

**KAIKOURA DISTRICT COUNCIL WORKS AND SERVICES
COMMITTEE MEETING HELD ON WEDNESDAY 21 APRIL
2010 IN MEMORIAL HALL SUPPER ROOM, ESPLANADE,
KAIKOURA.**

AGENDA

1. *Apologies*

2. *Matters of Importance to be raised as Urgent Business.*

3. *Matters Arising from Report of 17/3/2010* *page 80*

4. *Minutes Action and Issues List Update*

MEETING	ACTION REQUIRED	BY	DATE ACTIONED
	17 MARCH 2010		
Works and Services	Undertake a survey of businesses in the West End regarding installation of additional CCTV cameras.	Asset Manager	Report included in agenda refer page 3

5. *Reports:*

- **Works and Services Report** *page 1*
- **Roading Report** *page 12*
- **Works and Services Budget Report** *page 25*

6. *Urgent Business*

7. *Works & Services Public Excluded Session*

Moved, seconded that the public be excluded from the following parts of the proceedings of this meeting, namely

a. Sewer Line Renewals - Consideration of Prices

The general subject matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under Section 48(1) and 7 of the Local Government Information and Meetings Act 1987 for the passing of this resolution are as follows:

General subject of each to be considered	Reason for passing this resolution in relation to each matter	Grounds of the Act under which this resolution is

		made
Sewer Line Renewals - Consideration of Prices.	The exclusion of the public from the whole or the relevant part of the proceedings of the meeting is necessary to enable the Local Authority to deliberate in private on its decision or recommendation.	Section 48(1)(a) and 7(2)(b)(ii)

WORKS AND SERVICES REPORT

1.0 WATER SUPPLY

Urban Water

Operations – Kaikoura Urban Supply

The Kaikoura Urban supply operated fairly well during the reporting month with no major problems.

Operations – Suburban Supply

There were no major operational problems with the Suburban supply during the reporting month.

The daily water demand for this supply averaged 11m³ during the reporting month

Water Demand

Table 1 below shows the water demand for the reporting month measured from the Mackle's bore while figure 1 on page 4 shows the yearly cumulative water demand since 2006.

For the month of March 2010 the water demand was 109,529m³ whereas for the month of February 2010, the total water demand was 112,1701m³.

<i>Water Demand (m³/day)</i>				
	<i>Min (m³)</i>	<i>Avg (m³)</i>	<i>Max (m³)</i>	<i>Total Demand (m³)</i>
<i>Jan 2010</i>	3684	4659	5635	144, 433
<i>Feb 2010</i>	3471	4346	5530	121,701
<i>Mar 2010</i>	2971	3533	4462	109529

Table 1: Water Demand for reporting period

Kincaid Water Supply

There were no major issues within the Kincaid supply during the reporting month.

Water Upgrades /Renewal Projects - Capital Assistance Programme (CAP)

Works funded by the Capital Assistance programme is underway.

1. ***Fords Tank*** – The tank foundation and most of the pipe works have been completed. At the time of writing this report the suppliers of the tank are onsite erecting the tank. It is anticipated that the tank will be completely erected by April ending and final commissioning by the first week of May 2010.
2. ***Peninsula Tank*** – The works for the installation of this tank have not commenced as Council is still in the process of getting permission from the land owners regarding the selected site to erect the tank. Once this hurdle is crossed the process for the tank installation will commence.
3. ***Reticulation system*** – The replacement of the 100mm diameter Steel Spiral (SRS) water main along Torquay Street is in progress. Ramsgate, Brighton and Deal Streets water main renewals will follow. It is anticipated that the works will be completed by June ending 2010.

2.0 SEWER SYSTEM

Table 2 below shows the average sewage flows for the reporting months as measured at the Mill Road pumping station while figure 2 on page 5 shows the sewage generation to date in comparison to previous years.

The total flow for the month of March 2010 was approximately 51617m³ approximately 10,000m³ more than the month of February 2010 which was 40,178m³.

<i>Sewage flows (m3/day) – Mill Rd</i>			
	<i>avg</i>	<i>max</i>	<i>Total Flow</i>
<i>Jan 2010</i>	1593	1842	49,370
<i>Feb 2010</i>	1435	1581	40178
<i>Mar 2010</i>	1665	2339	51617

Table 2 : Sewage generated for reporting period

The measured Dissolved Oxygen (DO) averaged 1.1mg/l for the reporting month.

2.1 Sewer Renewals

A full report regarding the renewals of sewer line along Whitby Place/Takahanga Terrace/Churchill street/Deal Street is included on page 6.

2.2 Aerated Lagoon

The design of the aerated lagoon has been completed and sent for peer review. Once comments have been received the designs will finally be completed taking into account any comments from the Engineer reviewing the design. A resource consent application will be lodged after this process for constructing the lagoon as well as tendering for the works.

3.0 STORMWATER

Urban Stormwater

There were no major issues for the reporting month.

Rural Stormwater

During the reporting month Council staff has not progressed on this however once the contract documents etc have been completed and tendered some progress will be made on this.

4.0 PARKS AND RESERVES

The parks and reserve area are in fair condition with no major work and or complaints during the reporting period.

5.0 PUBLIC TOILETS

There were no major problems with the public conveniences during the reporting month.

6.0 CCTV – West End

As per Council's request at the last Council meeting, the businesses along the West End were all given the opportunity to say whether or not they would be willing to contribute to the financing of additional cameras along this street. Except for 3 shops all other shops had letters dropped to them on March 31st 2010. The other three shops had their letters dropped on April 6th, 2010. All the shop owners/occupants were requested to respond to Council via email by April 12, 2010.

To date there have only been four responses; with two shop owners/occupants not willing to contribute while the other two would consider the possibility of contributing.

