

Notice is hereby given that a meeting of the Operations Committee will be held in the Council Chambers, 29 Bowler Avenue, Gore, on Tuesday 22 March 2017, following the Community Services Committee meeting.



Stephen Parry
Chief Executive

8 March 2017

Agenda

1. Report from 3 Waters Asset Manager
Pages 1-10
2. Report from Transport Manager
Pages 11-17
3. Upgrading water treatment plans – strategy review
Pages 18-21
4. Manganese and iron issues within Gore water reticulated network
Pages 22-24
5. Business to be considered pursuant to the Local Government Official Information and Meetings Act 1987:
 - Ajax pump station project update

OPERATIONS COMMITTEE AGENDA

TUESDAY 14 MARCH 2017

1. REPORT FROM 3 WATERS ASSET MANAGER - DECEMBER 2016 – JANUARY 2017**General**

As always the department has been kept busy with general maintenance requirements, day to day operation and network issue investigations. Leak repairs remain a priority while ensuring all other general maintenance work is still completed. In addition to this a number of investigation/information gather exercises are underway to allow for planning/design of future capital works.

A number of short duration high intensity rainfall events have also been experienced causing surface water flooding issues around the town.

Water consumption and restrictions

Despite the changeable weather experienced over the Christmas period a noticeable drop in aquifer levels was observed in the first half of January. This aligned with the fact that the Mataura River had been flowing below 60 cumecs since the end of November. As a result of this level 2 water restrictions were implemented on 13 January.

Following a sustained rainfall event which significantly increased the flow in the Mataura River, aquifer levels were observed to begin lifting on 21 January. By 24 January with the river by then in full flood and aquifer levels continuing to lift level 2 water restrictions were able to be lifted. The aquifer levels are now relatively high for this time of year however further water restrictions this summer are dependent on the climatic conditions we experience over the coming months.

Water use in Gore is continuing to be significantly lower than previous years, however how much of this can be contributed to the ongoing leak detection programme versus the wetter than normal summer we are experiencing is not as yet clear. It is worth noting however, that water consumption in Mataura (where we are not currently undertaking an increase leak detection programme) is approximately the same as previous years.

Water quality complaints

Over recent month there were two significant dirty water events. One occurred in West Gore on 15 December and the other in Mataura on 9 January. The cause of both of these dirty water issues was found to be contractors taking water from fire hydrants. In response to the complaints, a flushing programme was undertaken to resolve the issue.

While local contractors are generally educated on the fact that taking water from hydrants can cause these issues, unfortunately in both of these situations the

contractors were not familiar with our network and were therefore not aware of these issues.

Otama boil water notice

A boil water notice was issued for the Otama rural water scheme on 26 January following a positive e-coli detection at the Pyramid well. The Boil water notice was issued via the scheme text and email system, advertised on local radio station, the Council website and Facebook page as well as a press release being issued. Although the water at the well was confirmed to be clear by 2 February, due to ongoing e-coli detections within the scheme, consumers were asked to continue boiling their water until 7 February.

Following this incident a letter has been sent to all consumers explaining the regular sampling that is carried out for the scheme, how consumers can ensure they are notified of any boil water notices and highlighting the fact that the scheme is a stock water scheme and not recommended for human consumption.

Closing of the Gore Aquatic Centre

On the night of Saturday 25 February a contactor which controlled on of the main circulation pumps failed. Unfortunately it appears the contactor had welded itself shut prior to it failing. The control system is set up so that if one pump shuts down the others automatically shut off. However as the contactor was welded shut the control system did not detect that the pump had switched off. This resulted in the majority of the water (approximately 550,000 litres) from the main pool being discharged to waste.

While fixing the issue the control system for the leisure pool tripped, resulting in this also needing to be closed. While the pool was refilled by approximately 4.00pm on Saturday afternoon, the main pool remained closed until Wednesday morning so that the pool could be brought up to its operational temperature. The leisure pool was able to be reopened on Sunday.

An investigation into why this occurred and how any future reoccurrence can be prevented is currently underway.

Other operational items of note

- A proposed revised tradewaste agreement for the Waitane site has been drafted and sent to Silver Fern Farms. We are currently awaiting a response from Silver Fern Farms.
- Blue Sky Meats has advised the Council that it has extended the closure of its Gore plant until November.
- Ongoing CCTV investigations and condition assessment of problem stormwater and wastewater pipelines is ongoing.
- Following clarification of the health and safety requirements from WorkSafe regarding working on water, repairs to the aerators at the wastewater ponds are currently underway.

