Our Ref A610586

Committee meetings Wednesday 22 July 2015

Following are the agendas for the Committee meetings to be held on Wednesday 22 July. The Committee meetings will follow the Extraordinary Meeting of Council, which commences at 10.30 am. The venue is the Council Chamber, 70 Stafford Street, Dunedin, and members of the public are welcome to attend.

Full detailed reports referred to in the agendas are available on the Council website, or by contacting the Committee Secretary – see contact details below.

Committee agendas

Page Nos.

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OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Finance and Corporate Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 22 July 2015 following the Extraordinary Meeting of Council

Membership:

Cr David Shepherd (Chairperson)
Cr Gary Kelliher (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Louise Croot MNZM
Cr Michael Deaker
Cr Gerrard Eckhoff
Cr Trevor Kempton
Cr Sam Neill
Cr Gretchen Robertson
Cr Bryan Scott
Cr Stephen Woodhead

Apologies:

Leave of absence: **Cr Gerrard Eckhoff**

In attendance:

Please note that there is an embargo on agenda items until 8.30 am on Monday 20 July.

CONFIRMATION OF AGENDA

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 3 June 2015, having been circulated, for adoption.

Matters arising from minutes

Otago Regional Council

PART A - RECOMMENDATIONS

Item 1
2015/1035 **Port Otago Limited – Draft Statement of Corporate Intent.**
DCE, 9/7/15

The Draft Statement of Corporate Intent for Port Otago Limited is presented for endorsement.

PART B – ITEMS FOR NOTING

Item 2
2015/1040 **Audit and Risk Subcommittee**. DCE, 10/7/15

The report outlines the issues considered by the Audit and Risk Subcomittee at its 17 June meeting.

Item 3
2015/1036 **Insurance Renewals 2015/16.** DCS, 9/7/15

The report describes the recent review of Council's insurances and notes the premiums for the 2015/16 year.

Item 4
2015/1041 **Passenger Transport Update.** DCS, 13/7/15

The report provides an overview of recent changes to the Southern Routes contract, and proposed changes by Government for funding of the Supergold free off peak travel scheme.

Item 5
2015/1039 **Director's report.** DCS, 10/7/15

The report describes significant activities carried out by the Finance and Corporate sections since the last meeting of the Committee.

PART C – PUBLIC EXCLUSION

That the public be excluded from the following part of the proceedings of the meeting.

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

	General subjects to be considered	Reason under LGOIMA for passing this resolution	Grounds under S.48 for the passing of this resolution
Item 6	In Committee portion of the minutes of the Audit and Risk Committee meeting held on 17 June 2015, for noting	*To enable the local authority holding the information to carry out, without prejudice or disadvantage, commercial activities (S7)(2)(h)); and* *To maintain the effective conduct of public affairs through the free and frank experssion of opinions by or between or to members or officers or employees of a local authority. (S72(f)(i))*	S.48(1)(a)(i)

This resolution is made in reliance on Section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act or Section 6 or Section 7 or Section 9 of the Official Information Act 1982 as the case may require, which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public are as shown above with respect to each item.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Finance and Corporate Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 3 June 2015 commencing at 10.00 am

Present:	**Cr David Shepherd** (Chairperson) **Cr Gary Kelliher** (Deputy Chairperson) **Cr Graeme Bell** **Cr Doug Brown** **Cr Michael Deaker** **Cr Gerrard Eckhoff** **Cr Trevor Kempton** **Cr Sam Neill** **Cr Gretchen Robertson** **Cr Bryan Scott** **Cr Stephen Woodhead**
Leave of absence:	**Cr Louise Croot**
In attendance:	**Peter Bodeker** **Wayne Scott** **Jane Leahy** **Fraser McRae** **Gavin Palmer** **Janet Favel**

CONFIRMATION OF AGENDA

There were no changes to the agenda.

PUBLIC FORUM

Simon Parks

Mr Parks stated that he was a farmer on the Taieri, and spoke on behalf of himself and other Taieri farmers, two of whom attended the public forum in his support. Mr Parks requested that the LTP be further amended to exclude spending $4.5m on the Upper/Lower Pond link spillway. He had submitted to the LTP on this matter. He expressed landholders' concerns about the proposal to spend this amount, noting that it was the largest amount spent in the history of the scheme. Mr Parks queried who had requested that this work be done, noting that no-one he had spoken to had requested it. Mr Parks asked Councillors to consider three questions: did they have a clear understanding of how the flood scheme worked; had the consultation process been fair; and had the ORC met its obligations under the Local

Government Act. He considered that if the answer to any of these questions was no, the item should be removed from the LTP. Mr Parks was asked whether he represented all farmers in the Taieri area. He responded that while he had not had time to contact everyone, he had talked to a lot of farmers, all of whom had agreed with his concerns.

MINUTES

The minutes of the public portion of the meeting held on 22 April 2015, having been circulated, were adopted on the motion of Crs Robertson and Woodhead.

Matters arising from minutes

There were no matters arising from the minutes.

PART A - RECOMMENDATIONS

Item 1
2015/0956 **2015-25 Long Term Plan – Recommendations from the Hearing Committee.** DCS, 21/5/15

The report presented the Hearing Committee's recommendations in respect of the 2015-25 Long Term Plan. The summary of submissions was circulated separately with the agenda.

Cr Shepherd as Chair of the LTP Hearings Panel summarised the report. He noted concerns raised about the information contained in the consultation document, and explained that the process was dictated by the LGA, and that the report had been audited. The Panel acknowledged these concerns, and changes were to be made in the future to address them. He noted that the Auditor General was to review the new system, and ORC would be party to that review.

Support was expressed for the proposal to amend the targeted rate contribution for water quality from 75% to 60% of the total cost of monitoring and science, stepped to 75% over 3 years. The multi-dimensional approach to compliance activity, covering education/ liaison, environmental monitoring, science, and research and development, was commended. There was also support for the pragmatic approach to dairy monitoring, with one fee payable for a farm visit, and further fees incurred where more visits were undertaken following identification of non compliance.

Cr Woodhead noted that confusion around monitoring and compliance costs was apparent during the hearings process. He considered that where consent holders required an audit, they should meet the costs of that audit. He also suggested that future consideration needed to be given to the options

provided in the consultation process, for example rating on capital value or land value. Cr Woodhead noted in regard to the water quality rate that some blocks of land were not captured in the rural land categories that were consulted on, and this matter had been investigated and addressed. The quantum of the change was noted, with an 80-100% increase in ORC rates for some. He noted the proposed change to the apportionment of reserves and general and targeted water quality rates with a transition working towards 75%/25% over three years, and considered this proposal was workable for the rural community. Cr Woodhead noted that because of legal restraints, Council was not able to charge for dairy monitoring visits using a risk based approach. It was now proposed that one visit be carried out at a set fee of $235 per visit, with charges for further visits where non compliance was identified.

Cr Kempton considered that good process had been followed, and submitters provided useful input. He commented that a major industry (the dairy industry) operated on a permissive regime where consents were generally not required, and the community had to be assured that the objectives in that regime were being met. Farming had to expect to meet some of the resulting costs. Cr Kempton pointed out the comparison with, for example, Oceana Gold, which had to meet consent conditions and pay all associated costs. In relation to the Taieri flood protection scheme, he noted earlier comments that the scheme didn't work, and Council was now being given the message that the scheme was working. He pointed out that it was easier to include provision for a project in the LTP now and then take it out, than to put it in later. Council needed to be assured that each of these processes was re-examined when appropriate, and the issue of service levels discussed.

Cr Brown commended the proposed changes to the compliance monitoring targeted rate. He noted that the Plan Change was still in the implementation phase, and the rate apportionment should be reviewed every year. Cr Brown noted the suggestion that lifestyle blocks 4 ha and over be included in the targeted rate, and considered this should be reduced to 2 ha and over.