7.0 Contract Renewals

The contracts for the operations and maintenance of the Water services, Parks and Reserves and Public conveniences will expire on April 30, 2010. It has been decided to tender out these contracts. The contract documents are now being prepared for all three services. Tenders will be out by the end of April 2010.

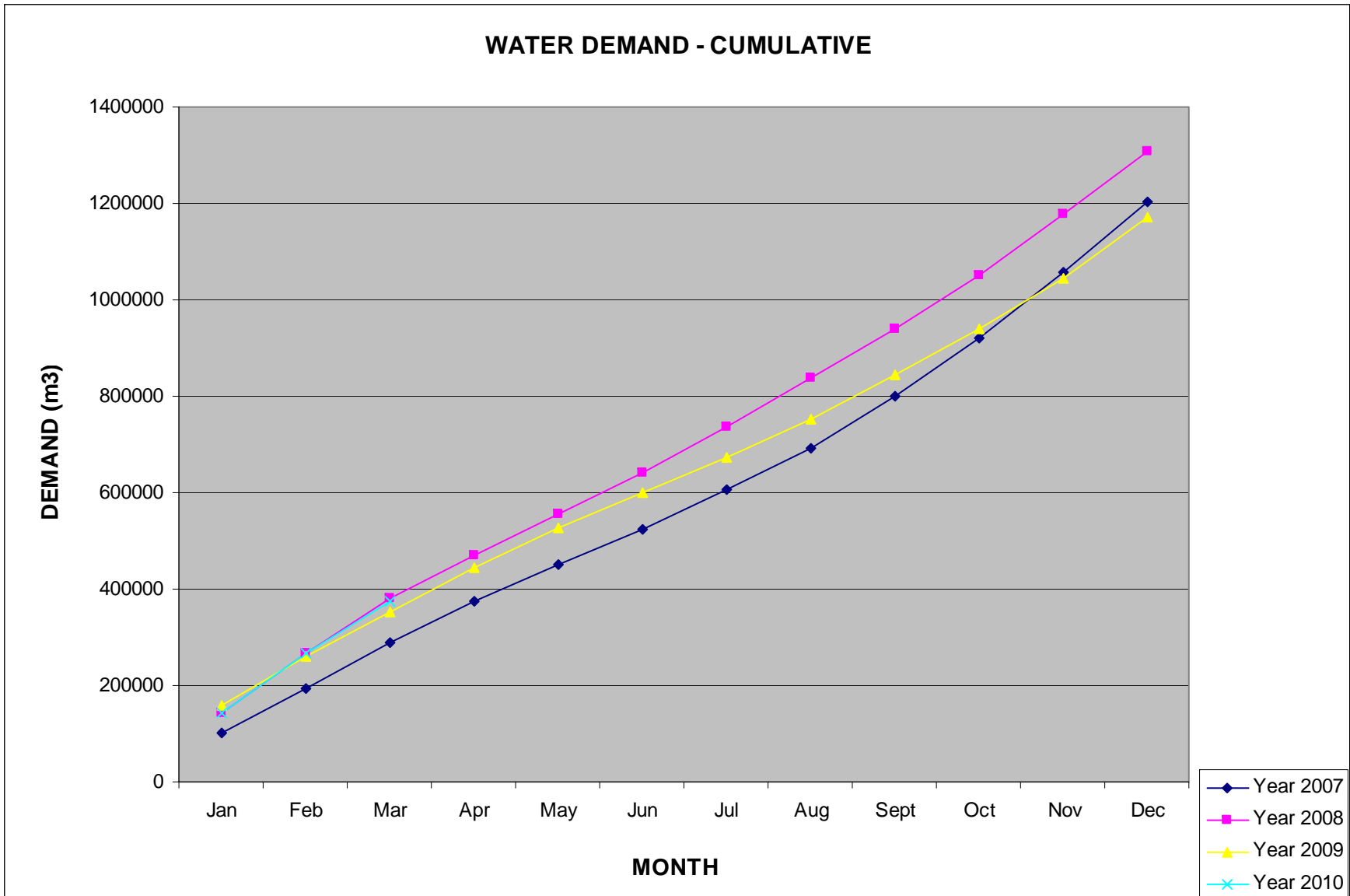


Figure 1: Yearly Cumulative Water demand

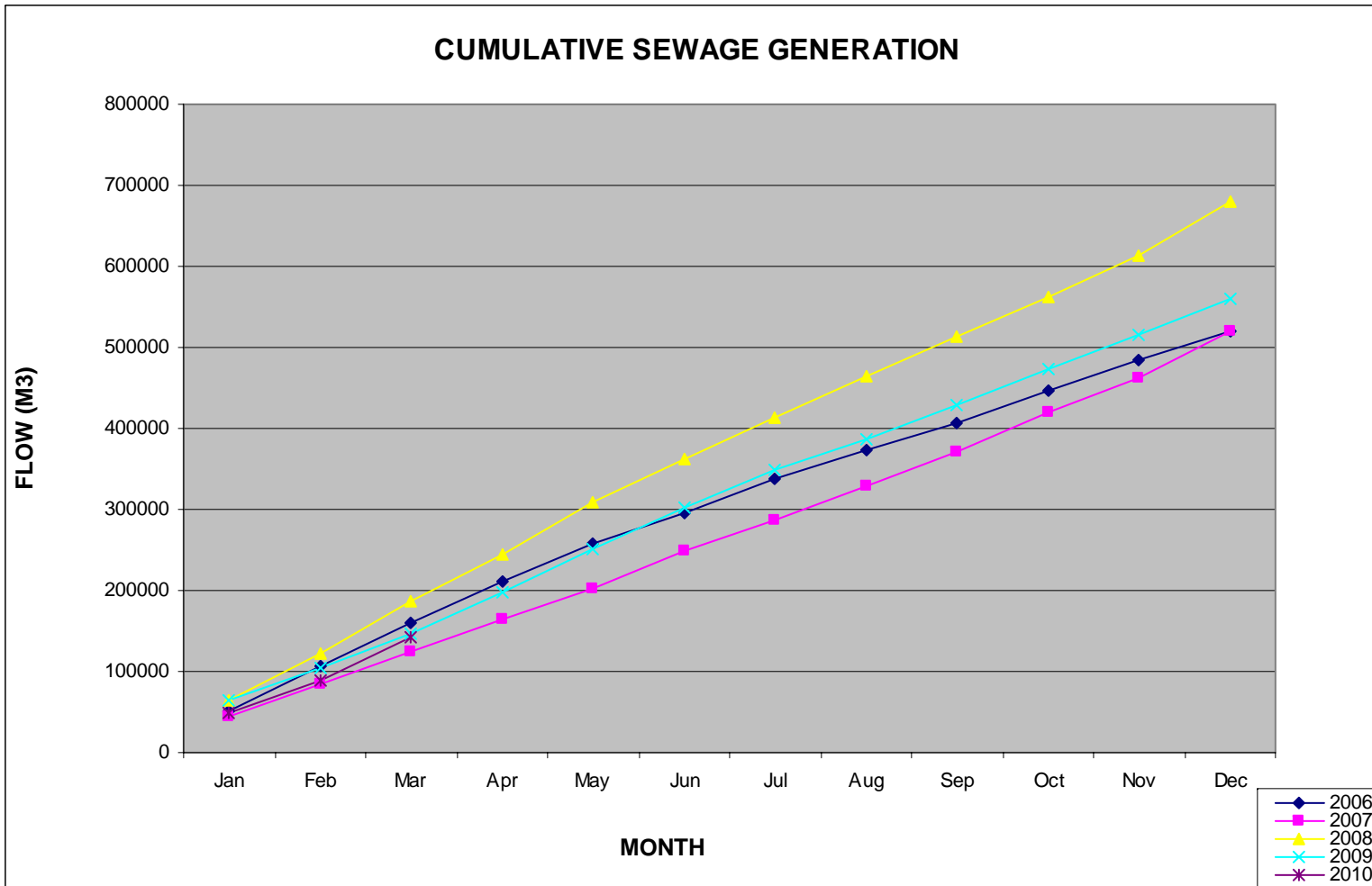


Figure 2: Yearly Sewage Generation

Sewer Line renewal – Churchill Street/Whitby Place/Takahanga Terrace/Deal Street

Kaikoura District Council is currently in the process of renewing approximately 800m of 150mm diameter sewer lines within the Kaikoura Urban area.

Of the 800m of pipes:

1. Approximately 315m runs at the back of the houses located along Churchill Street and Whitby Place. The majority of this line has houses, sheds etc built over it making access very difficult.
2. 219m of the line runs along and within the State Highway Corridor while,
3. 264m runs along Council road (Takahanga and Deal Street)

