  |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
|---|--|--|---|----------|------------|----------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|
| <p><b>Sustainable Development</b></p>                                     | <p>Provide and plan for good quality, cost efficient infrastructure, facilities, amenities and services that meet the needs of the community now and into the future.</p>  | <p>Percentage of residents surveyed who are satisfied with sewerage services</p> | <table border="1"> <caption>Percentage of Residents Satisfied with Sewerage Services</caption> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Baseline</td><td>80%</td></tr> <tr><td>2009/10</td><td>80%</td></tr> <tr><td>2010/11</td><td>80%</td></tr> <tr><td>2011/12</td><td>80%</td></tr> <tr><td>2012/13</td><td>80%</td></tr> <tr><td>2013/14</td><td>80%</td></tr> <tr><td>2014/15</td><td>80%</td></tr> <tr><td>2015/16</td><td>80%</td></tr> <tr><td>2016/17</td><td>80%</td></tr> <tr><td>2017/18</td><td>80%</td></tr> <tr><td>2018/19</td><td>80%</td></tr> </tbody> </table> | Year     | Percentage | Baseline | 80% | 2009/10 | 80% | 2010/11 | 80% | 2011/12 | 80% | 2012/13 | 80% | 2013/14 | 80% | 2014/15 | 80% | 2015/16 | 80% | 2016/17 | 80% | 2017/18 | 80% | 2018/19 | 80% |
|   |  | Year   | Percentage  |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| Baseline  | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2009/10   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2010/11   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2011/12   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2012/13   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2013/14   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2014/15   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2015/16   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2016/17   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2017/18   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2018/19   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| <p>Percentage of residents surveyed who are satisfied with stormwater</p> | <table border="1"> <caption>Percentage of Residents Satisfied with Stormwater</caption> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Baseline</td><td>60%</td></tr> <tr><td>2009/10</td><td>70%</td></tr> <tr><td>2010/11</td><td>80%</td></tr> <tr><td>2011/12</td><td>80%</td></tr> <tr><td>2012/13</td><td>80%</td></tr> <tr><td>2013/14</td><td>80%</td></tr> <tr><td>2014/15</td><td>80%</td></tr> <tr><td>2015/16</td><td>80%</td></tr> <tr><td>2016/17</td><td>80%</td></tr> <tr><td>2017/18</td><td>80%</td></tr> <tr><td>2018/19</td><td>80%</td></tr> </tbody> </table> | Year   | Percentage  | Baseline | 60%        | 2009/10  | 70% | 2010/11 | 80% | 2011/12 | 80% | 2012/13 | 80% | 2013/14 | 80% | 2014/15 | 80% | 2015/16 | 80% | 2016/17 | 80% | 2017/18 | 80% | 2018/19 | 80% |         |     |
| Year  | Percentage   |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| Baseline  | 60%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2009/10   | 70%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2010/11   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2011/12   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2012/13   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2013/14   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2014/15   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2015/16   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2016/17   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2017/18   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2018/19   | 80%  |  |   |          |            |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |

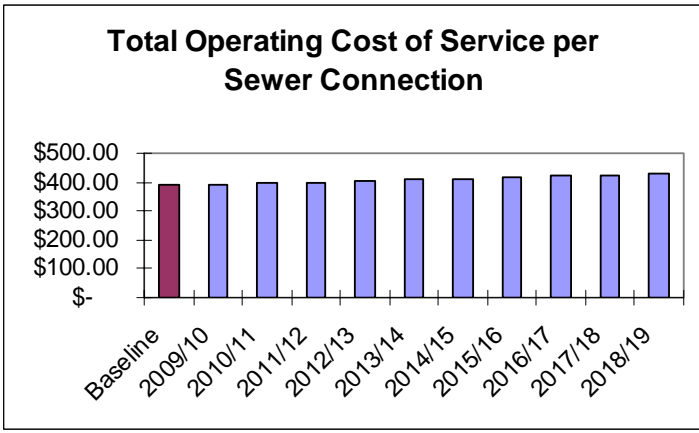
**Performance Measures to assess progress towards achievement of Community Outcomes**