Cr Deaker commended the proposed changes to the LTP based on submissions, and the work of the Panel and staff. He considered that the proposed rates were fair, and particularly commended the redistribution of water quality rates across general and targeted ratepayers as set out in Section 4.2 of the report. He considered that there should be more discussion about Taieri flood protection scheme costs.

Cr Kelliher supported the inclusion of rural lifestyle properties in the schedule of rural land use types to be levied, and supported reducing the minimum to 2 ha in the future. He agreed that more information and discussion was needed on the comments made by Mr Parks. He was concerned that the decision not to support the funding request by the Friends of Lake Hayes would impact on their ability to obtain funding from the Central Lakes Trust. Cr Shepherd noted the extensive involvement of Council in the past, and that the group wanted to do more water quality testing than ORC considered was necessary. He suggested that if the group

could raise the funds to purchase a monitor, ORC could help with its operation.

Cr Scott agreed that further consultation was required on the issues raised by Mr Parks to determine benefits, costs, and whether the work could be done in part. In relation to public passenger transport, he supported the 'last ride' concept where if the price of the ride was more than was available on a GoCard, people could still take the ride, and the shortfall would be deducted from their next top up. He noted that no drawings relating to the bus hub had been presented to Council.

Cr Deaker moved
Cr Woodhead seconded

1. *That this report be received.*

2. *That the recommendations of the Hearing Committee within this report, and within the summary of submissions, be endorsed.*

3. *That in the first two years of the plan, it is financially prudent to have operating deficits as proposed.*

4. *That the 2015-25 Long Term Plan incorporating the recommendations from the Hearing Committee be placed before the June Council meeting for adoption.*

5. *That the 2015-16 Rates Resolution be placed before the June Council meeting for adoption.*

Cr Woodhead commented on the following issues:

- The need to ensure the community understood that the ORC did not intend to move away from the educational role in rural water quality, and the relevant targeted rate clearly identified this.
- Significant work had been carried out recently on the flood and drainage schemes, and some had originally received a government subsidy, which was no longer available. Many of the schemes were in deficit currently, and the costs had been smoothed over a period of years. Events on the Taieri recently had raised issues including the operation between chute, upper pond and lower pond. Cr Woodhead pointed out that the process of investigating options and consulting with the community would be carried out before a decision was made on whether to commit to spending $4.5m on flood and drainage work.
- Public transport – lower prices achieved on contracts meant that work on the bus hub could commence earlier than planned. The terminus/ bus hub would not be able to provide all the services available in larger cities, but it would make transfer between services easier and simplify bus routes.

Cr Brown considered that it would be beneficial to review the funding of flood and drainage schemes. Mr Scott advised that all schemes would be reviewed, not just those on the Taieri. Beneficiaries and exacerbators,

funding source, and affordability of the schemes needed to be included in the review.

Cr Eckhoff advised of his intention to move an amendment that 50% of the water quality science and monitoring component be funded out of the general rate, not out of reserves. Mr Scott explained that the proposed $60,000 (environmental monitoring) and $30,000 (science) from reserves related to capital, not operational, expenditure.

Cr Eckhoff moved
Cr Brown seconded

That the environmental monitoring and science components of the water quality rate be apportioned on a 50/50 split between the general rate and the targeted rate for a period of 3 years.

Mr Scott in response to a question observed that this could result in a significant increase in the general water quality rate in the first year from $819,000 to $950,000. Cr Scott noted that as a result of changes recommended by the Hearing Panel, the general rate increase was currently 6.5%, and he would not like it to be any higher. There was also concern at reserves being used.

The amendment was put and lost.

Thanks were extended to the hearing panel and staff for their work in presenting this report. It was noted that in some cases the LTP had been amended to meet submissions, and Councillors had taken note of the points made in the Public Forum. While the rate increase as a percentage seemed high, the amount per household in most cases was not great.

The motion was then put and carried

Mr Bodeker acknowledged the work of Councillors in producing the Strategic Plan, which provided the basis for the LTP.

Item 2
2015/0964 **Director's report.** DCS, 25/5/15

The report described significant activities carried out by the Finance and Corporate sections since the last meeting of the Committee.

Councillors were pleased to note that the upgrading of the Raes Junction Stock Effluent Disposal facility had been carried out before Gypsy Day.

In relation to the government investigation of online voting, Mr Scott noted that the trial related to TLAs rather than to regional councils.

Cr Kelliher moved
Cr Brown seconded

(1) That this report be received.
(2) That the payments and investments summarised in the table above and detailed in the tabled schedule totalling $3,674,737.44 be endorsed.

Motion carried

PART B EXCLUSION OF PUBLIC

Cr Shepherd moved
Cr Woodhead seconded

That the public be excluded from the following part of the proceedings of the meeting.

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

	General subjects to be considered	*Reason under LGOIMA for passing this resolution*	*Grounds under S.48 for the passing of this resolution*
Item 3	*Minutes of the in committee portion of the meeting held on 22 April 2015, for adoption*	*To enable the body holding the information to carry on, without prejudice or disadvantage, negotiations. (S7(2)(i))*	*S.48(1)(a)(i)*

This resolution is made in reliance on Section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act or Section 6 or Section 7 or Section 9 of the Official Information Act 1982 as the case may require, which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public are as shown above with respect to each item.

Following discussion of Item 3,

Cr Woodhead moved
Cr Shepherd seconded

That the meeting resume in open session.

Motion carried

The meeting closed at 11.46 am.

Chairperson

REPORT

Document Id: A807358

Report Number: 2015/1035
Prepared For: Finance and Corporate
Prepared By: Deputy Chief Executive
Date: 9 July 2015

Subject: **Port Otago Limited - Draft statement of Corporate Intent**

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1. Précis

A Draft Statement of Corporate Intent for Port Otago Limited, including its subsidiaries and associates, for the three year period to 30 June 2018 has been received from the company. The document is attached.

2. Background

Port Otago Limited is required each year to provide for the comment of Council as shareholder, a Draft Statement of Corporate Intent for a three year period. The Draft Statement for the period to June 2018 has now been received from the Board.

3. Draft Statement of Corporate Intent

The Draft Statement of Corporate Intent sets out the objectives of the group, and the intended nature and scope of activities for the three year period to 30 June 2018. The three year scenario covered by the Draft Statement is reviewed annually on a rolling basis. A copy of the Draft Statement received from Port Otago is attached. A working copy with tracked changes to the previous year's document is separately distributed. The Chief Executive of Port Otago Ltd will be in attendance to answer any questions.

The Statement of Corporate Intent process is the formal opportunity for the Council as 100% shareholder of the Port Otago Group to have input into the intended activities of the companies.

Key aspects of the objectives include:

a) Quality service.

b) Continuous customer service improvement.

c) Appropriate return on assets.

d) Recognition of environmental sensitivity of the Otago harbour and impact on local communities.

e) A safe and satisfying working environment.

f) Good corporate citizenship.

g) Communication.

h) Active property management.