Figures 1 and 2 below shows the routing of the sewer line.

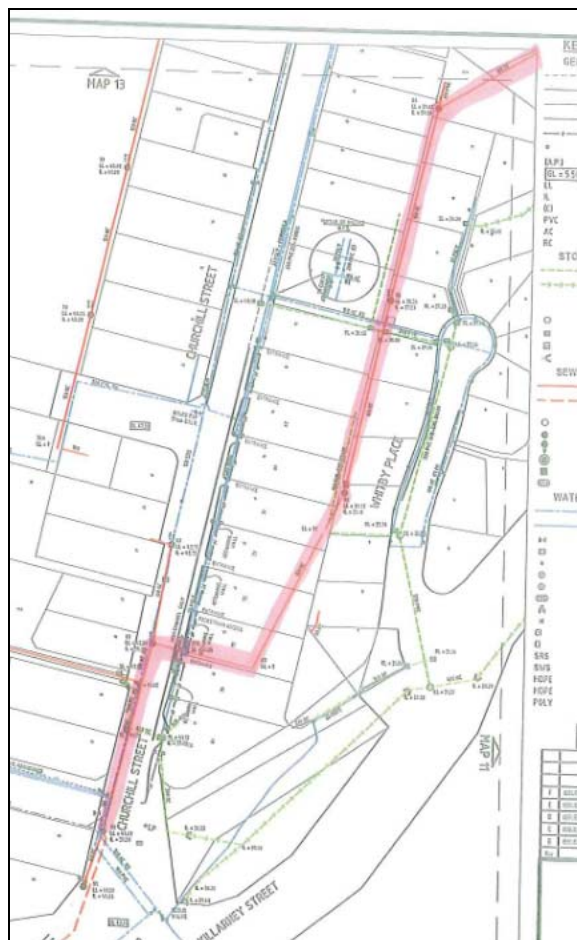


Figure 1 - Churchill Street to Takahanga Section



Figure 2 - Takahanga - Deal Street - Adelphi Section

Considering the routing of the line Council staff thought contractors would encounter difficulty renewing the line so in order not to have gone through a formal tendering process proposals to replace/renew the line were requested from a number of companies.

The list of companies that were contacted is as follows:

1. Fulton Hogan - Kaikoura
2. Downer EDI Works – Kaikoura
3. Symthe Contractor - Cambridge
4. Adcock and Donaldson Contracting - Nelson
5. Subsurface Drilling - Christchurch
6. Mono Pumps/BG Contracting - Christchurch
7. Harker Underground Construction - Wellington
8. Interflow - Auckland
9. City Care – Christchurch
10. Ecoflow - Christchurch

A summary of the response from the list of contractors inclusive of prices is included in public excluded.

The options looked at to facilitate the renewal of this line are:

Option 1 - Slip Line (Reline) the entire length of the sewer line with a reduce pipe diameter.

