

Vivienne Harvey

From: Bruce Hendry <tb.hendry@actrix.co.nz>
Sent: 5 June 2015 11:42 a.m.
To: Sue Bidrose
Subject: South Dunedin Stormwater
Attachments: June 2015 flood.docx

47 Greenacres Street

DUNEDIN 9014

CEO DCC

8 June 2015

Dear Sue

Further to my email sent to you on Friday about the South Dunedin flooding, I thank you for your prompt response.

No doubt you will have read the 1968 report sent to you by my old boss T J Williams and his comments and found it very informative.

I have listened to some radio talkback programmes and am now convinced a major cause of the problem was blocked mudtanks.

I know that there is always a problem when the first rain occurs after the autumn fall. This is why the use of street washers was an advantage because of their ability to clean the gutters even when there are cars parked. There will be more parked cars now than when I was involved in street cleaning. Although street washers only ensure that gratings are clear this is the most likely cause of blockage. Used properly then operator would detect if the tank needed sump cleaning and act on this.

It is a pity that residents have always been reluctant to lift debris from gratings

There always the need to have mudtank sumps emptied regularly using gully emptier vacuum trucks but this is not a blockage that occurs as often especially when roads are sealed.

I believe there needs to be a review of the street cleansing and mudtank maintenance programme especially on flat areas.

When I calculated the size of pipes needed the volume of pipe storage was taken into consideration as it was the intention for the Portobello Road pumps to keep the reticulated system empty. I hope the pumps are not now programmed to have the system flooded before rain starts or that starting of the pumps was later than it should have been. Pump logs should be compared with rain fall records. .

Please make the Mayor aware of the 1960s programme of the renewal of the stormwater pipes in this area.

My wife thought, at my age, I should not get involved with this matter but I know that when I designed the renewal of the reticulation and my colleagues designed the Portobello Pumping Station we did a good job. The people who suffered unnecessary cost and flooding because of poor present day maintenance by contractors or poor management of the system they should not need to face this again apart from the cost to ratepayers. I convinced her that if I could help, I should.

On another matter I referred to a blocked culvert in Conway Street Macandrew Bay that caused a lot of damage to grounds of the school and play centre. I am not involved with the school or play centre now but I observed an impressive working bee there on Saturday cleaning up the mess. If my recollections are correct the concrete intake was constructed by the Peninsula County following the 1968 rainfall just before the County amalgamated with the city. Staff we inherited from the County regularly checked it to ensure it was not over grown. It had a grating that has been missing for some time but the contractor working for the council it found on Sunday, damaged and useless. Because of the nature of the water course it serves and the serious damage that can be caused this grating needs be renewed without delay. There could be another heavy rain anytime soon.

Bruce Hendry

Phone 4761304

Grace Ockwell

From: Laura McElhone
Sent: Tuesday, 9 June 2015 12:22 p.m.
To: 'tb.hendry'
Subject: RE: Flood info

Thank Bruce,
I have already received a copy of the flood report that you referenced and we are reviewing this as part of the follow up works.

Regards
Laura

-----Original Message-----

From: tb.hendry [<mailto:tb.hendry@actrix.co.nz>]
Sent: Tuesday, 9 June 2015 12:08 p.m.
To: Laura McElhone
Subject: Re: Flood info

----- Original Message -----

From: "Laura McElhone" <Laura.McElhone@dcc.govt.nz>
To: <tb.hendry@actrix.co.nz>
Sent: Monday, June 08, 2015 8:52 PM
Subject: Flood info

Dear Bruce,

Thank you for the information provided in your correspondence with Sue. We spoke in the immediate aftermath of the floods. I apologise if I was a little curt with you at that time but as I am sure you can appreciate it was a rather stressful time.

At this stage I have briefly reviewed the flood report from your colleague and we are currently reviewing the pumping station performance, pump regime, rainfall and flow patterns during the event to identify any issues with how the system operated during the event. We will bear in mind your comments regarding the way the system was designed to operate as part of that review.

For your reference, the stormwater from the area that you described as the Tainui low levels no longer discharges to the Musselburgh pumping station. There is now a stormwater pumping station adjacent to the Musselburgh pumping station which transfers this water to the Portobello pumping station.

My understanding is that the mud tank maintenance records are also being reviewed by the relevant team.