Specific activities for the year ending 30 June 2016 include:

a) Actively review activities to focus on customer service and optimum utilisation of resources.

b) Actively seek shipping and port related business development opportunities.

c) Actively promote a positive and safe working environment with continuous improvement in health and safety performance.

d) To cater for larger container ships, deepen the existing shipping channel to Port Chalmers to 13.5 metres by utilising our own dredge, the New Era, by 31 December 2015.

e) Sheet pile along the berth line of the Container Berth No. 1 to safeguard the wharf structure followed by deepening of the berth to 15 metres.

f) Extend the Back Beach dairy warehouses which will increase the on-wharf storage capacity by 25% at Port Chalmers.

g) Construct a new 3,800 m^2 dairy standard warehouse at Sawyers Bay.

h) Complete the investigation of the purchase of a new tug and split-hopper barge to increase the efficiency of the Port's channel deepening and maintenance dredging operations.

i) Commence the upgrade of the yard and entrance at the South Freight container depot at Strathallan Street.

j) Continue with the acoustic treatment programme within the Blue (60 dBA to 65 dBA) and Yellow (55 dBA to 60 dBA) noise zones at Port Chalmers. Actively progress, as approached by property owners, acoustic treatment applications for properties situated within the noise zones. Continue to measure and monitor noise and implement, where possible, new initiatives to minimise the effect of port noise on the community.

k) Obtain the resource consents required to excavate and secure Flagstaff Hill prior to relaying the rail line.

l) Continue the property acoustic treatment programme, and continue to measure and monitor noise and implement where possible, new initiatives to minimise the effect of port noise on the community.

m) Work constructively with the community through the Port Environment / Liaison Committee. Maintain the landscaped areas at Flagstaff Hill, Black Beach and Boiler Point.

n) Continue the ongoing programme of identifying business and environmental risks faced by the Group and review the effectiveness of policies and procedures in place to minimise and manage the risk.

o) Continuation of dredging in the harbour to facilitate safe access of ships to berths.

p) Continue to evaluate and take up opportunities for property disposal, investment and development to improve asset quality, rates of return and portfolio growth potential.

q) Consider any sales opportunities of Dunedin leasehold land, particularly where any sale advances economic development within Dunedin city.

r) Consider property development opportunities in Dunedin.

s) Continue with the development and realisation of the Te Rapa Gateway property in Hamilton and for the successful conclusion of the Joint Venture Project.

4. Performance Targets

Performance targets in relation to trade volume environmental, health and safety, and financial measurement and performance are also set out in the document.

5. Shareholders' Funds

The expected level of shareholders' funds as at June 2016 is $378 million.

6. Recommendation

That the attached Draft Statement of Corporate Intent for Port Otago Limited and its subsidiaries and associates for the three years to 30 June 2018, be endorsed.

Wayne Scott
Deputy Chief Executive

Encl: (1) Draft Statement of Corporate Intent for Port Otago Limited for the three year period to 30 June 2018

PORT OTAGO LIMITED

Statement of Corporate Intent

for the three years to 30 June 2018

Port Otago Limited

Statement of Corporate Intent

This statement is presented by the Directors of Port Otago Limited in accordance with the requirements of Section 9 of the Port Companies Act 1988 and reflects the intentions of Port Otago Limited, its subsidiaries and associates ("the Group") for the three years of the Company's operations from July 2015 to June 2018.

(a) Objectives of the Group

1. To provide a quality service to cargo owners and shipping lines by way of a competitive choice in the supply chain.

2. To continue to review activities and services focusing on continuous customer service improvements and optimum utilisation of staff and resources to meet the demands of changing trade patterns.

3. To implement pricing and cost management strategies so that long term profits are earned to give shareholders an appropriate return on the port infrastructure and to provide funds for future development of the Group.

4. To recognise in all aspects of the Group's activities the environmental sensitivity of the Otago Harbour and the impact on local communities.

5. To provide staff with secure employment, a safe working environment, satisfying rewards and opportunities and training for increased responsibilities and advancement within the Group.

6. To conduct itself as a good corporate citizen consulting on matters of public interest.

7. To communicate the Company's plans and achievements to staff, shareholders and the wider community and to be receptive to constructive comment.

8. To manage the investment property portfolio through active acquisition, development and, at times, divestment to produce a diversified portfolio by property type and location. To manage investment property holdings to achieve the best long-term value gain while limiting exposure to undeveloped land.

(b) Nature and scope of activities

(I) The activities of the Company, its subsidiaries and associates are to comprise generally:

1. The efficient operation and promotion of the Port of Otago.

2. Provision of integrated container and cargo handling, warehousing and container depot services.

3. Provide pilotage and towage services to facilitate the safe navigation of commercial shipping requiring pilotage within the Otago Harbour and Fiordland.

4. Grow the investment property portfolio, evaluate and take up new investment and development opportunities to improve asset values, and rates of return.

5. Sales of leasehold land will be considered where a sale advances development and employment opportunities in Dunedin.

6. Evaluate opportunities considered likely to add value to, or enhance the competitiveness of, the Company.

7. Such other actions that may be required to meet the objectives of the Company recorded under item (a) above.

(II) The following table details the company's trading subsidiaries and joint ventures:

Name	Percentage owned	Principal Activity
Subsidiaries		
Chalmers Properties Limited	100%	Property investment
Te Rapa Gateway Limited	100%	Property investment
Fiordland Pilot Services Limited	100%	Shipping services
South Freight Limited	100%	Transport investment
Joint ventures and associates		
HarbourCold Dunedin	50%	Cold store operation
Icon Logistics Ltd	50%	Transport company
Hamilton Porter Joint Venture	66.6%	Property investment

(III) The specific activities of the Group for the three years under review to June 2018 are expected to include the following:

Year ending June 2016

Port Otago – port operations

1.1 Actively review activities to focus on customer service and optimum utilisation of staff and resources to meet the demands of changing trade patterns. Review pricing to ensure service charges provide an appropriate return on the port infrastructure.

1.2 Actively promote a positive and safe working environment for staff through a team focus, providing opportunities for career advancement and emphasising safety in all activities. Seek continuous improvement in health and safety performance.

1.3 Actively seek shipping and port related business development opportunities. Continue to evaluate opportunities to expand the Group's warehousing, transport and logistics services.

1.4 To cater for larger container ships, deepen the existing shipping channel to Port Chalmers to 13.5 metres by utilising our own dredge, the New Era, by 31 December 2015.

1.5 Sheet pile along the berth line of the Container Berth No 1 to safeguard the wharf structure followed by deepening of the berth to 15 metres.

1.6 Extend the Back Beach dairy warehouses which will increase the on-wharf storage capacity by 25% at Port Chalmers.

1.7 Construct a new 3,800 m^2 dairy standard warehouse at Sawyers Bay.

1.8 Complete the investigation of the purchase of a new tug and split-hopper barge to increase the efficiency of the Port's channel deepening and maintenance dredging operations.

1.9 Commence the upgrade of the yard and entrance at the South Freight container depot at Strathallan Street.

1.10 Continue with the acoustic treatment programme within the Blue (60 dBA to 65 dBA) and Yellow (55 dBA to 60 dBA) noise zones at Port Chalmers. Actively progress, as approached by property owners, acoustic treatment applications for properties situated within the noise zones.

Continue to measure and monitor noise and implement, where possible, new initiatives to minimise the effect of port noise on the community.

1.11 Obtain the resource consents required to excavate and secure Flagstaff Hill prior to relaying the rail line.

1.12 Work constructively with the community through the Port Environment/Liaison Committee by continuing to update and implement the Port Environment Plans. Maintain the landscaped areas at Flagstaff Hill, Back Beach and Boiler Point.

1.13 Continue the ongoing programme of identifying business and environmental risks faced by the Group and review the effectiveness of policies and procedures in place to minimise and manage the risk.

1.14 Continuation of dredging in the harbour to facilitate safe access of ships to berths.

Chalmers Properties Limited, subsidiary and joint ventures

1.15 Continue to evaluate and take up opportunities for property disposal, investment and development thereby improving the asset quality, values, rates of return and portfolio growth potential.

1.16 Consider any sales opportunities of Dunedin leasehold land, particularly where any sale advances economic development within Dunedin city.

1.17 Consider property development opportunities in Dunedin.

1.18 Continue with the development and realisation of the Te Rapa Gateway property in Hamilton and for the successful conclusion of the Joint Venture project.

Year ending June 2017

Port Otago – port operations

2.1 Review the port and port related activities to focus on customer service and optimum utilisation of resources to address changing trade patterns.

2.2 Continue to provide staff with a positive, safe and rewarding working environment.

2.3 Continue to seek new shipping opportunities and continue to evaluate opportunities to expand the Group's warehousing, transport and logistics services.