- Improvements to allow easier and safer maintenance access to the Actiflo plant have been completed.
- The steep screen at the Gore wastewater ponds was damaged due to gravel build up again and has been removed and is currently being repaired.
- A walkover of the Coopers Well to East Gore rising main has been completed. Leak Detection Services have also completed testing on the main to confirm there is no leakage along this line.
- Construction works for the upgrade of the Dolamore Park water treatment has been completed with a commissioning process currently underway.
- A letter has been sent to the property owners at 162, 166, 168, 170 and 172 Charlton Road requesting a formal commitment to connect to the proposed new water main.
- Otama water scheme - a new main along Kennedy Road has been completed and is now operational.
- A contract is currently out for tender for the ongoing maintenance of the Mataura wetlands.
- On 18 February a major water main break occurred on a 100mm cast iron water main at the intersection of Kitchener and Main Street.
- A leak in a chemical storage tank at the multisport complex has developed and is currently being repaired.

Departmental Updates

- Two new field staff started on 13 February.
- We are currently recruiting for a replacement Technical Officer.
- The Council will be participating in the BRANZ residential water use study over the next 2–3 years. The study aims to understand how, when and where water is used. The first phase of this study is a paper based survey that will be sent out to 3,000 randomly selected households across New Zealand.
- Opus is continuing to work on flood mapping of the Gore wastewater and stormwater networks.

Levels of service

- ✎ A copy of the 3 Waters levels of service for November, December and January are attached.

RECOMMENDATION

THAT the report be received.

2016-2017 Water Supply Levels of Service - November, December, January⁴

Council Outcome	Customer Levels of Service	Core Value	Performance Measures	Target 2016	Achieved
We have a quality infrastructure with potential for growth.	A potable water supply is provided in urban areas	Quality Safety	Compliance with the bacterial criteria of the NZDWS: (NFPM 1a)		2014-2015 Annual Winz survey compliance. Gore – Bacterial Compliance = Yes Mataura – Bacterial Compliance = Yes 2015-2016 Annual Winz survey compliance Gore – Bacterial Compliance = Yes 2016-2017 Annual Winz Survey is yet to be completed.
			Compliance with the protozoa criteria of the NZDWS: (NFPM 1b)	33%	2014-2015 Annual Winz survey compliance. Gore – Protozoal Compliance - No Mataura – Protozoal Compliance – No 2015-2016 Annual Winz survey compliance Gore – Protozoal Compliance - No Mataura – Protozoal Compliance – No 2016-2017 Annual Winz Survey is yet to be completed.
		Quality	Water quality complaints received (per 1,000 connections) (NFPM 4)	8	2015-2016 – Target Not Achieved – 14 complaints received 2016-2017 – Year to date – 4.14 complaints.
	A reliable service and effective response to queries	Sustainability	Real water losses from the reticulation network (NFPM 2)	23%	2015-2016 – Target Not Achieved - 66% Leak detection studies in 2016 have revealed that over half of the water supply is lost to leakage. Increased leak resolution programme is in place currently. 2016-2017 – Year to date - Yet to be completed.
		Reliability Responsiveness	Response to an urgent customer request (Urban, no water) (NFPM 3a)	60 min	2015-2016 – Target Achieved – 37 mins. (Median value used) 2016-2017 – Year to date – No complaints received.
		Reliability Responsiveness	Resolution of an urgent customer request. (Urban, no water) (NFPM 3b)	8 working hours	2015-2016 – Target Achieved – 1hr 52mins. (Median value used) 2016-2017 – Year to date – No complaints received.
		Reliability Responsiveness	Response to a non-urgent customer request (NFPM 3c)	5 days	2015-2016 – Target Achieved - 4.7 days (Median value used) 2016-2017 – Year to date – 7.8 days.
		Reliability Responsiveness	Resolution of a non-urgent customer request (NFPM 3d)	14 days	2015-2016 –Target Achieved - 4.9 days (Median value used) 2016-2017 – Year to date – 7.4 days.

		Sustainability	Average consumption of drinking water (NFPM 5)	550 L/p/day	2015-2016 – Target Achieved - 548 L/p/day 2016-2017 – Year to date – Yet to be completed.
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2016-2017 Wastewater Levels of Service - November, December, January⁶