Regards
Laura McElhone

Sent from my iPhone

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immediately; you are warned that any further use, dissemination, distribution or reproduction of this material by you is prohibited.

Thank you and I appreciate the pressure you were under as I have been there myself at times. Just to as always Taianui Low level always drained to Musselburgh PS from where it is pumped to join the South Dunedin system at the corner of Andersons Bay Road and Portobello Road.

I suggest you ask the CEO for a copy of the City Engineers Report on the March 8th 1968 storm sent to the CEO by [REDACTED] last week. It is a very comprehensive report on the drainage system.

Bruce H

Grace Ockwell

From: Vivienne Harvey on behalf of Sue Bidrose
Sent: Wednesday, 17 June 2015 10:38 a.m.
To: 'Bruce Hendry'
Cc: Laura McElhone; Doug Hall
Subject: RE: My final correspondence on Flood

Dear Mr Hendry

Thank you for your further correspondence regarding the stormwater system and the performance of mud tanks during the recent flood.

I have referred your letter to Laura McElhone, Group Manager Water and Waste, who will respond to direct on my behalf.

Regards

Sue

Dr Sue Bidrose
Chief Executive Officer
Dunedin City Council

50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 474 3851
Email: Sue.Bidrose@dcc.govt.nz



 Please consider the environment before printing this e-mail

From: Bruce Hendry [<mailto:tb.hendry@actrix.co.nz>]
Sent: 12 June 2015 2:47 p.m.
To: Sue Bidrose
Cc: Doug Hall
Subject: My final correspondence on Flood

47 Greenacres Street

Macandrew Bay

CEO DCC

12th June 2015

My final correspondence on the flooding

The surface water has gone and the priority of helping those affected seems to be in good hands. The follow up must be how this happened, why this happened and what needs to be done to prevent a re-occurrence.

Rainfall records being researched by [REDACTED] show this was not a record rainfall and we are sure the reticulation and pumps are able to cope with a storm of this intensity if maintained and operated correctly.

Yesterday I had a short discussion with Doug Hall and Andrew Wylie. I have had association with Doug for many years and respect him as a practical hard worker. I gave them a copy of the City Engineers 1968 storm report and this note..

I have spent a couple of hours in the area of South Dunedin where I spent most of my working hours for a few years over fifty years ago. Just to refresh my fading memory. There is no doubt the whole area is well served with the correct placing of mud-tanks (MT) **BUT** the blockage of any one MT creates a potential for local flooding. Even with the best maintenance there is always a chance of a MT blocking.

In some cases, but not all, if a MT blocks, rising water can flow to the catchment of the next MT without seriously flooding property.

I am concerned the recent, and no doubt expensive, alterations to the kerb and channel layout with intrusions onto the carriageway mainly at intersections, will hinder the on-flow of surface water from one MT catchment to the next and compound possible flooding. (Examples of this are at Shore Street/Musselburgh Rise, Market Street/Tedder Street, Richardson Street/Moreau Street and Hargest Cres./Coughtrey Street/Forbury, New Street/Prince

Albert Road and all along Bellona Street). There may be more. I cannot see the useful purpose of this work.

I have followed statements that have been published in the ODT and if these have been correctly reported there are some to be questioned.

On page 1 on June 8th your contractor disputes claims of drains blocked. No doubt there were no blocked drains but residents often refer to MTs as drains. This is the article with the classic response from [REDACTED] of "Hell no" when asked if plants should grow in mudtanks.

On page 5 of the ODT on 9th June your staff report burst pipes in Sandringham Street. I could not envisage enough water pressure to burst a pipe so I had a look there today and saw repairs where a manhole has appeared to have surcharged. Incidentally Sandringham Street does not contribute to the South Dunedin System but to the Forbury Road aqueduct with an ocean fall.

I have a problem comprehending the thoughts about road surface damage because of fine material being washed away but this is not an issue at present.

On page 4 in the ODT of 10th June I agree with the comments made by a [REDACTED] [REDACTED] He has his fact right about previous maintenance and if he is right about the lack of gully emptier equipment held by the present contractor there is reason to be concerned.

When I was first involved in contact supervision many years ago a very good contractor told me I had a duty to the unsuccessful tenderer to ensure work was done to the specification. Either work is not being done to the specification or the specification needs to be reviewed.