2.4 Continue deepening the shipping channel to Port Chalmers to 14 metres by 31 December 2016.

2.5 Sheet pile the Multi-Purpose container berth prior to deepening the berth to 15 metres.

2.6 Commence the extension of the Multi-Purpose wharf extension and Boiler Point fishing wharf at Port Chalmers.

2.7 Take delivery of two new diesel electric straddle carriers.

2.8 Make application for the renewal of the dredge disposal consents.

2.9 Commence the excavation works prior to realignment of the rail line to Back Beach below Flagstaff Hill.

2.10 Continue ongoing programme of identifying business and environmental risks faced by the Group and review the effectiveness of policies and procedures in place to minimise and manage the risk.

2.11 In consultation with the community review Environment Plans, and continue to monitor and implement the plans. Continue to review the Noise Management Plan and where possible achieve further improvements to noise abatement procedures. Continue to monitor total port noise.

Chalmers Properties Limited, subsidiary and joint ventures

2.12 Continue to implement the strategy for enhancement of the property portfolio.

2.13 Continue to implement strategies for the sale or redevelopment of leasehold land in Dunedin.

2.14 Continue with the realisation of the Te Rapa Gateway property development and the successful conclusion of the Joint Venture project.

Year ending June 2018

Port Otago – port operations

3.1 Continue to review the port, warehousing and related activities to focus on customer service and optimum utilisation of resources to address changing trade patterns.

3.2 Continue to provide staff with a positive, safe and rewarding working environment.

3.3 Continue to manage and monitor total port noise.

3.4 Complete the Multi-Purpose wharf extension and Boiler Point fishing wharf at Port Chalmers.

3.5 Complete the rail realignment below Flagstaff Hill.

3.6 Take delivery of two new diesel electric straddle carriers.

3.7 Continue the redevelop the South Freight container depot at Strathallan Street, Dunedin.

3.8 Commence planning for the development of the container hub site at Odlins Place in Mosgiel.

3.9 Continue programme of business and environmental risk, evaluation and management.

3.10 In consultation with the community review Environment Plans, and continue to implement the plans.

3.11 Continuation of dredging in the harbour to facilitate the safe access of ships to berths.

Chalmers Properties Limited, subsidiary and joint ventures

3.13 Continue to implement an active property investment and management strategy.

3.14 Continue to implement strategies for the sale or redevelopment of leasehold land in Dunedin.

3.15 Continue with the realisation of the Te Rapa Gateway property development and the successful conclusion of the Joint Venture project.

(c) Ratio of Consolidated Equity to Total Assets

Financial Year ending 30 June	Actual or estimate	Consolidated Shareholders funds	Total assets	Ratio of Shareholders Funds to Total Assets
2014	Actual	$345m	$494m	70%
2015	Estimate	$365m	$450m	81%
2016	Estimate	$378m	$480m	79%
2017	Estimate	$390m	$490m	80%
2018	Estimate	$400m	$500m	80%

Equity comprises the issued and paid up capital together with retained earnings, the property revaluation reserve and any other reserves. Total assets represent all assets of the Group determined in accordance with the accounting policies as set out in the 2014 Annual Report.

The preferred range over time for the equity ratio is between 65% and 75%. The timing of capital expenditure, the income yields on Company investments and prevailing market conditions may mean it is prudent for the Company to operate outside the preferred equity ratio range for periods of time.

(d) Accounting Policies

The Company's accounting policies are detailed in the 2015 Annual Report which is available from the Company's website located at http://www.portotago.co.nz

(e) Performance Targets

The performance of the Company in relation to its objectives may be judged by comparing actual results with budgeted targets of the following nature:

Trade
Port Otago's 2016 financial year budgeted container throughput is 188,800 twenty foot equivalent units (TEU) and the budgeted conventional cargo throughput is 1.4 million tonnes.

The expected number of vessel arrivals in the year to 30 June 2016 is 515 vessels.

Container terminal productivity
The Company aims to achieve gross container crane productivity for the year ending 30 June 2016 of 28.8 lifts per crane hour, a 5% increase. This compares with a crane rate of 27.4 for the year to 30 June 2015.

Environmental	**Performance target**
Incidents leading to pollution of Harbour	- Nil
Full compliance with all resource consent conditions	- Nil breaches of resource consent conditions

Health & Safety
The Company has a Zero Harm strategy in place and it endeavours to be an industry leader in setting new standards of safety. With the involvement of every team member it is planned, through a process of continuous improvement, to progressively improve health and safety performance.
The performance measures to be used are:
- maintain Workplace Safety Management Practice (WSMP) tertiary status;
- maintain compliance with the Australian and New Zealand health and safety standard AS/NZS 4804:2001

The frequency rate (per 1,000,000 work hours) target for the year to June 2016 is:

	Performance target	**Last year**
Lost time injuries (LTIs)	Nil	5.5
Total injury frequency rate (TIFR)	20	37

Financial measurement and performance
The performance measures to be used are:

Earnings before interest and taxation (EBIT) return on average total assets.

Return on equity	-	Profit, including unrealised fair value movements, divided by average shareholders' equity.
Equity ratio	-	The percentage that shareholders' funds represent of total assets with the target range between 65% and 75%.
Debt servicing ratio	-	The number of times interest is covered by the profit before tax, interest, unrealised fair value movements and unrealised impairment charges. Unrealised fair value movements include investment property revaluations, changes in the value of interest rate swaps and changes in the value of foreign exchange contracts.

The budgeted targets for Port Operations, Chalmers Properties Ltd (excluding property revaluations) and the Port Otago Group for the year ending 30 June 2016 are:

	Port Operations
EBIT return on assets	7%
Return on equity	8.8%
Equity ratio at 30 June 2016	79%
Debt servicing ratio	17 times

	Chalmers Properties Ltd
EBIT return on assets	5.9%
Return on equity	4.5%
Equity ratio at 30 June 2016	79%
Debt servicing ratio	5 times
(Property revaluations not included)	

	Port Otago Group
EBIT return on assets	6.5%
Return on equity	5.2%
Equity ratio at 30 June 2016	79%
Debt servicing ratio	8 times

(f) Dividend Policy

1. The return to the shareholders from shares held in Port Otago Limited will include dividends from trading profits earned.

2. The intention is to maintain ordinary dividends at least at $7 million, increasing over time to within the range of 50% to 70% of the group's operating surplus after tax.

3. The company may pay special dividends if, after taking into account forecast levels of capital expenditure, the company will remain within the preferred range for the consolidated equity ratio.

(g) Information for Shareholders

Sufficient information will be made available to the Company's shareholders so that they may properly assess the value of their investment in the Company, in particular any change in value.

An Interim Report covering the six months to 31 December of each year shall be provided by 28 February. The report shall include a commentary on activities and unaudited financial statements for the period.

The Annual Report for each year ending 30 June shall be provided by 30 September of each year. The annual report shall include a commentary on activities, a comparison with performance targets set out in the Statement of Corporate Intent and audited financial statements for the year.

In conjunction with the Interim and Annual Reports the Company shall report to the shareholder on progress with implementing the Objectives and the Specific Activities set out in the Statement of Corporate Intent.

(h) Procedures for business acquisition

The Group will only invest in shares of another company or business if the acquisition will produce shareholder added value over the longer term.

If any Company within the Group intends to subscribe for or otherwise acquire a financial interest in any company or business where the cost of that interest or acquisition exceeds 10% of Group shareholders funds it will have prior consultation with its shareholders.

(i) Activities subject to Compensation

The Company will provide the following services for the Otago Regional Council for which the company expects to be remunerated or reimbursed by the Regional Council:

a) Assistance in matters of good navigation and safety on Otago Harbour.
b) Provision of such services as may be requested by the Regional Council.

REPORT

Document Id: A808058

Report Number: 2015/1040
Prepared For: Finance and Corporate
Prepared By: Deputy Chief Executive
Date: 10 July 2015

Subject: **Audit and Risk Subcommittee**

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1. Précis

The Audit and Risk Subcommittee met on 17 June, and this report outlines the issues considered by the Subcommittee.