Council Outcome	Customer Levels of Service	Core Value	Performance Measures	Current Target	Performance Monitoring/ Source	Target 2016	Achieved
We have a quality infrastructure with potential for growth.	A reliable service: effective response to queries	Reliability Sustainability	The number of dry weather overflows from Council's sewerage system, (per 1,000 connections) (NFPM 1)	New Measure	CRM database	1	2015-2016 – Target Achieved - No complaints received. 2016-2017 – Year to date – No complaints received.
		Reliability Responsiveness	Response to a customer request. (Blockage or fault) (NFPM 3a)	New Measure	CRM database Urgent – Blockage General – Fault	Urgent 120 mins General <8 hours	Urgent – 2015-2016 – Target Not Achieved - 820mins. (Median value used) General – 2015-2016 – Target Achieved - No complaints received. (Median value used) Urgent – 2016-2017 – Year to date- 50 mins. General – 2016-2017 – Year to date – 16 hrs.
		Reliability Responsiveness	Resolution of a customer request. (Blockage or fault) (NFPM 3b)	New Measure	CRM database	Urgent <8 hrs General 5 days	Urgent – 2015-2016 – Target Not Achieved – 14.9hrs. (Median value used) General – 2015-2016 – Target Achieved - No complaints received. (Median value used) Urgent – 2016-2017 – Year to date– 4 hrs. General – 2016-2017 – Year to date- 0.3 days
	Wastewater systems are effective and comply with environmental standards	Quality Health	Wastewater complaints received (per 1,000 connections) (NFPM 4)	New Measure	CRM database	<10	2015-2015 – Target Achieved – No complaints received. 2016-2017 – Year to date – 1.2 complaints.

Council Outcome	Customer Levels of Service	Core Value	Performance Measures	Current Target	Performance Monitoring/ Source	Target 2016	Achieved
We value and respect our environment.	Our waterways and environment are protected from adverse impacts of providing the wastewater service.	Health & Safety Reliability Sustainability Quality Social benefits	Compliance with Council's resource consents for discharge from its sewerage system measured by the number of abatement notices, infringement notices, enforcement orders and convictions (NFPM 2)	Abatement Notice - 0 Infringement Notice - 0 Enforcement Orders - 0 Convictions - 0	Annual Consent Compliance Reports.	AN - 0 IN - 0 EO - 0 C - 0	2015-2016 AN - 0 IN - 0 EO - 0 C - 0 2016-2017 - Year to date - Yet to be completed.

2016-2017 Stormwater Levels of Service - November, December, January

Council Outcome	Customer Levels of Service	Core Value	Performance Measures	Performance Monitoring/Source	Achievement	Target 2016	Achieved
We have quality infrastructure with potential for growth.	A reliable service and effective response to queries	Responsiveness	Response to a customer request (Flooding event) (NFPM 3)	CRM Database	New measure	60 min	2015-2015 – Target Achieved – No complaints received. 2016-2017 – Year to date – No complaints received.
		Quality	Stormwater complaints received (per 1,000 properties connected) (NFPM 4) Faults or blockages	CRM Database	New measure	8	2015-2015 – Target Achieved – No complaints received. 2016-2017 – Year to date – No complaints received.
	Homes and properties are not affected by surface flooding caused by the Stormwater Activity	Quality Health & Safety	Number of flooding events (NFPM 1a)	CRM Database	New measure	3	2015-2015 – Target Achieved – No complaints received. 2016-2017 – Year to date – No complaints received.
			Number of habitable floors affected per 1,000 connected properties (per event) (NFPM 1b)	CRM Database	New measure	2	2015-2015 – Target Achieved – No complaints received. 2016-2017 – Year to date – No complaints received.
		Quality Sustainability Social Benefit	Compliance with Council's resource consents for discharge from its stormwater system measured by the number of abatement notices, infringement notices, enforcement orders and convictions (NFPM 2a-d)	Annual Reports	New measure	AN - 0 IN - 0	2015-2016 AN - 0 IN - 0 EO - 0 C - 0 2016-2017 – Year to
We value and respect our environment	Our waterways and environment are protected from adverse impacts of providing the Stormwater service.						

						EO -0 C- 0	date – Yet to be completed.
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2016-2017 Solid Waste Levels of Service - November, December, January¹⁰

Level of Service	How it Contributes to our Council Outcomes	Specific Measure	Performance monitoring methodology/source (how do we measure, or where do we get data from)	Performance Target	Achieved
				Year 1	
Waste minimisation is promoted to improve the environment.	The reduction of waste disposed of reduces costs to residents and places less pressure on the environment. This has a positive impact on economic and environmental outcomes.	Volume of waste per capita being disposed of at the regional landfill.	Regional landfill weighbridge records	Material discarded <650kg per capita (across Southland)	2015-2016 – 6,552.37 tonnes. 2016-2017 – Year to date – This report is completed annually in July.