Option 2

- Slip Line the section from Churchill Street to Takahanga Terrace
- open trench or pipe cracking from Takahanga Terrace to Deal Street
- Possible open trench or Pipe Cracking along Churchill Street/Adelphi Terrace and replace with a 150mm diameter pipe similar to the existing pipe diameter.

Option 3 – This option is similar to Option 2 however the difference in this option is to also install a pumping main along Churchill Street to connect back to Deal Street for flows from South Bay if there are any issues with the Churchill Street Pumping Station.

Option 4

- Open trench or pipe cracking approximately 81m along Churchill Street and direct the flow back to Churchill Street Pumping Station.
- Install a pressure sewer and small onsite pumping station within the premises for approximately 315m and
- Open trench or pipe cracking the remaining section.

Option 5

- Open trench or pipe cracking approximately 81m along Churchill Street and direct the flow back to Churchill Street Pumping Station.
- Slip line section 2 for approximately 315m.
- Open trench or pipe cracking the remaining sections.

Option 6

This option allows for 800m of new sewer to be installed by directional drilling alongside the existing sewer line. The Contractor has not physically visited the site however as much information as possible was communicated to him especially as it relates to access.

Option 7

This is a variation of option 6 however it allows for only 264m of the sewer to be done by open trenching and the remaining section by directional drilling.

Separate and apart from the options listed above Council staff have also looked at the possibility of re-routing the sewer however, this would be a significant cost to the Council and no further investigation was carried out.

The other option is **Option 8** which is for Council to do nothing.

Conclusion

The modelled system confirms that the disadvantage of **option 1** is that it will not accommodate 100% of flows from the South Bay area if there is a failure at Churchill Street Pumping Station.

From a hydraulic modelled assessment the following was also concluded for the section of line that runs from Churchill Street to the top of Takahanga Terrace:

- Pipes laid between manholes 88 – 86 and between manholes 85 – 84 does not meet the minimum velocity of 0.5m/s , by laying a 109mm ID pipe this velocity will still not be met.
- Pipes laid between manholes 88 – 86 and also between Manholes 85 – 84 were constructed at less than the minimum required slope of 0.005m/m (1in180).
- The 109mm ID lining has the capacity to cater for flows for the existing discharge plus 25% flow (f50m³/d) from South Bay.

Due to the slope limitation from MH88 to MH86 (pipes within these sections are flat with no slope) even a 150mm pipe (existing pipe size) does not meet the minimum requirements of slope and velocity.

Additionally, the section of line that runs along Churchill Street to Adelphi Terrace will not accommodate flows from other contributing areas such as Bayview Street and Hasting Street if a

109mm ID pipe was to be used in this section. It is for these reasons that option 1 will not be discussed any further.

From a preliminary risk assessment as shown in table 1 appendix 1 appropriate management practices can be implemented to mitigate any major risk at the Churchill Street pumping station if a failure does occur. Accordingly, **option 3** which includes installing a pumping main along Churchill Street to connect back to Deal Street to accommodate flows from South Bay, if there are major issues with Churchill Street Pumping Station, is not considered a favourable option. Additionally, the cost for the additional line along Churchill Street would be deemed as capital work. The works identified for this project is for renewals of the pipe hence the budgetary allowance did not allow for any capital works to be implemented within these works.

Option 8 which is the do nothing option is seen to be too much of a risky option as the consequences of leaving the pipe to “collapse ” can have more severe implications (legally and financially) on the Council.

Options 2, 4, 5, 6 and 7 appear to be workable solutions for renewing this sewer line. The contractor submitting the proposal for **options 6 and 7** has not physically visited the site however enough information was communicated to him to enable him to price the works for both options.

The contractor in his proposal has stated that there are difficulties with directional drilling with pipes laid at less than 1% gradient however it is not impossible. It was suggested that sections of the line be re-graded to allow for a 0.54% gradient. Hydraulically this option would be one of the better options however this option is financially prohibitive.

Options 2, 4 and 5 appear to be the more favourable options however; one major disadvantage of **option 4** is the ongoing maintenance and electrical cost of the small onsite pumping stations. The cost may not be significant however the life cycle cost of these stations needs to be considered in comparison to the life cost of a small bore gravity sewer.

Notwithstanding this Council would also need to consider the public’s reaction if this option should be implemented.

Option 5 as mentioned is a workable solution however there would be no advantage gained in diverting this flow back to Churchill Street Pumping Station. Approximately 200m of this sewer line which lies downstream of this section is laid at less than acceptable grades (very flat) and hence will need any flushing effect that the volume of water generated within this 81m section of sewer provides.

Based on the above and taking into considerations both physical and financial constraints **option 2** appears to be the best option for renewing the sewer.

Way Forward

Once the different options were assessed and the preferred option chosen, the four contractors whose proposals were in line with the preferred option were written on March 22, 2010 requesting a more detailed pricing on the preferred option with the requested information to be submitted by April 12, 2010. The contractors are:

1. Adcock and Donaldson Contracting - Nelson
2. Subsurface Drilling - Christchurch
3. BG Contracting - Christchurch
4. City Care – Christchurch

Of the four contractors only Adcock and Donaldson Contracting submitted a bid for this work whereas BG Contracting did not respond. The other contractors responded as follows;

1. City Care : Declined the opportunity to provide a price at this stage for the following reasons
 - Poor state of condition to the existing sewer line
 - Location through private property and geographical location to the work site from their main operational centre in Christchurch

Despite this City care nonetheless offered their services on a cost plus rate basis which effectively mean City Care does not want to enter into a risky job and end up at a lost.

2. Subsurface Drilling - unable to put a price on this project, due to the timing of the tender closing and additional information that would be required for the State Highway laterals.