2. Background

The Audit and Risk Subcommittee met on Wednesday 17 June. An appointed independent member, Mr David Benham, chairs the Subcommittee.

Topics considered by the Subcommittee are noted below. The minutes of the meeting are attached.

3. Health and Safety

The Subcommittee considered a report on follow-up actions from the review of Health and Safety undertaken by BECA. Issues raised by the staff Health and Safety Committee were included in the report.

4. Draft Long Term Plan

The final Long Term Plan 2015-2025 document was presented to the Subcommittee prior to it going to Council for adoption. The positive report from the auditors on the document was noted.

5. Insurance Renewals

The process of the annual review and renewal of the Council's insurance policies was reported on, and the staff investigation into the best placement of the Council's public liability and professional indemnity cover was endorsed.

6. Financial Report

The Subcommittee received financial statements for the 10 months to 30 April 2015, and discussed key project variances.

7. Managed Fund

The Subcommittee was updated on planning to review the Statement of Investment Policy and Objectives (SIPO) for the managed fund, including an extension to other Council investments.

8. Asset Management

It was noted that the Council's asset management system was currently being updated, which would provide enhanced capability for scheme and corporate asset management processes.

9. Recommendation

That this report be received.

Wayne Scott
Deputy Chief Executive

OTAGO REGIONAL COUNCIL

Draft Minutes of a meeting of the Audit and Risk Subcommittee held in the Harbour Room, Council Chambers, 70 Stafford Street, Dunedin on Wednesday 17 June 2015 commencing at 2.00 pm

Present:	**Mr David Benham** (Chairperson) **Cr Stephen Woodhead** **Cr Doug Brown** **Cr David Shepherd**
Leave of absence:	**Cr Gretchen Robertson**
In attendance:	**Peter Bodeker** **Wayne Scott** **Sharon de Vries** (for Items 2 and 3) **Stuart Lanham** (for Item 5) **Janet Favel**

CONFIRMATION OF AGENDA

There were no changes to the agenda.

MINUTES

The minutes of the public portion of the meeting held on 25 February 2015, having been circulated, were adopted on the motion of Cr Woodhead and Mr Benham.

Matters arising from minutes

There were no matters arising from the minutes.

ITEMS FOR DISCUSSION

Item 1
2015/0975 **Health and Safety Review.** DCS, 5/6/15

The report detailed progress against the recent Health and Safety Review, and issues considered recently by the staff Health and Safety Committee. Mr Benham was pleased to see the actions being taken following the review.

Mr Benham considered it would be useful for a schedule of injuries to be reported to the Audit and Risk Committee. Mr Scott agreed that reporting needed to be regularised, and advised that the local government industry standard was being investigated. It would also be useful to gauge ORC's performance in this regard in comparison with other councils.

Issues raised by staff and the Health and Safety Committee were listed in the report, and included:

- Safety alerts were circulated to staff through emails and the staff Intranet.
- Near miss reports were being completed. These provided useful information on hazards around the work place and in the field.
- A tender had been accepted for replacing floor coverings and the nosings (stair rails) on stairs – some instances of tripping going upstairs.
- Motorbikes were being transported on trailers rather than on ute decks.
- The issue of the safe use of cellphones in vehicles was raised. It was noted that while a lot of people now pulled off the road to talk on their cellphone, they had to find a safe place to stop, and a question was raised as to whether it was safe to answer a phone while driving. The Council did not yet have a policy on this.

Mr Benham noted the personal, time, and financial costs of a seious injury in the work place. Mr Bodeker advised that the next Annual Plan would include identification of Health and Safety issues for projects.

Mr Scott noted the heightened awareness among staff of the importance of health and safety issues, and Mr Bodeker commented that staff were seeing that management was taking safety seriously.

Mr Benham moved
Cr Shepherd seconded

That the report be noted.

Motion carried

Item 2
2015/0981 **Draft Long Term Plan 2015-25.** DCS, 10/6/15

The report noted that the Finance and Corporate Committee had considered submissions and made recommendations on the Long Term Plan Consultation Document. The full Plan was circulated separately with the agenda.

Mr Scott explained that in line with the new process required by changed legislation, a consultation document had been prepared and consulted on. There was criticism from the public about lack of access to the detail and figures of the draft Long Term Plan, and ORC had submitted accordingly on the new legislation. The full Plan would be presented to Council next week for adoption. The practice of giving project options in the draft Plan was discussed, and Mr Benham commented that where there had been consultation with the public prior to the LTP process and a proposal agreed on, the ORC did not need to offer project options.

Ms de Vries commented that the audit process had gone well, and Mr Scott advised that a good report had been received from the auditor. A question was raised as to whether the audit process was too extensive.

Ms de Vries advised in response to a question that for the 2016-17 Annual Plan, Council needed to consult only on significant changes to the LTP, not the whole Plan.

Mr Benham moved
Cr Shepherd seconded

That the final Long Term Plan 2015-2025 document be noted.

Motion carried

Item 3
2015/0970 **Audit Report – Long Term Plan 2015-25 – Consultation Document.** DCS, 5/6/15

The auditor's report on the 2015-25 Long Term Plan Consultation Document was considered by the Subcommittee.

Mr Scott noted that the Asset Management Plan (AMP) was a work in progress, with development of the 'Conquest' upgrade under way. Ownership of asset management was needed throughout Council, and the Plan would include operational and maintenance programs.

Mr Benham commented that POL and Council accounting standards needed to be consolidated. Mr Scott noted there would be divergence between Public Benefit Entity (PBE) and for profit, but commented that in discussion

with the Port and auditors, a workable solution had been reached. It was expected that a greater divergence between the two sets of standards would evolve.

Cr Woodhead moved
Ce Shepherd seconded

That the audit report on the 2015-2025 Long Term Plan Consultation Document be received.

Motion carried

Item 4
2015/0991 **Insurance renewals 2015/16.** DCS, 16/6/15

The report explained that staff were in the process of arranging for the renewal of Council's insurance policies which would expire on 30 June 2015. Part of the renewal process would be a consideration of Council's ongoing placement of public liability and professional indemnity cover with Risk Pool.

A correction to the report was noted to refer to public liability and professional indemnity limits of $200,000,000.

Mr Scott noted the Council's public liability and professional indemnity was currently with Riskpool, and there was concern about their resilience to a claim. The insurance market was now more competitive than it had been, and there were more options available. Staff were working through a broker to identify alternative cover.

Cr Shepherd moved
Mr Benham seconded

That the report be noted.

Motion carried

Item 5
2015/0985 **Financial Report.** DCS, 11/6/15

Financial Statements for the 10 months to 30 April 2015 were circulated for the Subcommittee's consideration.

Mr Benham commented on the healthy surplus, which derived largely from dividend and investment income.

Mr Benham suggested that a forecast column for the full year be included in the ten month report, and Mr Scott and Mr Lanham agreed with this suggestion.

Mr Benham noted the comment in the statements relating to capital expenditure on transport. He commented that forecasts were useful in showing what was going to be completed by the end of the year. Mr Bodeker considered that setting targets for staff, including the CE, was useful. He also considered that reporting needed to be improved to show what was not being done.

The unbudgeted recovery in the Leith Flood Protection scheme of $496,000 was noted, and Cr Woodhead asked if this amount was likely to be received. Mr Scott advised that the University was contesting some of the amounts due.

In response to a question Mr Lanham advised that a note to the funding impact statement could be included showing the breakdown of fines, infringement fees and other receipts

Mr Benham noted the healthy outcome arising partly from the uplift in investment income.

Cr Woodhead noted discussion at a recent Otago Mayoral Forum meeting about local government amalgamation. He noted collaborative activity on regional civil defence activity, the Otago/Southland combined regional public transport plan, and QLDC and CODC combined roading work. Mr Scott pointed out that activities could continue to be coordinated, but separate councils retained to ensure community involvement.

Mr Benham moved
Cr Brown seconded

That the report be received.