2. REPORT FROM THE TRANSPORT MANAGER

Mataura beautification

As scheduled, Central Western Roding arrived on site straight after Waitangi Day, got off to a good start then ran into some inclement weather. There was good progress with all plots being poured by Friday 24 February and back filled with soil by 1 March. These will be left fallow for several months before planting. Remaining to be completed are the pedestrian crossing with tactile pavers and the road markings. Coster park will have a garden installed as a part of this project.

Pyramid bridge

We took time out of this project to discuss with the industry the merits of requesting a design and build. The unanimous view was to go with a traditional approach – design and tender. MWH put a proposal to carry out full site investigations, design, tender documents and MSQA. It has prepared a timeline with the tender award date of 1 September 2017. The budget for the physical work has been allowed for in the 2017/18 budget. It is expected we should get interest from at least three contractors (Fulton Hogan, Downer and Southroads)

Footpaths

- To date there has been isolated pieces of footpath work, moss spraying and some surface stripping. Presently we are focusing on packaging several aspects of footpath work.
- Concrete work – repairing a number of faults around our concrete pavements, grinding of trip hazards, repairing broken up sections of footpath.
- Pavement replacement - we have developed a priority schedule of sealed footpath that need to be resurfaced. How much we get done will be governed by the rates we attract at the tender box.
- Tactile pavers - a programme of work to install a number of drop crossings around town with tactile pads was completed in January.

Resurfacing programme (Fulton Hogan)

A resurfacing programme worth \$995k begun in December with several streets being treated with a micro surfacing. This was followed in early February with the asphaltting of Irk St. The reseal programme also begun in mid-February and is expected to be completed by the end of March.

Roding contract (Downer)

Following the December decision by the Council, the Downer exited its branch in Gore on the 28 February. The scaling down of operation started in mid-February, with most staff finding employment with local contractors.

Unfortunately, there were a number of outstanding items of work that were left incomplete by Downer. The Council has been left in a position of employing the services of other contractors to achieve the specified level of service. The cost of engaging these contractors will be recovered from payments that have been withheld from Downer.

Roading contract (March–June 2017)

A proposal by a local consortium was received by the Council in late February to cover the core road maintenance work in the four month interim period.

Since approval was given in early February by the Emergency Committee, the staff have worked with the local group refining the proposed arrangement and also seeking NZTA's approval to procure the services as a closed tender. Contractual documents were drawn up and signed on 24 February.

An induction/introduction meeting was had with the whole team on 23 February. In attendance were Council staff, frontline contract staff and contractor directors. Steve Parry addressed the consortium at the start of the meeting with several Councillors joining the group for afternoon tea.

After a short briefing on 1 March the new team started work on the network and with Council staff taking a greater supervisory role, it is shaping up well so far.

Roading contract (July 2017)

The early departure of Downer from the Gore network left the Council needing to organise an ongoing contractual arrangement for the road maintenance delivery.

Given the failure of the previous maintenance contracts it was decided to workshop the contract delivery to determine the model that best suited the wishes of the Council. Chris Olsen (a roading procurement specialist) and Denis Mander were brought to Gore for several workshops. Both sessions were well attended by Councillors resulting in a decisive outcome and a clear direction going forward. It was determined the more traditional styling suited the Gore District best with a more hands on approach to supervision, programming and retaining asset knowledge more in house. As much as there was a strong desire to lead the contract, there was also the wish to work collaboratively with our delivery partner.

The process also determined a real drive to explore collaborating with other neighbouring networks with a preference to examine delivery opportunities with Clutha District.

Spraying

The first round of the roadside vegetation /noxious weed spraying has been completed. The State Highway vegetation spraying is underway. The weather has played a major part in holding up the contractor's progress but with the increase in fine weather they are now well underway.

Budget

- Programming is under way for metalling of gravel roads. Traditionally 11,000m³ are spread in one of four zones on a rotational basis. Our focus this year is targeting roads which need metal not necessarily in the allocated zone. Spot metalling continues where currently needed.

- Sealing for the year is well underway with 90% of the rural roads programmed having been completed. The urban sealing is due to start Monday 6 March taking approximately two weeks to finish.

Street lights

Discussions are progressing with PowerNet which is very keen to put a proposal to the Council about updating Gore's street lighting stock to LEDs. At the moment NZTA is offering an 85% subsidy for LED conversions.

Minor safety work

A parcel of work is being progressed at the moment, and will hopefully be out to market by the end of March.

Levels of service

- A copy of the roading levels of service for November, December and January are attached.

Branding on the new contractor's vehicles

**RECOMMENDATION**

THAT the report be received.