Recommendation

Based on the arguments put forward it is our opinion and also recommendation that:

1. *Option 2: be considered for implementation. That is*
 - *Slip Line the section from Churchill Street to Takahanga Terrace*
 - *open trench or pipe cracking from Takahanga Terrace to Deal Street and replace with a 150mm diameter pipe similar to the existing pipe diameter*
 - *Possible open trench or pipe cracking along Churchill Street/Adelphi Terrace and replace with a 150mm diameter pipe similar to the existing pipe diameter.*

Appendix 1: Risk Assessment

	What could happen that may cause the system to fail	Is this under Control	If Not does it require urgent attention?
1	<p>Mechanical Failure</p> <p>Pump</p>	<p>Yes. The station is equipped with two pumps hence in case of a pump failure the back-up pump can now become the duty pump.</p> <p>The existing maintenance procedures in place ensure that all the pumps are operational at all times to prevent both pumps failing simultaneously.</p> <p>It is highly unlikely that both pumps will fail at the same time however this does happen the upstream pump station can be inhibited and suckers trucks can be used to move sewage from the upstream stations to the station immediately after the station that is malfunctioning. In addition there is a pump stored in the work shed that can be installed until both pumps have been repaired</p>	No urgent attention Required
2	<p>Electrical Failure</p> <p><i>Resulting from</i> control panels malfunction Power outage Pump Flooding – storm surge, tsunami sea erosion Wind Exposure Sabotage or accidental –</p>	<p>If the control panels malfunction at any station a sucker truck will be used to cart sewage from the station to a down stream station or to the oxidation pond.</p> <p>Flooding would not affect the Churchill Street pumping station.</p> <p>In situations where there is power failures the contractors will use standby generators to run the panels and pumps. If power outages should persist for more than 8 hrs contingency plans needs to be in place regarding the disposal of sewage thereafter.</p>	<p>No urgent attention required</p> <p>No urgent attention Required</p> <p>Contingency plans needs to be implemented for power cuts exceeding 8hrs.</p>
3	<p>Structural Damage - Seismic Activity (Ground Shake, Liquefaction, Landslide, Ground Settlement), Tsunami</p>	<p>Presently construction of sewers and other structures such as wet wells are carried out under best engineering practice which allows for designs to take seismic events into consideration. Most of the structural damage that may occur may possibly be at the joints of the influent and effluent pipes and at the rings of the wet wells.</p> <p>If damages are located at the joints of the influent and effluent pipes of the wet wells these can be easily repaired. If damage should occur at the rings of the wet well the operators would be required to lower the probes so as to allow the pumps to trip in before the water reaches the damaged ring level until the damage is repaired.</p>	No Urgent Attention required
4	Storm surge, Flooding - Affecting Systems Capacity	<p>The level of flooding will dictate the level of response.</p> <p>For minor flooding Council's contractors will respond by using sucker trucks to contain the effect of any overflows.</p>	contingency plans needs to be put in place

ROADING REPORT

1.0 Roading Contract

As per Council's decision the Roading Contract with Fulton Hogan which expires on June 30th, 2010 is extended for another year to June 30th, 2011 and a further one year to June 30th, 2012 on satisfactory completion of the first one year extension.

2.0 Reseal Contract

The resealing contract for 2009/10 is completed as per contract agreement.

3.0 Routine Bridge Inspections

The routine bridge repair works is in progress and is scheduled to be completed by the end of the financial year.

4.0 Stock Crossings

Work on this is progressing, the physical works to construct the concrete crossings can not commence until after the milking season.

5.0 Cycle Stand: West End

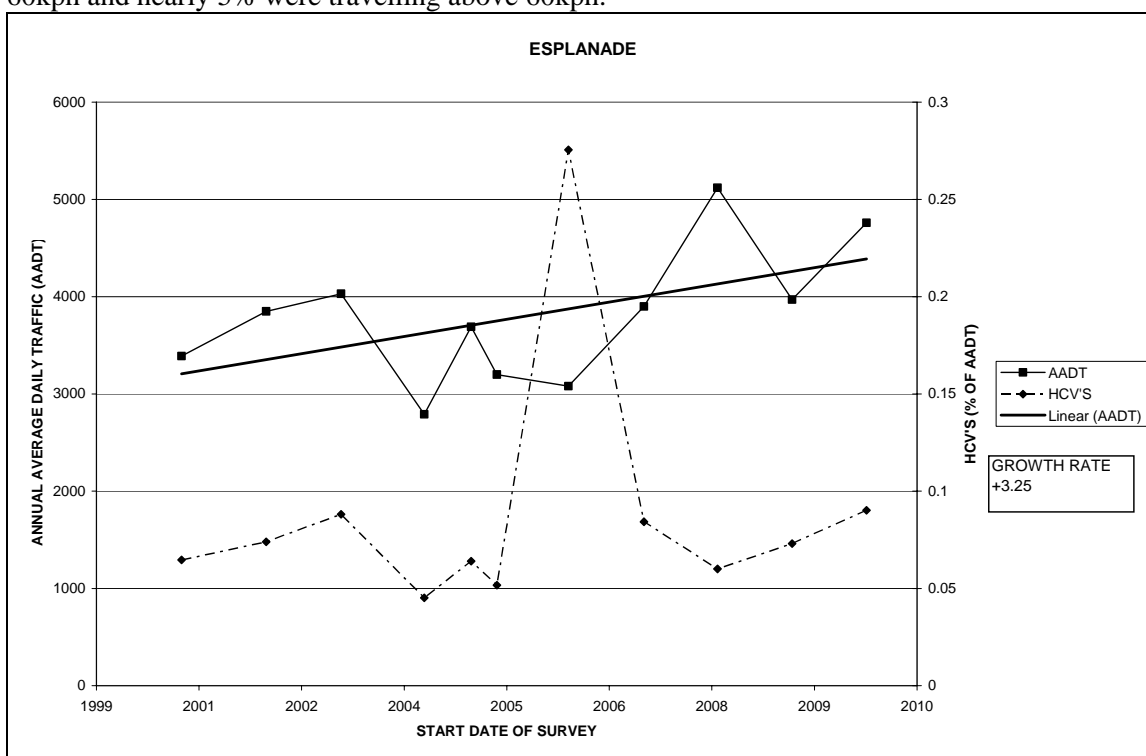
The construction of the West End cycle stand is now completed and the response so far from the public is very positive.