Motion carried

Item 6
2015/0984 **Executive Report.** DCS, 11/6/15

The Director's report discussed the Managed Fund, Asset Management, and Risk Management.

Mr Scott noted that he and Cr Shepherd had met with Michael Chamberlain to discuss the role of independent expert to assist with the monitoring of the managed fund investment portfolio. It was envisaged that an overall Council SIPO covering investments and cash be developed, from which

segment SIPOs could be developed. Mr Chamberlain was to report back on the managed fund discussion.

In response to a question from Cr Brown, Mr Scott suggested that Port Otago Ltd (POL) be invited to present its risk management strategy to Council. Cr Woodhead considered it would also be useful for Council to understand POL operational and Chalmers Properties income, noting that the POL dividend combined Group results.

Mr Scott noted that the POL dividend was currently 48% of their income, and he considered that this could be increased, noting the impact of the sale of the Lyttelton Port Company shares. Mr Benham noted that dividends could be calculated on a cents per share basis rather than a percentage. Mr Scott noted that the figure was shown in POL's Statement of Corporate Intent as a bottom line and a percentage.

Mr Scott suggested that POL's risk management strategy, including the Group's concept of risk, be presented to the next meeting of the Audit and Risk Committee.

Cr Woodhead moved
Cr Brown seconded

That the report be received.

Motion carried

EXCLUSION OF PUBLIC

It was **agreed**

That the public be excluded from the following part of the proceedings of the meeting.

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

	General subjects to be considered	*Reason under LGOIMA for passing this resolution*	*Grounds under S.48 for the passing of this resolution*
Item 7	*The minutes of the In Committee portion of the meeting of 25 February 2015, for adoption*	*To enable the local authority holding the information to carry out, without prejudice or disadvantage, commercial activities (S7)(2)(h))*	*S.48(1)(a)(i)*

Item 8	*Financial Management*	*To maintain the effective conduct of public affairs through the free and frank experssion of opinions by or between or to members or officers or employees of a local authority. (S72(f)(i))*	*S.48(1)(a)(i)*

This resolution is made in reliance on Section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act or Section 6 or Section 7 or Section 9 of the Official Information Act 1982 as the case may require, which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public are as shown above with respect to each item.

Following discussion of Items 7 and 8, it was **agreed** that the meeting resume in open session.

Mr Benham thanked Mr Scott for his professional approach and provision of information, and extended best wishes for his retirement.

Mr Scott noted that the port and harbour safety document could be presented to this committee. He advised that the harbourmaster responsibility was to be contracted to Port Otago.

Next meeting – Monday 7 September commencing at 2.00 pm.

The meeting closed at 3.56 pm.

Chairperson

Otago Regional Council

REPORT

Document Id: A807389

Report No: 2015/1036
Prepared for: Finance and Corporate Committee
Prepared by: Manager Support Services
Date: 09 July 2015

Subject: Insurance Renewals 2015/16

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1. Précis

The Council's insurances have been reviewed through our broker and finalised for the 2015/16 year. Of note is the significant decrease in Council's premium for public liability and professional indemnity cover as a result of a change in providers. The combined premiums represent an overall decrease of 7.6% in insurance premiums for the 2015/2016 year.

2. Background

Council's insurances are reviewed and renewed annually.

Council's brokers have managed to obtain comprehensive cover for all property and assets previously covered in the 2015/16 year.

There is a decrease in the cost of Council's vehicle fleet insurance and fidelity cover.

The insurance categories and premiums for the period 4.00 pm 30 June 2015 to 4.00 pm 30 June 2016 are scheduled below, along with a comparison from 2014/15 premiums.

3. Summary of Cover

Cover	Premium		
	Excess $	**2014/15 $ excl. GST**	**2015/16 $ excl. GST**
Material Damage (property, contents)	See note i	78,560	72,478
Business Interruption	5,000	4,664	3,885
Motor Vehicle	1,000	23,470	27,421
Fidelity Guarantee	25,000	7,950	7,950
Personal Accident	Nil	4,128	4,128
Marine Hull	500	927	927
Liability Insurance (RiskPool)	5,000/10,000	38,470	29,400
Total		**158,169**	**146,189**

Notes:

i) The excess of Material Damage claims are as follows:

Subsidence and Landslip:	$50,000
Natural Disasters (as defined in the policy):	5-10% of the Material Damage site sum insured minimum $5,000
All other claims:	$5,000 per claim

ii) Fidelity, the level of cover retained at $2,000,000.

iii) Public Liability and Professional Indemnity Limits have been maintained at $200,000,000.

iv) Harbourmasters' liability has been maintained at $25,000,000.

4. Public Liability and Professional Indemnity

In previous years Council has provided for its public liability (PL) and professional indemnity (PI) cover through Riskpool. Riskpool was formed in 1997 as a mutual liability trust fund for New Zealand local authorities in response to concerns about councils being able to place appropriate cover.

In being part of the mutual fund, councils share any benefits and liabilities that are associated with the cover. An example of this is the call for funds placed on this Council over previous years due to leaky homes claims. Prior to this year, 54 local authorities were members of Riskpool. Under the mutual fund arrangement, councils continue to have joint liability for the years in which they were members. This liability remains irrespective of whether or not a Council continues to be a member.

During this year's renewal process a number of councils have elected to place their insurance outside of Riskpool. The primary reasons for this are the availability of the same level and extent of cover for a substantially reduced premium, and the avoidance of a contingent liability with other councils. For these reasons Council's staff considered offers from both Riskpool and from Jardine Lloyd Thompson (JLT) our brokers. A result of these considerations is an acceptance of the JLT offer placing the insurance through the JLT London Local Government Liability Insurance Placement Facility that is underwritten out of the London and Lloyd's Insurance Markets.

5. Recommendation

That this report be received.

Nick Donnelly
Director Corporate Services

Otago Regional Council

Document Id: A808062

Report No: 2015/1041
Prepared For: Finance and Corporate Committee
Prepared By: Manager Support Services
Date: 13/07/2015

Subject: Passenger Transport Update

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1 Précis

This report provides an overview of the recent changes to the Southern Routes contract which commenced on 1 July 2015 and the actions taken by staff to inform members of the community of the changes. The report highlights proposed changes by the Crown for funding of the Supergold Free off peak travel scheme. LGNZ is making representation to the Ministry on behalf of the affected Councils.

2 Southern Routes

The Southern Routes Contract being the first of the new Public Transport Operating Model (PTOM) Units, Unit 5 commenced on 1 July 2015. As Council is aware the new contract provides a substantive change in the way the service operates i.e. the removal of route variations, and the introduction of the service transfer at Green Island.

Due to the nature of the changes a number of measures were put in place leading up to the commencement of services including but not limited to:

- new bus timetable distributed to all homes in the serviced area;
- the new timetable had a specific fold out page outlining the changes;
- radio and newspaper advertisements;
- students travelling on the affected services explaining changes to passengers and handing out leaflets;
- signs placed at all redundant stops directing passengers to the new stops;
- specific driver training on the new services and the changes to the ticketing system to accommodate the bus transfer at Green Island.

In implementing the changes it was expected that there would be some negative feedback from bus users. Most of the matters/concerns raised fall into the following categories:

- no direct services to Caversham and South Dunedin including the removal of the Stevenson Road variation;
- the need to pay an additional one zone fare to get to South Dunedin.

Staff will be monitoring the impact of the service changes over the next twelve months and will respond to members of the public providing feedback. In the meantime staff are finalising tenders for the two PTOM Units scheduled to commence 1 January.

3 SuperGold

The SuperGold Free Off-peak Travel Scheme is a Ministry of Social Development funded initiative, with the subsidy being distributed by NZTA.

Staff were recently advised of proposed changes to the way the SuperGold free off peak travel scheme is to be funded by the Crown.