Statement of Service Performance – 2016-2017 – November, December, January

Council Outcome	Customer Levels of Service	Performance Measures	Target 2016	Achieved
We have a quality infrastructure with potential for growth.	Mandatory Performance Measure 1 (Road Safety) The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number	New Measure The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number	Number of Fatal and Serious Crashes ≤ 3	<p>2013-2014 – 1 fatal or serious crashes</p> <p>2014-2015 – No fatal or serious crashes</p> <p>2015-2016 – No of serious crashes was 2 with 4 people seriously injured. There were no fatal crashes.</p> <p>2016-2017 – Year to date – Yet to be completed.</p>
	Mandatory Performance Measure 2 (Road Condition) The average quality of ride on a sealed local network, measured by smooth	New Measure The average quality of ride on a sealed local network, measured by smooth travel	Urban <220 NAASRA	2015-2016 - Urban – All categories are below 220

	travel exposure.	exposure	Rural < 120 NAASRA	<p>2015-2016 – Rural – All categories are below 120</p> <p>2016-2017 - Urban – Year to date - All categories are below 220</p> <p>2016-2017 – Rural – Year to date - All categories are below 120</p>
	Mandatory Performance Measure 3 (Road Maintenance). The percentage of the sealed local road network that is resurfaced.	<p>New Measure</p> <p>The percentage of the sealed local road network that is resurfaced.</p>	4.4%	<p>2014-2015 – 49.628km Chipseal and asphalt was resurfaced = 13.7%.</p> <p>2015-2016 – 25.164km Chipseal and asphalt was resurfaced = 6.9%</p> <p>2016-2017 – This measure has not been updated in</p>

				the ONRC database.
	Mandatory Performance Measure 4 (Footpaths). The percentage of footpaths within a territorial authority district that fall within the level of service standard for the condition of footpaths that is set out in the territorial authority's relevant document (such as its annual plan, activity management plan, asset management plan, annual works programme, or long term plan)	New Measure The percentage of footpaths within the district that fall within the level of service standard for the condition of footpaths	Decreasing trend	2015-2016 – As this is the first year of data collection, Council is unable to conclude on this measure however there has been 750.2m of footpaths repaired. 2016-2017 – Year to date – 295.3m of footpaths has been repaired.
	Mandatory Performance Measure 5 (Response to Service Requests). The percentage of customer service requests relating to roads and footpaths to which the territorial authority responds within the timeframe specified in the long term plan.	New Measure The percentage of customer service requests relating to roads and footpaths to which the territorial authority responds within the timeframe specified in the long term plan.	95%	2015 – 2016 This is currently being developed - From 1 January 2016 - 30 June 2016 – 46% 2016-2017 – This is currently being developed – Year to date – 65.4%
	Unsealed roads are maintained to ensure	The percentage of respondents to the	78%	2016 - Gore -

	they are fit for purpose	Gore District Council annual Resident Survey within the range of neutral to very satisfied.	Target Achieved - 79% Mataura – Target Not Achieved 67% Rural – Target Not Achieved 40%. There was dissatisfaction with the gravel type being used, this has since changed to a different gravel type.
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3. UPGRADING WATER TREATMENT PLANTS - STRATEGY REVIEW

(Memo from Chief Executive - 20.02.17)

For some time now I have been concerned at the clarity of direction in regard to the upgrading of our urban water treatment plants to comply with New Zealand drinking water standards, and in the instance of parts of the Gore network, to remove manganese from the supply. My concerns centred around the proliferation of reports and studies into options with the sum total appearing to be a paralysis obtained via excessive analysis. Further, recent test results for manganese conducted at the Jacobstown and Coopers Well sites suggest that the Council has insufficient knowledge of the extent of the problem to be able to confidently embark on major capital expenditure in pursuit of its resolution.

Senior Council staff convened a strategic review meeting late in January. The purpose of this meeting was to correctly review past efforts, probe assumptions and see if the benefit of a cross-pollination of ideas and disciplines present at the meeting could lead to a more definitive and cost-effective strategy. This report outlines the thinking on a way forward that emerged from this productive meeting.

Ultraviolet treatment

As early as the Council's first Long Term Plan in 2006, the installation of ultraviolet treatment for urban water supplies was mooted. At the meeting of senior staff which also included Mr Shokit Ali from Signal Management Group and Mr Murray Petrie from Opus Consultants, I tabled excerpts on water treatment from the past four Long Term Plans. The point I tried to make was that successive iterations of the Long Term Plan all mentioned the impending installation of ultraviolet treatment to the Council's urban water supplies, but were also accompanied with a degree of equivocation. This equivocation related to uncertainty as to the future role to be served by each of the three water treatment plants in Gore and Mataura. However, the net effect of a decade of playing out various options and analysis, is that no ultraviolet treatment has been introduced to either the Gore or Mataura water supplies.