I am very surprised to read that **"mudtanks found to be within acceptable limits –typically less than half –full of silt and with the grates free of debris require no further action"**.

Because of the width of the carriageways in South Dunedin and St Kilda nearly all MTs are standard No 1 design. The depth of these is 1m. The invert of the 225 inspection half trap is 300 mm from the bottom of the sump (Refer to DD&SB Plan F298). If the sump is half full and has 500mm of silt it is either blocked or soon will be.

There are 2 ways a MT can stop working

- (a) The sump is silted up.
- (b) The grating is blocked

There is a chance some resident could clear a grating (not often) or a chance water flow may clear the grating. There is no way an overfull silted sump can be cleared by a resident or water pressure. It must be cleaned out by lifting the grating and using a special sump shovel or vacuum truck.

If the Council audit on the 30th April found 1 in 5 mudtanks blocked it is not surprising there was flooding. If there are 1900 MTs 380 would be blocked. As this storm occurred soon after the autumn leaf fall there would also have been some grating blockages. I was also disappointed at the amount of leaves and debris and the untidy appearance of the gutters and MT gratings that I saw in spite of the rain.

I am sure that all of the people who have needed to lift carpets from their home would agree the **“return to the gold plated, inefficient service which the Council has moved away from 12 years ago”** is what should happen.

I do not believe rising sea levels to be a cause with a sealed and pumped system. Rising ground water levels could be caused by us installing a sealed stormwater system where only private stormwater drains or mudtanks are only way water can get picked up. It replaced an old system of unjointed pipes that probably acted as field drains that would have kept the water level down. I wrote to you in June 2014 about this.

With respect to the surcharge of waste water. Infiltration of stormwater into foul drainage system will always be a problem. Some reduction may be made by constantly inspecting individual properties to ensure storm water is not being discharged into the foul drains but it needs to be an on- going process with the Kiwi do it yourself attitude.

Surrey Street foul sewer has been a problem for years and no doubt will continue to be a problem unless remedial work is undertaken. It is not an easy problem to fix. We installed a seat of the pants connection between the foul and stormwater systems in Hillside Road near Eastbourne Street (would now be illegal) but its usefulness is in doubt.

The June 2015 rainfall over a long period is more likely to create problems with foul sewers because of the longer intensity time the system has.

Portobello Road stormwater Pumping Station has an intensity time of 43 minutes.

One of the problems with the council out sourcing work is the loss of staff experience. Ask a consultant the time and he will want to borrow your watch and you need to pay him to learn what you already know.

There are problems to be solved.

Bruce Hendry



DATE 18.6.76

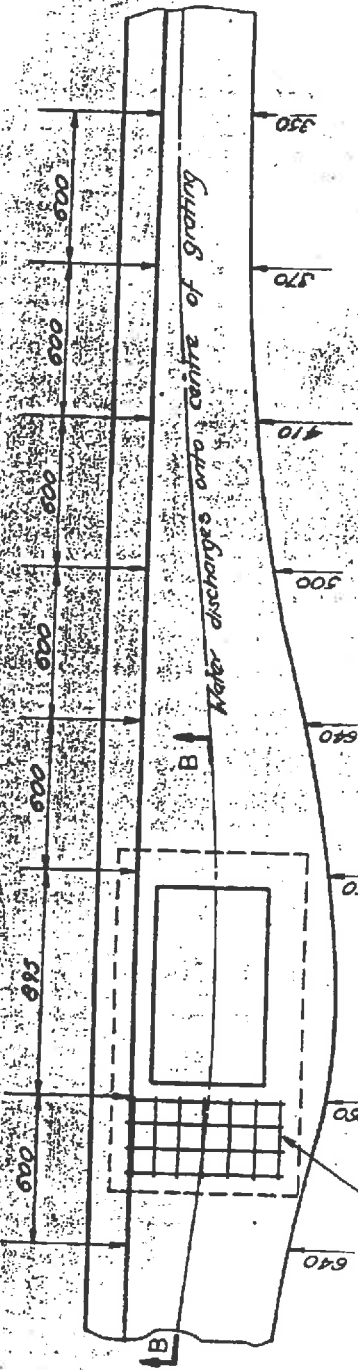
F-298

SCALE 1:20
DRAWN C.V. Davies
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DUNEDIN DRAINAGE AND SEWERAGE BOARD