| Community Outcome  | How the Sewerage & Stormwater Activity Contributes  | Performance Measure  | Target  |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
|--|---|--|---|----------|------------|----------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|
| <p><b>Quality Water &amp; Wastewater Services</b></p>                | <p>Ensure that sewage is collected, treated and disposed of efficiently and appropriately to protect the health and safety of our community.</p>  | <p>Levels of dissolved oxygen at the oxidation pond exceed 2mg/l</p> | <p><b>Oxidation Pond Samples show Levels of Dissolved Oxygen exceed 2mg/l</b></p> <table border="1"> <caption>Oxidation Pond Samples show Levels of Dissolved Oxygen exceed 2mg/l</caption> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Baseline</td><td>80%</td></tr> <tr><td>2009/10</td><td>90%</td></tr> <tr><td>2010/11</td><td>100%</td></tr> <tr><td>2011/12</td><td>100%</td></tr> <tr><td>2012/13</td><td>100%</td></tr> <tr><td>2013/14</td><td>100%</td></tr> <tr><td>2014/15</td><td>100%</td></tr> <tr><td>2015/16</td><td>100%</td></tr> <tr><td>2016/17</td><td>100%</td></tr> <tr><td>2017/18</td><td>100%</td></tr> <tr><td>2018/19</td><td>100%</td></tr> </tbody> </table> | Year     | Percentage | Baseline | 80%  | 2009/10 | 90%  | 2010/11 | 100% | 2011/12 | 100% | 2012/13 | 100% | 2013/14 | 100% | 2014/15 | 100% | 2015/16 | 100% | 2016/17 | 100% | 2017/18 | 100% | 2018/19 | 100% |
|  |   | Year   | Percentage  |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| Baseline   | 80%   |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2009/10  | 90%   |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2010/11  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2011/12  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2012/13  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2013/14  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2014/15  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2015/16  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2016/17  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2017/18  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2018/19  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| <p>Levels of nitrogen at the oxidation pond are less than 10mg/l</p> | <p><b>Oxidation Pond Samples show Levels of Nitrogen are less than 10mg/l</b></p> <table border="1"> <caption>Oxidation Pond Samples show Levels of Nitrogen are less than 10mg/l</caption> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Baseline</td><td>100%</td></tr> <tr><td>2009/10</td><td>100%</td></tr> <tr><td>2010/11</td><td>100%</td></tr> <tr><td>2011/12</td><td>100%</td></tr> <tr><td>2012/13</td><td>100%</td></tr> <tr><td>2013/14</td><td>100%</td></tr> <tr><td>2014/15</td><td>100%</td></tr> <tr><td>2015/16</td><td>100%</td></tr> <tr><td>2016/17</td><td>100%</td></tr> <tr><td>2017/18</td><td>100%</td></tr> <tr><td>2018/19</td><td>100%</td></tr> </tbody> </table> | Year   | Percentage  | Baseline | 100%       | 2009/10  | 100% | 2010/11 | 100% | 2011/12 | 100% | 2012/13 | 100% | 2013/14 | 100% | 2014/15 | 100% | 2015/16 | 100% | 2016/17 | 100% | 2017/18 | 100% | 2018/19 | 100% |         |      |
| Year   | Percentage  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| Baseline   | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2009/10  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2010/11  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2011/12  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2012/13  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2013/14  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2014/15  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2015/16  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2016/17  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2017/18  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2018/19  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |

**Performance Measures to assess progress towards achievement of Community Outcomes**

| Community Outcome  | How the Sewerage & Stormwater Activity Contributes  | Performance Measure  | Target  |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
|--|---|--|---|----------|------------|----------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|
| <p><b>Quality Water &amp; Wastewater Services</b></p>                          | <p>Improve stormwater capacity to protect property in the event of flooding, and ensure that access throughout the district is maintained in such event.</p>  | <p>System should accommodate a one-in-two year flood event without surcharge</p> | <p><b>Percentage of Stormwater that can accommodate a 2yr Flood (Without Surcharge)</b></p> <table border="1"> <caption>Percentage of Stormwater that can accommodate a 2yr Flood (Without Surcharge)</caption> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Baseline</td> <td>65%</td> </tr> <tr> <td>2009/10</td> <td>100%</td> </tr> <tr> <td>2010/11</td> <td>100%</td> </tr> <tr> <td>2011/12</td> <td>100%</td> </tr> <tr> <td>2012/13</td> <td>100%</td> </tr> <tr> <td>2013/14</td> <td>100%</td> </tr> <tr> <td>2014/15</td> <td>100%</td> </tr> <tr> <td>2015/16</td> <td>100%</td> </tr> <tr> <td>2016/17</td> <td>100%</td> </tr> <tr> <td>2017/18</td> <td>100%</td> </tr> <tr> <td>2018/19</td> <td>100%</td> </tr> </tbody> </table> | Year     | Percentage | Baseline | 65%  | 2009/10 | 100% | 2010/11 | 100% | 2011/12 | 100% | 2012/13 | 100% | 2013/14 | 100% | 2014/15 | 100% | 2015/16 | 100% | 2016/17 | 100% | 2017/18 | 100% | 2018/19 | 100% |
|  |   | Year   | Percentage  |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| Baseline   | 65%   |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2009/10  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2010/11  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2011/12  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2012/13  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2013/14  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2014/15  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2015/16  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2016/17  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2017/18  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2018/19  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| <p>System should accommodate a one-in-five year flood event with surcharge</p> | <p><b>Percentage of Stormwater that can accommodate a 5yr Flood (With Surcharge)</b></p> <table border="1"> <caption>Percentage of Stormwater that can accommodate a 5yr Flood (With Surcharge)</caption> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Baseline</td> <td>90%</td> </tr> <tr> <td>2009/10</td> <td>100%</td> </tr> <tr> <td>2010/11</td> <td>100%</td> </tr> <tr> <td>2011/12</td> <td>100%</td> </tr> <tr> <td>2012/13</td> <td>100%</td> </tr> <tr> <td>2013/14</td> <td>100%</td> </tr> <tr> <td>2014/15</td> <td>100%</td> </tr> <tr> <td>2015/16</td> <td>100%</td> </tr> <tr> <td>2016/17</td> <td>100%</td> </tr> <tr> <td>2017/18</td> <td>100%</td> </tr> <tr> <td>2018/19</td> <td>100%</td> </tr> </tbody> </table> | Year   | Percentage  | Baseline | 90%        | 2009/10  | 100% | 2010/11 | 100% | 2011/12 | 100% | 2012/13 | 100% | 2013/14 | 100% | 2014/15 | 100% | 2015/16 | 100% | 2016/17 | 100% | 2017/18 | 100% | 2018/19 | 100% |         |      |
| Year   | Percentage  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| Baseline   | 90%   |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2009/10  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2010/11  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2011/12  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2012/13  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2013/14  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2014/15  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2015/16  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2016/17  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2017/18  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |
| 2018/19  | 100%  |  |   |          |            |          |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |         |      |