6.0 Traffic Count

Traffic counts for the month of March 2010 included the following roads;

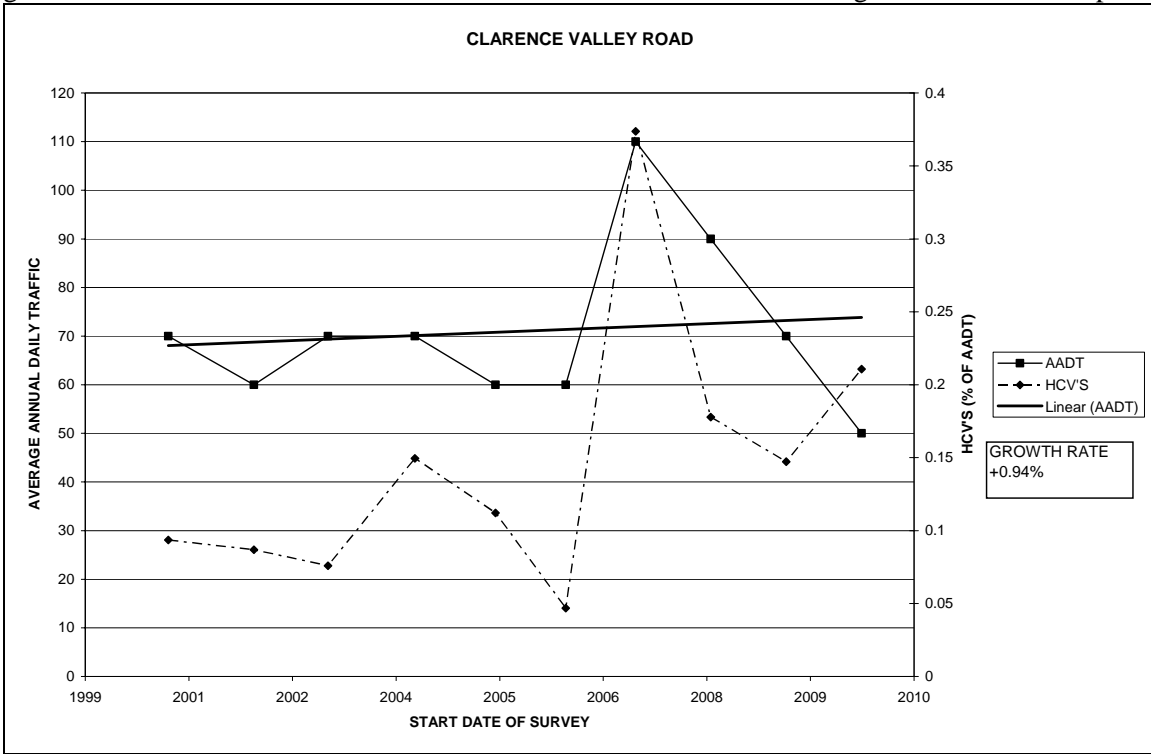
Esplanade – 4806 Vehicles Per Day (vpd)

With the exception of year 2008 where the vehicle count peaked to a high of 5120 vehicles per day the vehicle movement is steadily going up since 2006 averaging at 3798 vpd. The overall growth rate since 2001 is 3.25%. 46.8% of the vehicles were travelling between 50kph and 60kph and nearly 5% were travelling above 60kph.