SINGLE NO. 1, MUDDTANKS

SECTION ELEVATION B-B ON GRADES

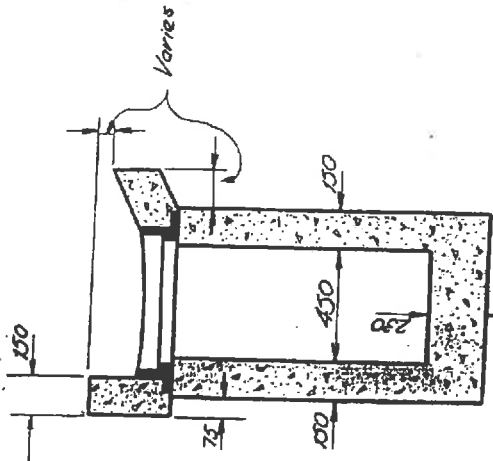
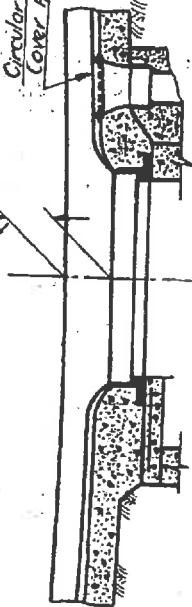


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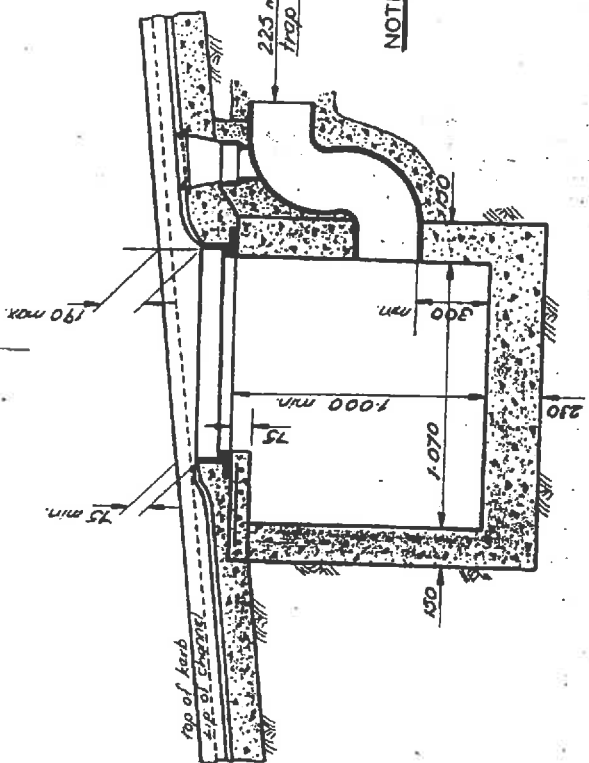
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SECT. ELEV. B-B
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TYPICAL CROSS SECTION
NO 1 MUDDTANKS



NOTES ALL GRATINGS TO BE SET LEVEL EXCEPT ON STEEP GRADES WHERE THE GRATINGS ARE TO BE SET AS NEAR LEVEL AS MAX. & MIN. KERB HEIGHTS ALLOW. FRAMES TO BE SET IN MORTAR.

top of kerb
z.p. of 50/225

47 Greenacres St
Macandrew Bay

His Worship
Mayor of Dunedin

1st July 2015

Dear Sir,

Re. your statements relating to the South Dunedin Stormwater System.

(1) I have read statements you have made in the papers and again on the Radio Dunedin talk back last Saturday morning. I think in fairness to you, I should endeavor to enlighten you on some facts.

The Stormwater System

(2) Firstly the South Dunedin stormwater reticulation is not as old as you believe. I spent several years in the 1960s designing and supervising the renewal of the stormwater sewers in the area bounded by Andersons Bay Road, Forbury Road, South Road and Bay View Road. This work had been started before the 2nd world war when some work was done in Hillside Road and Macandrew Road. The two major aqueducts in Andersons Bay Road, and what is now Timaru Street and the St Kilda aqueduct existed. In the area referred to, old unjointed pipes in most footpaths were replaced with sealed and tested pipes of various designed sizes. However the only way that water can get into the new pipes is through mudtanks or private drain connections. (Refer to Para 10 below)

(3) Darrel Robinson continued this in the St Kilda area after I was transferred to the Roothing and Street Cleansing section of the City Engineer's Department.