The benefits of ultraviolet treatment are not in dispute. Whilst the Council has a reasonable level of treatment for its water supplies, ultraviolet treatment could best be described as a "belts and braces" approach to ensure that more aggressive water-borne bacteria such as cryptosporidium and giardia are eliminated.

Prior to the strategic meeting, there were some schools of thought that the ultraviolet treatment plant could not be installed before manganese removal measures were completed. Discussions with the Opus representative at our meeting revealed that this was not the case and therefore installation of ultraviolet treatment should be accorded a priority.

It is therefore proposed to install ultraviolet treatment plants at both Mataura and the East Gore water treatment plants. The intention is to install the ultraviolet treatment of East Gore by early next year, followed by Mataura shortly afterwards. The

concentration of treatment at East Gore aligns with the conclusion reached with Councillors last year that the East Gore site should be the principal water treatment facility for the Gore township. For some unknown reason, the Mataura plant was not scheduled to receive ultraviolet treatment until 2020. This change of approach, if approved by the Council will shuffle the project forward to ensure that consumers in Gore and Mataura receive the same level of treatment and protection for their water supplies. A sum of \$1,356,603 is set aside for the Mataura project.

Pipeline under the Mataura River

The latest incarnation of the Council's water treatment strategy provides for a water main to be installed under the Mataura River to allow for water treatment processes to be concentrated on the East Gore plant. This is still the intention with a LINZ-accredited property consultant working with LINZ to secure the necessary approvals for the proposed pipeline to pass under Crown land. In addition Hadley and Brunton, a specialist directional drilling firm from Timaru, has visited the Council with a view to undertaking the drilling work once approvals from LINZ have been received. Subject to the requisite approvals being received, it is hoped that the drilling and installation of the new pipeline can be completed by this calendar year.

Manganese removal

A sum of \$1,614,090 is set aside in the current financial year of the Council's 2015-25 Long Term Plan for the removal of manganese. This project was incorporated in the Long Term Plan in response to a spate of instances where manganese in the water supply in North Gore became evident by linen and clothes being irreparably stained during washing. Whilst the manganese is not injurious to health, it is a significant aesthetic blemish that naturally concerns people. At the time of incorporating the project in the Long Term Plan, the source of the problem was considered to be the Jacobstown well. Therefore amendment of the treatment process used at the Hilbre Avenue plant, which receives water from the Jacobstown well, was considered to be the correct way to resolve the problem.

However there are a number of problems with this approach. The first significant problem we have struck is that recent tests at Jacobstown have revealed that manganese levels are far less than what was anticipated and presently do not constitute a problem for water treatment in its present form. On the other side of the coin however, tests recently conducted at Coopers Wells have shown the existence of manganese where previously this has not been known to be present.

The collection of data in regard to the occasions where manganese is present via consumer complaint and the prevailing conditions at that time, are also relatively unsophisticated. Whilst the Council holds data in regard to a number of dirty water complaints, it is not known whether these relate to manganese or some other reason such as flushing of the network. In addition no information is kept about the level of the wells at that particular time, or any other aspects in regard to maintenance of the network that may have had an impact.

We therefore believe that a far more comprehensive data capture process needs to be instituted to develop some proper intelligence about the extent of the manganese problem. The data capture would involve obtaining a sample of the dirty water in question in order that it can be properly analysed. Given that there are approximately 25 dirty water complaints in Gore each year, it behoves the Council to undertake some serious analysis before it launches with what could be an expensive seven-figure attempted solution that misses the mark.

Solidifying the approach of further analysis has been a discovery of an option of treating any build-up of manganese within the network via a specialised truck that is set up for the purpose, and is based in Australia. Given the low levels of manganese currently being recorded at source, we have wondered whether the sporadic event of manganese being present in our water supply is a disturbance in the network resulting in built-up levels of manganese being released into the supply. If this was the case, a dedicated flush of the network via the specialised plant may be all that is required. A separate report on this matter appears elsewhere in the agenda.

Powdered activated carbon treatment

Powdered activated carbon treatment is a process that is applied at the start of the new water treatment process. The process is designed to resolve taste and odour issues. Whilst it has a low capital cost (ie approximately \$128,000) it has high operation costs.

The existing strategy was to have a PAC treatment introduced in the Mataura Plant.

With only two complaints being received about odour and/or taste in regard to our urban water over the past 18 months, staff consider this process, which is not part of NZ Drinking Water Standards compliance, can be postponed for the time being.