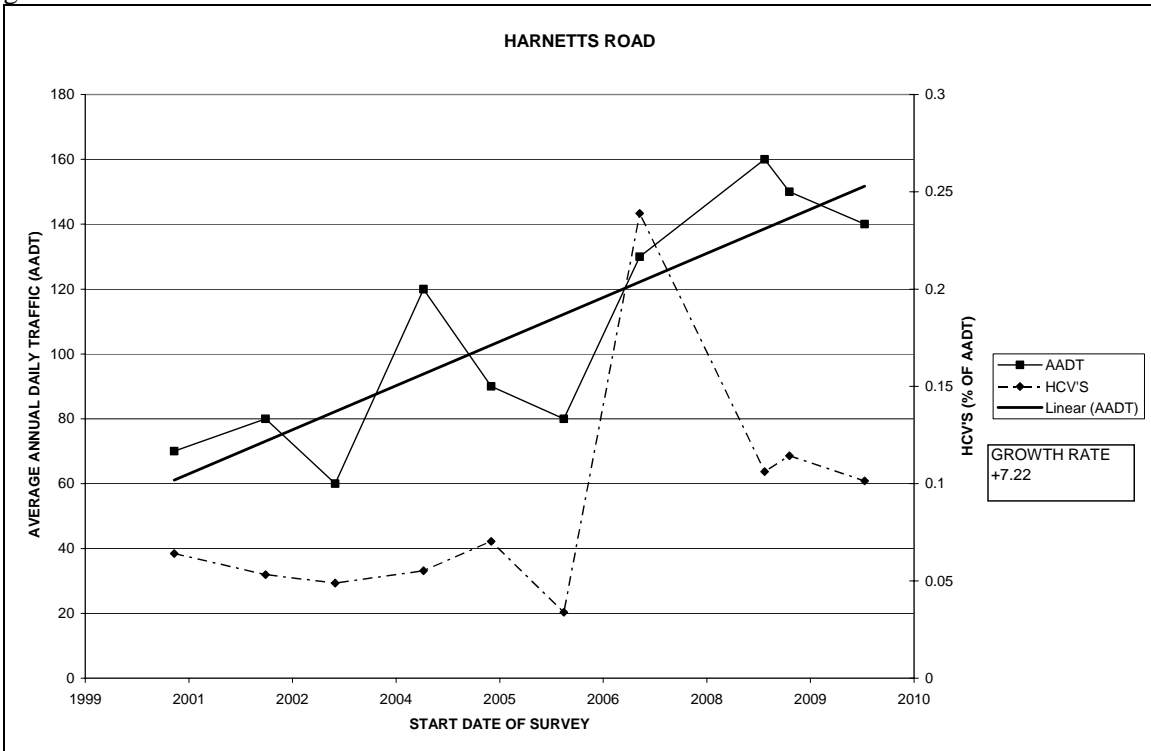
Clarence Valley Road – 48 vpd

The average daily count for Clarence Valley Road from 2001 to 2010 is 71 and the overall AADT growth rate since 2001 is 0.94%. No vehicles were recorded as travelling at more than 100 kph.



Harnetts Road – 142 Vehicles per Day (vpd)

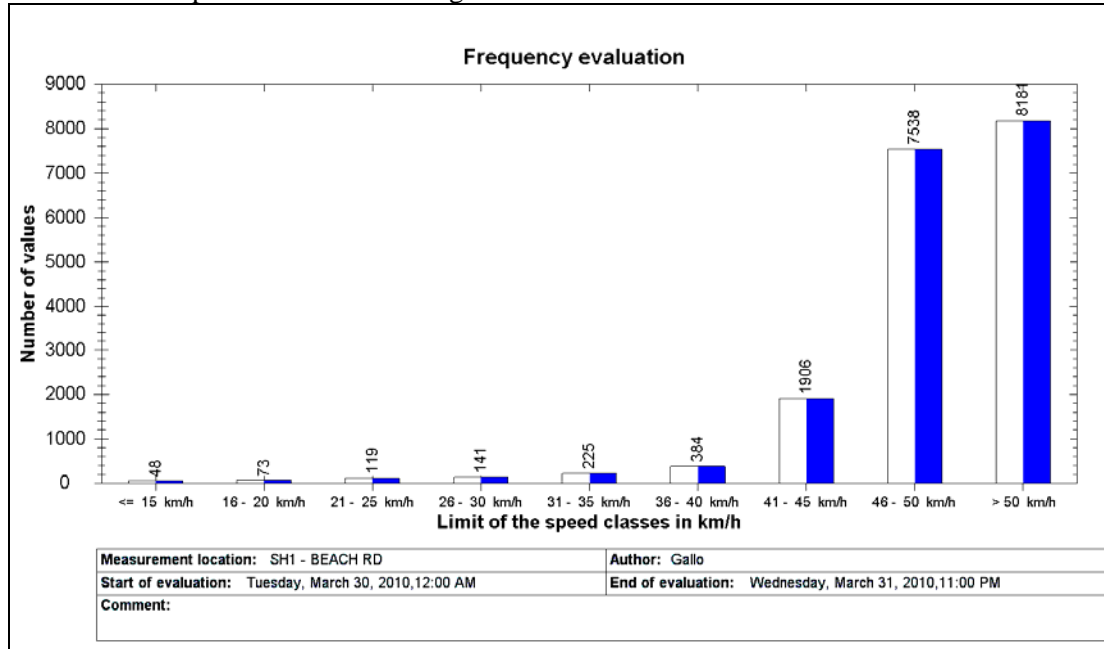
The average daily count for Harnetts Road from 2001 to 2010 is 108 and the overall AADT growth rate for is 7.22% since 2000.



The graph trend for Harnetts Road shows a slight decrease in traffic since 2008. No vehicles were recorded as travelling at more than 100 kph.

SH 1 – Beach Road - VIASIS TRAFFIC COUNTER

Below is an output from the Viasis Sign located on SH1 - Beach Road



Copies of the traffic count reports are sent to the Kaikoura Police for their information.

7.0 Quality

There were no quality issues during March 2010.

8.0 Environmental

There were no environmental issues in March 2010.

9.0 Traffic Control

There were no traffic control issues to report for the period.

10.0 Vegetation Control

The mowing and spraying of all rural roads is completed

11.0 Emergency Work

Nothing of significance to note

12.0 Inspections

The monthly roading inspection is being carried out as specified.

13.0 Monthly Performance Report

	Performance Indicators	Type	Response	Number	Within Period	% Acceptable
3	Surfacing	Strategic	6 Weeks			
4	Surfacing	Local	8 Weeks			
5	Digouts	Strategic	6 Weeks			
6	Digouts	Local	8 Weeks			
7	Depressions	Strategic	6 Weeks			
8	Depressions	Local	8 Weeks			
9	Edge Break	Strategic	6 Weeks			
10	Edge Break	Local	8 Weeks			
11	Shoulder Maintenance	Strategic	6 Weeks			
12	Shoulder Maintenance	Local	8 Weeks			
13	Potholes	Strategic	2 Days			
14	Potholes	Local	7 Days	12	12	100%
15	Detritus & Slip Removal	Strategic	2 Days			
16	Detritus & Slip Removal	Local	7 Days			
17	Drainage	All	12 Hours			
18	Unsealed Pavement Potholes	Local	7 Days	1	1	100%
19	Unsealed Pavement Digouts	Local	6 Weeks			
20	Edge Marker Post	All	7 Days			
21	Signs and Chevrons	All	24 Hours	9	9	100%
22	Sight Rails and End Markers	All	48 Hours			