(4) The Portobello Road Pumping Station had not been commissioned at that time. Now the pumps there adequately drain this area. (Refer to the correspondence from T J Willaims)

Limits of the Catchment area

(5) Although there are hills on two sides of South Dunedin surface water from the hills does not, or should not, enter the South Dunedin catchment, as you seem to believe. I suggest you read a report prepared by T J Williams who was Deputy City Engineer and later City Engineer following the rain in 1968. There is also an email that [REDACTED] sent to Laura McElhone on 21st June 2015 and acknowledged by Chris Henderson referring to the waste water problem and analyzing rain records showing that the June 2015 rain should not have caused flooding of stormwater in South Dunedin..

(6) I have already sent emails to the your CEO on 5th June and 7th June 2015 relating to this June event.

The cause of the Flood

(7) It is apparent the flooding was caused by, blocked mudtanks, (if a mudtank is half full, which is said to be the test), it is blocked, blocked screens in Portobello Road, or pumps at the Portobello Road pumping station not being operated correctly. The flooding could be a combination of any of these but the cause needs to be determined. Another possibility I have not referred to in my earlier correspondence is the silting up of trunk stormwater sewers or aqueducts. I just did not think this would have been allowed to happen. The surcharge of wastewater should have been limited to the Surrey Street area and certainly need to be reviewed.

Rising Ground Water

(8) Rising groundwater cannot be caused by rising sea levels because the sea has not risen significantly yet. The Beca Options Report prepared for the Council on 8th July 2014 in Scenario A in Table 1 on Page 3 shows a Sea level rise of 0.30m above 1990 MSL by 2040.

(9) Dr John Hannah, retired Professor of Surveying Otago University has made a study of sea levels figures for Dunedin using data from 1899 –2013 inclusive. The linear sea level rise over that period has been 1.29 +/- 0.08 mm/yr (the +/- 0.08 mm/yr is the standard deviation). This result should be in the process of being published in the Journal of Geophysical Research. In addition, GPS data from the last 15 years shows no evidence of any regional land uplift or subsidence. Dr Hannah reports the definitive number for sea level rise in Dunedin is 1.29mm/yr. At this stage the local tide gauge data does not show any evidence of an acceleration in the rate of sea level rise.

(10) On 20th June 2014 I wrote to Councilor Benson-Pope following a newspaper report on Thursday 18th June 2014 when rising ground water was being considered following the release of Beca Report. In that letter I wrote. _ “It is possible that un-jointed pipes acted as field drains and replacing them with tested sealed lines (refer to Paragraph 2 above) has denied the collection and disposal of rain water that falls on other than roofs and sealed surfaces” . This is supported by the article below the heading “Bore research shows water table on the rise” on Page 15 of the ODT on 13th June 2015 where Dr Gavin Palmer of the Otago Regional Council reports “The bores show the ground water was 93% seawater closer to the coast, but much closer to freshwater further inland.”

Sub soil Drainage

(11) The Beca Report in the last paragraph on Page 12 suggests a “proposed intervention strategyto provide passive subsurface drainage”. I could look at the construction plans I prepared in the 1960s and suggest locations where experimental connections could

be made to the lengths of the original un-jointed pipes that still remain to determine if they could be used as "field drains" to lower water levels. It would be relatively inexpensive connection. Feel free to contact me if you think I can assist with this. Phone 4761308

(12) There is a risk of excessive dewatering of soils could cause ground shrinkage affecting masonry fences and buildings. This is also mentioned in the Beca Report.

Conclusion

(13) I have not gone public with my comments as I prefer to deal with the Council directly, but I feel for the people in South Dunedin. Many of them have nothing and now they have less. Those who own their homes have had them devalued and a repeat could see them having trouble getting insurance cover.

(15) I believe the Council now needs support these people with changed maintenance and street cleansing programme to ensure there is no repeat of flooding caused by rains below the design intensity. By making these changes public in time the area will get back the confidence it deserves without lowering property values.