Conclusion

This strategy review meeting, replete with enquiring minds and some provocative questions has certainly provided a more definitive view on the extent of the Council's water treatment issues, the inconsistencies with the present approach and the need for more clarity on purpose and rationale. Significant strides in the quality of the Council's water treatment process will be achieved when ultraviolet treatment plants are installed at the Mataura and East Gore plants within the next 18 months.

The extent of the problem with manganese at either source, or within the network, requires a further analysis and testing for any project aimed at eliminating this issue is advanced. Further testing and a flush of the network with a specialised process designed to do this task, could result in the Council not needing to expend a large amount of capital.

RECOMMENDATION

THAT report be received,

THAT the Council endorse the revised strategy for water treatment in Gore and Mataura,

THAT the Council note the strategy involves the deferral of installing plant to eliminate manganese from the Gore water supply until more tests, which can accurately identify the source of the problem, have been conducted,

AND THAT the Council note that given the low number of complaints about odour and taste in Mataura, the proposed PAC treatment for the Mataura plant be postponed.

4. MANGANESE AND IRON ISSUES WITHIN GORE WATER RETICULATED NETWORK

(Memo from 3 Waters Project Manager – 2.03.17)

A strategy review in regard to the upgrading of our urban water treatment plants to comply with the New Zealand Drinking Water Standards (NZDWS) and the removal of manganese and iron was undertaken in late January. One aspect of this review was the insufficient knowledge centred around the manganese and iron complaints that the Council was receiving from the public.

This report aims to further address the manganese and iron issues staff have identified plus discusses a proposal received from Detection Services which has a specialised truck for flushing networks.

Background

In early 2016 staff commissioned Opus to provide concept plans for the manganese and iron removal and meeting the NZDWS at the Hilbre Avenue water treatment plant which was scheduled to be the first of the major water treatment plant upgrades, as per the Long Term Plan. The concepts indicated that a lack of space in addition to the plant being within a dense residential area presented significant risk to the Council due to the likelihood of cost blowouts. There was also an unpalatable level of health and safety risk to neighbouring residents due to the additional chemicals required to treat the water.

Staff held a workshop with the Council which presented various treatment plant upgrade scenarios. The Council indicated a preference for combining the Hilbre Avenue and East Gore treatment plants as, although this option was likely to exceed the LTP budget, it presented the lowest overall risk.

As part of the concept design, Opus suggested a manganese and iron sampling regime should be implemented for 3 months to further understand the issues. Previous samples were derived from dirty water complaints which had arisen. This appeared to be reaction based and did not necessarily paint a full picture of the quality of water being drawn from the Jacobstown bores. Manganese and iron issues also surfaced at Coopers Well due to testing undertaken by Environment Southland.

Analysis to date

Test results taken over a three month period to date show that the average manganese level at Jacobstown is 0.011mg/l and 0.0012mg/l at Coopers Well. The maximum acceptable value before dirty water arises is 0.04mg/l. The average iron level at Jacobstown is 0.039mg/l and 0.0006mg/l at Coopers Well. The maximum acceptable value for iron is 0.2mg/l.

Results to date suggest to staff that dirty water complaints are due to build-up of manganese and iron over the 60 year average age of the reticulated network compounded by an 'event' occurring on the network such as a water shutdown or a large water draw off. Staff have developed a system for further identifying issues as

complaints are received from the public to get further understanding of the issues. Analysis over the past year and a half indicates that Mataura has as many dirty water complaints as Gore.

NO-DES truck

A proposal has been received from Detection Services to supply and operate a 'NO-DES' truck. The system was originally developed for use in dry areas such as California and Mexico where hydrant flushing programmes were deemed unacceptable due to large water losses. Detection Services, which the Council has engaged to undertake its leak detection work, acquired a NO-DES truck primarily for use in Northern Australia.