**Performance Measures to assess progress towards achievement of Community Outcomes**

| Community Outcome  | How the Sewerage & Stormwater Activity Contributes   | Performance Measure  | Target   |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
|--|--|--|--|------|-----------|----------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|
| <p><b>A Quality Standard of Housing</b></p>              | <p>Ensure that all urban properties have access to a sewerage system that is efficient and affordable.</p> | <p>Total operating cost of service per connection (Kaikoura township).</p> | <p><b>Total Operating Cost of Service per Sewer Connection</b></p>  <table border="1"> <caption>Total Operating Cost of Service per Sewer Connection</caption> <thead> <tr> <th>Year</th> <th>Cost (\$)</th> </tr> </thead> <tbody> <tr> <td>Baseline</td> <td>380</td> </tr> <tr> <td>2009/10</td> <td>380</td> </tr> <tr> <td>2010/11</td> <td>390</td> </tr> <tr> <td>2011/12</td> <td>390</td> </tr> <tr> <td>2012/13</td> <td>395</td> </tr> <tr> <td>2013/14</td> <td>395</td> </tr> <tr> <td>2014/15</td> <td>395</td> </tr> <tr> <td>2015/16</td> <td>400</td> </tr> <tr> <td>2016/17</td> <td>405</td> </tr> <tr> <td>2017/18</td> <td>405</td> </tr> <tr> <td>2018/19</td> <td>410</td> </tr> </tbody> </table> | Year | Cost (\$) | Baseline | 380 | 2009/10 | 380 | 2010/11 | 390 | 2011/12 | 390 | 2012/13 | 395 | 2013/14 | 395 | 2014/15 | 395 | 2015/16 | 400 | 2016/17 | 405 | 2017/18 | 405 | 2018/19 | 410 |
| Year   | Cost (\$)  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| Baseline   | 380  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2009/10  | 380  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2010/11  | 390  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2011/12  | 390  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2012/13  | 395  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2013/14  | 395  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2014/15  | 395  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2015/16  | 400  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2016/17  | 405  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2017/18  | 405  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| 2018/19  | 410  |  |  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |
| <p><b>Environmental Protection &amp; Enhancement</b></p> | <p>By ensuring that sewage is disposed of with minimal environmental impact.</p>                           | <p>No sewage spills from pump stations or manholes</p>                     | <p>No spills occur.</p>  |      |           |          |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |

In addition to the above performance measures towards the achievement of community outcomes, Council will also measure its levels of service for each of its activities

## Forecast Cost of Service Statement - Operating

|                                    | 2010           | 2011           | 2012           | 2013           | 2014           | 2015           | 2016           | 2017           | 2018           | 2019           |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>Operating Expenses</b>          |                |                |                |                |                |                |                |                |                |                |
| <u>Sewerage</u>                    |                |                |                |                |                |                |                |                |                |                |
| Operations                         | 263,931        | 290,537        | 316,803        | 323,918        | 331,339        | 348,217        | 356,397        | 364,438        | 373,006        | 382,525        |
| Loan Interest                      | 30,823         | 53,623         | 75,904         | 73,484         | 71,131         | 54,608         | 53,381         | 50,675         | 46,165         | 44,122         |
| Depreciation                       | 205,732        | 224,314        | 243,412        | 259,336        | 266,372        | 268,755        | 271,214        | 282,184        | 284,811        | 287,528        |
|                                    | <b>500,486</b> | 568,474        | 636,118        | 656,738        | 668,842        | 671,580        | 680,991        | 697,297        | 703,982        | 714,175        |
| <u>Stormwater</u>                  |                |                |                |                |                |                |                |                |                |                |
| Operations                         | 45,542         | 46,675         | 47,805         | 49,248         | 50,772         | 52,118         | 53,779         | 55,384         | 57,093         | 59,052         |
| Loan Interest                      | 27,669         | 23,858         | 22,348         | 22,708         | 22,321         | 19,449         | 16,956         | 16,956         | 14,984         | 9,982          |
| Depreciation                       | 47,120         | 46,151         | 46,330         | 46,509         | 47,900         | 48,079         | 48,258         | 50,851         | 51,030         | 51,209         |
|                                    | <b>120,331</b> | 116,684        | 116,482        | 118,465        | 120,993        | 119,646        | 118,993        | 123,190        | 123,107        | 120,243        |
| <b>Total Operating Expenses</b>    | <b>620,817</b> | <b>685,158</b> | <b>752,601</b> | <b>775,203</b> | <b>789,835</b> | <b>791,226</b> | <b>799,984</b> | <b>820,487</b> | <b>827,088</b> | <b>834,418</b> |
| <b>Funded by:</b>                  |                |                |                |                |                |                |                |                |                |                |
| Targeted Rates & Charges           | 561,774        | 613,309        | 701,725        | 629,367        | 637,378        | 656,226        | 647,950        | 664,953        | 669,086        | 678,271        |
| User Fees & Charges                | 18,076         | 18,589         | 27,963         | 28,346         | 28,722         | 29,123         | 29,534         | 29,955         | 30,404         | 30,864         |
| Subsidies                          | 162,500        | 0              | 571,500        | 0              | 0              | 0              | 0              | 0              | 0              | 0              |
| Development Contributions          | 0              | 0              | 155,252        | 159,910        | 164,867        | 170,307        | 176,098        | 181,909        | 188,094        | 194,677        |
|                                    | <b>742,350</b> | 631,897        | 1,456,440      | 817,623        | 830,967        | 855,657        | 853,582        | 876,818        | 887,584        | 903,812        |
| <b>Operating Surplus/(Deficit)</b> | <b>121,533</b> | <b>-53,261</b> | <b>703,840</b> | <b>42,420</b>  | <b>41,132</b>  | <b>64,431</b>  | <b>53,598</b>  | <b>56,330</b>  | <b>60,495</b>  | <b>69,395</b>  |