Yours faithfully

T. Bruce Hendry MNZIS (Retired)

Grace Ockwell

From: [REDACTED]
Sent: Monday, 6 July 2015 02:44 p.m.
To: 'tb.hendry@actrix.co.nz'
Subject: Acknowledgement from the Mayor's Office to Mr Hendry - FW: South Dunedin Flooding -
Attachments: letter to Mayor.doc

Dear Mr Hendry

On behalf of the Mayor, thank you for your email, which has been forwarded to the General Manager Infrastructure and Networks for consideration, and a response back to you directly, if required.

Yours sincerely

[REDACTED]
Personal Assistant to the Mayor of Dunedin
Dunedin City Council

50 The Octagon, Dunedin 9016; PO Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: [REDACTED], Fax: 03 474 3594
Email: [REDACTED]@dcc.govt.nz; www.dunedin.govt.nz

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Grace Ockwell

From: [REDACTED]
Sent: Friday, 31 July 2015 05:31 p.m.
To: Ruth Stokes; [REDACTED]
Cc: mayor@dcc.govt.nz
Subject: FW: Acknowledgement from the Mayor's Office to Mr Bruce Hendry - - RE: South Dunedin Flood - and email to Ruth Stokes to for a member of her team to reply to Mr Hendry direct

Dear Ruth/[REDACTED]
I leave it with you/the appropriate staff member in your team, to provide a response direct to Mr Hendry please, with a copy to the Mayor for his information.

Thank you
[REDACTED]

From: [REDACTED]
Sent: Friday, 31 July 2015 5:28 p.m.
To: 'Bruce Hendry'
Cc: mayor@dcc.govt.nz
Subject: Acknowledgement from the Mayor's Office to Mr Bruce Hendry - - RE: South Dunedin Flood

Dear Mr Hendry

On behalf of Mayor Dave Cull, thank you for your email.

Please accept this email as acknowledgement of your correspondence.

As your correspondence is of an operational nature, it has been forwarded to the General Manager Infrastructure and Networks and her team for consideration.

The appropriate Council officer will action a response to you directly.

Thank you for taking the time to write to the Mayor.

Yours sincerely

[REDACTED]
Personal Assistant to the Mayor of Dunedin
Dunedin City Council

50 The Octagon, Dunedin 9016; PO Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 [REDACTED] Fax: 03 474 3594
Email: [REDACTED]@dcc.govt.nz; www.dunedin.govt.nz

 Please consider the environment before printing this e-mail

From: Bruce Hendry [<mailto:tb.hendry@actrix.co.nz>]
Sent: Thursday, 30 July 2015 9:47 a.m.

To: mayor@dcc.govt.nz
Subject: South Dunedin Flood

47 Greenacres Street
Macandrew Bay
Dunedin 9014
Phone 476 1308

His Worship
Mayor of Dunedin

30th July 2015

Dear Sir,

On 1st July 2015 I wrote to you under the heading:-

Re. your statements relating to the South Dunedin Stormwater System.

I had this correspondence acknowledged by [REDACTED] your Personal Assistant who said on your behalf, "my correspondence had been forwarded to the General Manager Infrastructure and Networks for consideration and a response back to you directly, if required".

After nearly a month I have had no further contact.

In the last two paragraphs I wrote

'I have not gone public with my comments as I prefer to deal with the Council directly, but I feel for the people in South Dunedin. Many of them have nothing and now they have less. Those who own their homes have had them devalued and a repeat could see them having trouble getting insurance cover.

I believe the Council now needs support these people with changed maintenance and street cleansing programme to ensure there is no repeat of flooding caused by rains below the design intensity. By making these changes public in time the area will get back the confidence it deserves without lowering property values.'

I still feel strongly for these people and see it essential the Council admit to the failure of maintenance or operation of the South Dunedin stormwater system. I will not be silent on this matter because of the long term and unnecessary devaluing of properties. I do not own property in South Dunedin so I am not personally affected.

I don't attribute blame on present staff, as it is obvious to me they do not have the knowledge or experience to have known better. This is the price the Council pays for out sourcing and employing staff without the necessary skills. The fault is not theirs.

We have seen the acknowledgement of errors with the South Dunedin cycle ways which must be admired. It is honest, but the cost of cycleway errors is insignificant compared to the personal cost of the unnecessary flooding on a ratepayers.

Perhaps a full enquiry would be appropriate or should the media now be made aware.

I look forward to a reply from you.

Yours faithfully

T. Bruce Hendry