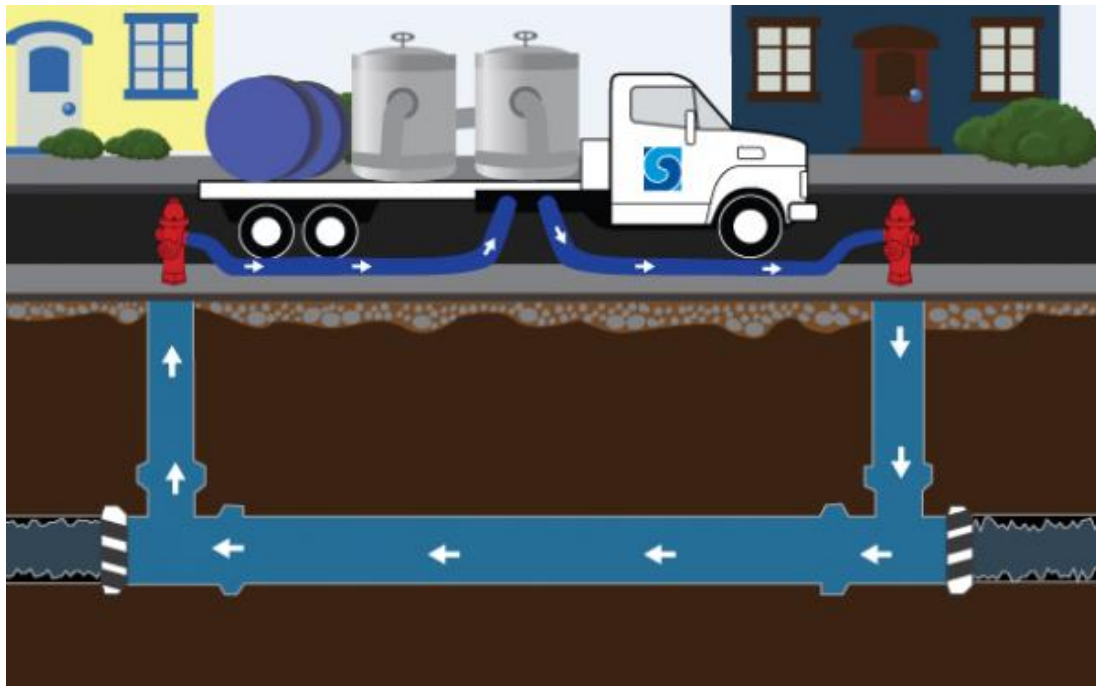


Image showing operation of 'NO-DES' Truck

The NO-DES truck is effectively a water treatment plant with an array of filters mounted on a truck. The truck creates a temporary loop in the reticulation system by connecting to two fire hydrants and then uses a variable speed drive pump to circulate water through the loop at well above the self-cleansing velocity of the water main, in a reverse direction. Test results are supplied, both before and after cleaning occurs, to give the Council confidence that the truck is successful.

Detection Services have provided the following costs to staff:

- \$11,050 – mobilisation from Australia
- \$77,425 – cost for flushing the Gore reticulated network (14 days completion)
- \$33,204 – cost for flushing the Mataura reticulated network (6 days completion)

This price does not include filter bag replacements (\$295 per set) or accommodation for operators. Traffic management is to be provided by staff.

Risks and minimisation strategies

Dirty water complaint increase – The truck can flush up to 6km of reticulated network per day. If approved it is proposed to issue a letter drop to effected residents asking them not to draw water while the truck is operating. This should minimise dirty water issues.

Additional filters – Detection Services believes that filters need to be replaced every 1-2 days, although it did note that on some networks filters have only lasted 20 minutes before requiring replacement. A contingency of \$20k has therefore been built into the recommendation, to allow for extra filters.

Mobilisation cost – Liaison has taken place with neighbouring councils to seek further interest in the truck with the aim of reducing mobilisation costs. Clutha District Council has expressed interest to date.

Effectiveness in the removal of contaminants – It is difficult to identify any reason why contaminants would not be removed by this truck. If the truck does prove unsuccessful, or a huge amount of public complaints are generated, the Council isn't obliged to complete the whole network.

Increased pressure circulating water through an aging network – Although water pressure does increase while running through the truck, the increase is not deemed significant enough to cause any issues to existing infrastructure.

How long until complaints arise again? – It is not envisaged that the Council can flush the network once and then leave the network for another 60 years. A testing programme should be developed to understand the build-up of contaminants within the network and identify the next step forward.

Conclusion

Staff believe that the condition of the aging network in conjunction with 'events' on the network significantly contribute to dirty water complaints received by the public. It is envisaged that a standard hydrant flushing programme would be unacceptable due to the likelihood of dirty water complaints and the appearance to the public that the Council is wasting water, given the yearly water restrictions.

The NO-DES truck presents a solution which would give the Council a very good understanding of the amount of contaminants within its network and also help develop a network maintenance programme which could eliminate the need for \$1.6m to be spent on a dedicated treatment facility.

RECOMMENDATION

THAT the report be received,

AND THAT \$155,000 of the \$1.6m proposed for the manganese and iron removal is used to accept the proposal put forward by Detection Services.

EXCLUSION OF THE PUBLIC

Cr Davis to move

I move that the public be excluded from the following parts of the proceedings of this meeting, namely the items as listed below.

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

<u>General Subject Matter</u>	<u>Reason for passing this resolution in relation to each matter</u>	<u>Grounds under Section 48(1) for the passing of this Resolution</u>
Ajax pump station project update	Enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations).	7(2)(i)