Currently the operators (for net contracts) and councils (gross contracts) are reimbursed at 65% of the adult cash fare. Note this is less than the concession fare for Supergold card holders for peak travel. Council should also note that when the scheme was introduced in 2008 the reimbursement rate was 75%. Under the current funding mechanism the reimbursement takes account of both fare increases and increased patronage/usage.

The proposed change would see the national scheme capped at the 2015 Scheme bulk budget allocation with CPI adjustments. The apportionment of the budget allocation will be set by a formula which is yet to be developed.

In the absence of a prescribed funding allocation it is not possible for Council to calculate the actual impacts of the changes on Council. Furthermore as Council has recently included our estimates in the National Land Transport Programme for the 15/16- 17/18 funding programme, there will not be an opportunity to adjust for any impacts except through rates, fares for other users, or reducing operational costs i.e. reducing the number of available services.

LGNZ is in the process of coordinating a response to the Ministry's proposal.

4 GoBus School service withdrawal

There has been recent concern expressed both directly and through the media regarding the removal of a number of school services by Go Bus Transport Limited. There has been an inference by members of the community and others that Council had in some way been responsible for the changes, and that we should have consulted on those changes before they had been implemented.

Staff have advised those concerned that this matter is between the operator and the school communities and furthermore that Council has no control over the cancelled services. It is noted that the Regional Public Transport Plan identifies Council policy is to progressively withdraw from providing direct school contracted services.

3. Recommendation

3.1 That this report be received.

Nick Donnelly
Director Corporate Services

Otago Regional Council

REPORT

Document Id: A807981

Report Number: 2015/1039
Prepared For: Finance and Corporate
Prepared By: Director Corporate Services
Date: 10 July 2015

Subject: **Executive Report - July 2015**

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1. National Bovine Tb Plan Review

A Plan Review Project Governance Group established to review the National Bovine Tb Plan has concluded that it should be possible to eradicate Tb from New Zealand. A proposal has been advanced to achieve that end by 2055, and that proposal is now in its consultation stage. Submissions close on 31 July. A request has been made to accept this Council's submission in the week following, in order that the submission can be considered and endorsed by Council at its 5 August meeting.

In relation to funding, the proposal includes a wider range of beneficiaries than at present, and removes the contribution collected through regional councils. The Otago Land Levy would be revoked.

A report and draft submission will be prepared for consideration at the August Council meeting.

2. Account Payments

Schedules of payments are referred to the Finance and Corporate Committee for endorsement. The financial commitments and payment authorisations are made in accordance with Council's financial delegations and internal control procedures.

Payment Category	***May 2015*** ***$***	***June 2015*** ***$***	***Total*** ***$***
Trade and general payments	2,339,947.82	2,550,274.06	4,890,221.88
Payroll	634,580.66	619,932.11	1,254,512.77
Investments	1,300,000.00	3,000,000.00	4,300,000.00
Total	**$4,274,528.48**	**$6,170,206.17**	**$10,444,734.65**

2. Recommendation

(1) That this report be received.
(2) That the payments and investments summarised in the table above and detailed in the tabled schedule totalling $10,444,734.65 be endorsed.

Nick Donnelly
Director Corporate Services

OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Regulatory Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 22 July 2015 following the Finance and Corporate Committee meeting

Membership:

Cr Sam Neill (Chairperson)
Cr Gerrard Eckhoff (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Louise Croot MNZM
Cr Michael Deaker
Cr Gary Kelliher
Cr Trevor Kempton
Cr Gretchen Robertson
Cr Bryan Scott
Cr David Shepherd
Cr Stephen Woodhead

Apologies:

Leave of Absence: **Cr Gerrard Eckhoff**

In attendance:

Please note that there is an embargo on agenda items until 8.30 am on Monday 20 July.

CONFIRMATION OF AGENDA

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 3 June 2015, having been circulated, for adoption

Matters arising from minutes

Otago Regional Council

ITEMS FOR NOTING

Item 1
2015/1021 **Revocation of the Building (Dam Safety) Regulations 2008.** DEHS, 10/7/15

The report discusses the implications of the government's decision to revoke the Building (Dam Safety) Regulations 2008.

Item 2
2015/1010 **Biosecurity and RMA Monitoring Report.** DEMO, 7/7/15

Reporting on water, air, pest, and contaminated site environmental monitoring and incidents for the period 1 May to 12 June 2015.

Item 3
2015/1022 **Consent processing, consent administration and Building Control Authority update.** DPPRM, 15/7/15

Detailing consent processing, consent administration and building control authority activity for the period 15 May to 30 June 2015.

Item 4
2015/1013 **RMA, Biosecurity Act and Building Act Enforcement Activities.** DPPRM, 1/7/15

Detailing Resource Management Act 1991, Biosecurity Act 1993 and Building Act 2004 enforcement activities undertaken by the Otago Regional Council for the period 17 May to 30 June 2015.

Item 5
2015/0980 **Appointment of Plan Change Hearing Commissioners.** DPPRM, 15/7/15

Listing hearing commissioners appointed for the period to 15 July 2015.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Regulatory Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 3 June 2015 commencing at 11.47 am

Present:
Cr Sam Neill (Chairperson)
Cr Gerrard Eckhoff (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Michael Deaker
Cr Gary Kelliher
Cr Trevor Kempton
Cr Gretchen Robertson
Cr Bryan Scott
Cr David Shepherd
Cr Stephen Woodhead

Leave of Absence: **Cr Louise Croot**

In attendance:
Peter Bodeker
Wayne Scott
Jane Leahy
Fraser McRae
Gavin Palmer
Janet Favel

CONFIRMATION OF AGENDA

There were no changes to the agenda.

MINUTES

The minutes of the meeting held on 22 April 2015, having been circulated, were adopted on the motion of Crs Kempton and Eckhoff.

Matters arising from minutes

There were no matters arising from the minutes.

Otago Regional Council

ITEMS FOR NOTING

Item 1
2015/0928 **Biosecurity and RMA Monitoring Report.** DEMO, 22/5/15

The report detailed water, air, pest, and contaminated site environmental monitoring and incidents for the period 21 March to 30 April 2015.

The summary of installation and verification of water meters was noted. Mr Bodeker commented that the first inspections had given a snapshot of the situation to date, and Council would continue working with groups to ensure the equipment was installed.

In response to a question Mr McRae advised that the forestry industry had been very active during the development and operation of rural water quality monitoring regimes.

The collection of rural water quality samples was noted. Mr McRae explained that the results of the sampling were passed on to individual farmers to give them a better understanding of water quality on their land.

Cr Eckhoff moved
Cr Bell seconded

That the report be noted.

Motion carried

Item 2
2015/0939 **Consent processing, consent administration and Building Control Authority update.** DPPRM, 15/5/15

The report detailed consent processing, consent administration and building control authority activity for the period 6 April to 15 May 2015.

Cr Scott moved
Cr Shepherd seconded

That the report be noted.

Motion carried

Item 3
2015/0942 **RMA, Biosecurity Act and Building Act Enforcement Activities.**
DPPRM, 16/5/15

The report detailed Resource Management Act 1991, Biosecurity Act 1993 and Building Act 2004 enforcement activities undertaken by the Otago Regional Council for the period 1 April to 16 May 2015.

Cr Shepherd moved
Cr Scott seconded

That the report be noted.

Motion carried

The meeting closed at 12.00 pm.

Chairperson

REPORT

Document Id: A805105

Report Number: 2015/1021
Prepared For: Regulatory Committee
Prepared By: Gavin Palmer, Director Engineering, Hazards and Science
Date: 10 July 2015

Subject: **Revocation of the Building (Dam Safety) Regulations 2008**

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1. Précis

On 23 June Cabinet made the decision to revoke the Building (Dam Safety) Regulations 2008. The regulations were subsequently revoked under the Building (Dam Safety) Revocation Order 2015, with effect from 30 June 2015. Government officials are currently preparing advice to Ministers on various options to manage dam safety under the Resource Management Act (RMA). There will be no change to the building control parts of the Building Act. The construction and alteration of large dams[1] and their appurtenant structures will still require building consent and ORC will continue to have Building Consent Authority functions for dams. This paper discusses the implications of the government's decision.