## Forecast Cost of Service Statement - Capital

|                                  | 2010           | 2011           | 2012             | 2013           | 2014           | 2015           | 2016           | 2017           | 2018           | 2019           |
|----------------------------------|----------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <u>Sewerage</u>                  |                |                |                  |                |                |                |                |                |                |                |
| New/Upgrade Assets               | 325,000        | 0              | 1,143,000        | 0              | 0              | 0              | 0              | 0              | 0              | 0              |
| Renewals                         | 340,000        | 432,000        | 334,800          | 114,600        | 117,400        | 120,900        | 125,011        | 129,136        | 133,527        | 138,200        |
|                                  | <b>665,000</b> | 432,000        | 1,477,800        | 114,600        | 117,400        | 120,900        | 125,011        | 129,136        | 133,527        | 138,200        |
| <u>Stormwater</u>                |                |                |                  |                |                |                |                |                |                |                |
| New/Upgrade Assets               | 224,000        | 5,000          | 5,000            | 5,000          | 5,000          | 5,000          | 5,000          | 5,000          | 5,000          | 5,000          |
| Renewals                         | 12,000         | 12,000         | 12,000           | 12,000         | 12,000         | 12,000         | 12,000         | 12,000         | 12,000         | 12,000         |
|                                  | <b>236,000</b> | 17,000         | 17,000           | 17,000         | 17,000         | 17,000         | 17,000         | 17,000         | 17,000         | 17,000         |
| <u>Capital Debt Servicing</u>    |                |                |                  |                |                |                |                |                |                |                |
| Loan Principal                   | 39,885         | 48,204         | 55,029           | 56,755         | 56,137         | 401,435        | 54,961         | 56,406         | 52,702         | 53,129         |
| <b>Total Capital Expenditure</b> | <b>940,885</b> | <b>497,204</b> | <b>1,549,829</b> | <b>188,355</b> | <b>190,537</b> | <b>539,335</b> | <b>196,972</b> | <b>202,542</b> | <b>203,229</b> | <b>208,329</b> |
| <b>Funded by:</b>                |                |                |                  |                |                |                |                |                |                |                |
| Transfer from/(to) Reserves      | 142,500        | -20,000        | 231,248          | -159,910       | -164,867       | 158,071        | -176,098       | -186,823       | -193,107       | -199,802       |
| Loans                            | 424,000        | 300,000        | 325,000          | 0              | 0              | 0              | 0              | 0              | 0              | 0              |
| Depreciation                     | 252,851        | 270,465        | 289,741          | 305,844        | 314,272        | 316,834        | 319,472        | 333,035        | 335,841        | 338,737        |
| Operating Surplus/(Deficit)      | 121,533        | -53,261        | 703,840          | 42,420         | 41,132         | 64,431         | 53,598         | 56,330         | 60,495         | 69,395         |
|                                  | <b>940,885</b> | <b>497,204</b> | <b>1,549,829</b> | <b>188,355</b> | <b>190,537</b> | <b>539,335</b> | <b>196,972</b> | <b>202,542</b> | <b>203,229</b> | <b>208,329</b> |