14.0 Summary of Work Completed in the Period

**KAIKOURA DISTRICT COUNCIL
ROAD MAINTENANCE MANAGEMENT CONTRACT
3 SEPTEMBER 2007 TO 30 JUNE 2011**

MONTHLY WORK SUMMARY MARCH 2010

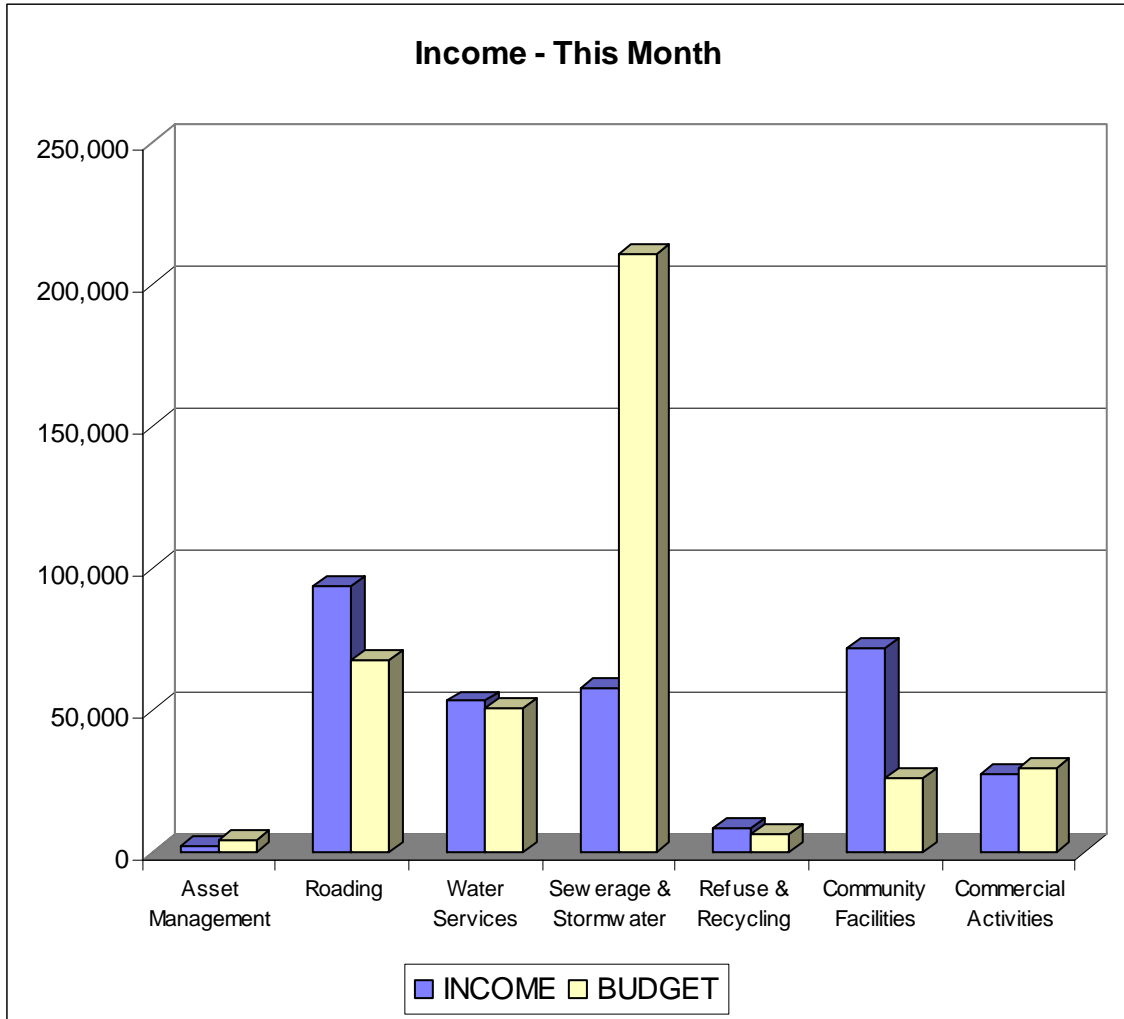
Road ID	Road Name	Potholes	Other Sealing	Grading	Surface Debris	Drainage	Signs	Other Signage	Vegetation	Various
161	BEACH ROAD - HAPUKU SETTLEMENT						new Hapuku Rd sign			
103	BLUE DUCK VALLEY ROAD					clear drains and repair road				
104	BLUNTS ROAD			Graded						
105	BRUNEL ROAD			Graded						
109	DAIRY FARM ROAD			Graded						
111	ELLERTON VALHALLA ROAD			Graded						
12	ESPLANADE ROAD	repair pothole on footpath in town			put up warning sign and clear debris - high seas		reinstate damaged signs		clear rat tail's	
112	FACTORY ROAD						new Factory Rd sign			
116	GRANGE ROAD			Graded and reinstate Hapuku crossing						

121	HAWTHORN ROAD WEST	repaired 3 potholes								
118	INLAND ROUTE RS00/0									Road inspection
155	INLAND ROUTE RS16/0									Road inspection
19	KAIKOURA LOOKOUT ROAD						new slow sign up to Lookout			
122	KEKERENGU VALLEY ROAD			Graded						
124	KOWHAI FORD ROAD			Graded						
125	LUDSTONE ROAD	repaired 1 large pothole					reinstate 50/80 sign			
158	MCINNES ROAD			Graded						
129	MOUNT FYFFE ROAD	repaired 8 potholes	Terri Chambers entrance	12/03 Graded 22/03 Grade after heavy rain						
134	POSTMANS ROAD			Graded			warning sign for Fords in flood			
136	PUHI PUHI ROAD			25/03 Grade to Clinton Bridge 26/03/10 reinstate Malcom Mortons crossing and Jordon Ford 31/03 Grade from Clinton Bridge to Puhi Peaks						
32	RAMSGATE STREET									
140	RED SWAMP ROAD			Grade						

146	TOPLINE ROAD			Graded						
152	WIFFINS ROAD			Graded						

Notes: There was a lot of signage damage in the town on the last weekend of March
Rural spraying has been completed

Works and Services Budget Report



Expenditure - This Month