2. Background

The Building Act 2004 provides for the safety management of dams and the quality of their design and construction. The Act takes a risk-based approach to safety management with a sequence of actions determined by the level of risk. For regulatory purposes the level of risk is characterised by the sizes of the dam (height) and reservoir (volume) and the consequences (for people, property and the environment) should the dam fail.

The Act stages the implementation of the scheme over several years. The first stage was for owners of large dams to prepare an audited Potential Impact Classification (PIC) and to submit that to the regional authority between 1 July and 1 October 2015. ORC was to receive and administer audited PICs for dams in Otago, Southland and West Coast[2]. Owners of dams with High or Medium PIC would then be required to submit an audited dam safety assurance programme (DSAP) and an annual dam compliance certificate (ADCC) at regular intervals.

As previously reported[3], most parts of the dam safety scheme are not operative as they rely on amendments to regulations that are yet to be drafted. Despite that, the methodology for determining the PIC and the content of a DSAP and ADCC and competency standards for Recognised Engineers[4] had already been adequately defined and described, and were set out in the Building (Dam Safety) Regulations 2008.

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[1] "Large dam" is defined in Section 7 of the Act as a dam that has a height of 4 or more metres and holds 20,000 or more cubic metres volume of water or other fluid.
[2] ORC undertakes certain Building Act functions in Southland and West Coast under Deeds of Transfer that terminate on 30 June 2018.
[3] *Update on Building Act dam safety scheme*, Report No. 2014/0685, Prepared for Otago Regional Council Regulatory Committee, 5 March 2014.
[4] A class of Chartered Professional Engineer.

On 23 June Cabinet made the decision, on the advice of officials, to revoke the Building (Dam Safety) Regulations 2008. The regulations were subsequently revoked under the Building (Dam Safety) Revocation Order 2015, with effect from 30 June 2015. Regional authorities and other stakeholders were advised of this by the Ministry of Building, Innovation and Employment (MBIE) by email on 25 June as follows:

"The Government has decided that dam safety is better suited to being managed under the Resource Management Act (RMA) rather than the Building Act. The purpose of the ongoing maintenance of dams is to manage the impacts to life, infrastructure, and ecosystems should a dam failure occur. Ministers consider that this is more consistent with the purpose and principles of the RMA. Such an approach would also remove the current duplication between the use of resource consent to impose dam safety-related conditions, and the dam safety regulations. The latter (and the regulatory framework outlined in the Building Act) were seen by Ministers to be too onerous for the level of risk, and would impose excessive compliance costs on some dam owners. …Officials from the Ministry for the Environment and the Ministry of Business Innovation and Employment are currently preparing advice to Ministers on various options to manage dam safety under the RMA. I can assure you that your input and advice will be sought during this process and you will continue to be informed as this work progresses".

MBIE is yet to communicate the situation and the reasons for it to the wider public and most dam owners and is yet to advise regional authorities on how and when it intends doing so.

The Building Act has not yet been amended to reflect the revocation of the regulations. There will be no change to the building control parts of the Act. The construction and alteration of large dams and their appurtenant structures will still require building consent and ORC will continue to have Building Consent Authority functions for dams.

3. Discussion

Regional authority Long Term Plans are predicated on the dam safety scheme that is described in the Act and in the (revoked) regulations and on a commencement date of 1 July 2015. This was advised to the Minister of Building and Housing in May by regional authority Chief Executives in a letter that sought confirmation that the scheme would commence on that date. At the time there was uncertainty amongst regional authorities and stakeholders over the government's intentions.

Recent amendments that strengthened the Act such as requiring owners to advise the regional authority if they had reason to believe a dam was a dangerous dam[5] are now unlikely to take effect because further work by MBIE on development of regulations that define "dangerous dam" has presumably ceased in favour of re-exploring use of the RMA. Similarly, the amendment that required owners of classifiable and referable dams to notify the regional authority of the size and location of the dam[6] has been nullified because "classifiable dam" was defined in the regulations and not in the Act.

[5] Section 153B.

[6] Section 133C. This provision of the Act enables regional authorities to effectively maintain a register of large dams in their region as required under Section 151. MBIE noted this in its report to the Local Government and Environment Committee when recommending the Act should be amended to include Section 133C.

The provisions that enable a regional authority to act if immediate danger is likely to people or property[7] remain in effect as they do not rely on regulations.

The New Zealand Society on Large Dams (NZSOLD) has taken a leadership role on dam safety management for several decades and has been well supported in that role by the companies that own the larger dams and the professionals who advise them. They have overseen and resourced a significant update and rewrite of the New Zealand Dam Safety Guidelines[8] which are being launched publicly by NZSOLD next month. Whilst the guidelines will play an important role in the safety management of dams they are not a substitute for legislation.

The RMA in its current form has limitations when applied to the safety management of dams. Many resource consents are silent on dam safety standards. Those that do include standards typically reference the New Zealand Dam Safety Guidelines promulgated in 1995 or 2000 that have been superseded by the 2015 version.

The Building Act and regulations enabled safety management standards to be applied retrospectively to dams regardless of when they were constructed or where they were located (whether within or outside the bed of a river). They would have ensured a nationally consistent approach to the management of dam safety. Future changes in standards and approaches would have been able to be addressed by simply amending the regulations without the need to alter conditions of individual resource consents or to change Regional Plans.

Allowing the scheme to commence on 1 July followed by the preparation and submission of audited PICs by 1 October would have provided the information necessary to make well informed decisions about risk and regulation of dams in New Zealand. Such information is a fundamental requirement regardless of the particular statute used to manage dam safety.

The commencement of the Building (Dam Safety) Regulations 2008 was delayed by the government on four occasions prior to the revocation[9]. The revocation seems odd as there appeared to be agreement amongst all stakeholders that "classifiable dams" should be classified and there was no disagreement on the process or criteria prescribed in the existing regulations. The debate was mostly to do with how to handle smaller dams and on the process and definition to do with "referable dams"[10]. Further, the specification of competency standards for engineers involved in dam safety management ("Recognised Engineers") was consistent with one of the recommendations of the Canterbury Earthquakes Royal Commission. The Commission recommended extending the approach used in the dam safety regulations to provide for a Recognised Structural Engineer with a specified and mandatory role in the design of some buildings[11]. That recommendation was accepted in principle by the government[12]. A certification process and online register for Recognised Engineers (for dams) was established by the

[7] Section 157.
[8] *New Zealand Dam Safety Guidelines 2015*, New Zealand Society on Large Dams.
[9] In 2010, 2012 and twice in 2014.
[10] *Building Amendment Bill No.4, Report of the Ministry of Business, Innovation and Employment to the Local Government and Environment Committee*, Ministry of Business, Innovation and Employment, 14 August 2012.
[11] Canterbury Earthquakes Royal Commission, *Final Report, Volume 7, Roles and Responsibilities*, p88.
[12] http://www.building.govt.nz/cerc-cabinet-paper#response

Institution of Professional Engineers New Zealand in 2009. 46 professional engineers have taken the initiative to have their competency assessed and to become registered[13].

There has for a long time been general agreement amongst stakeholders on many aspects of the form that the regulation of dam safety in New Zealand should take and on the need for that regulation. It was unnecessary and undesirable to revoke legislation to do with the safety management of larger dams. If the RMA is to be the statute that regulates dam safety then a managed transition from the Building Act to the RMA was feasible and desirable but the revocation of the Building (Dam Safety) Regulations 2008 has hindered that.

4. Recommendations

That:

1. This report is received.

2. The situation with the Building Act dam safety scheme is noted.

Gavin Palmer
Director Engineering, Hazards and Science

[13] http://www.ipenz.org.nz/IPENZ/Registration/search/Recognised_Engineer.cfm

Otago Regional Council

REPORT

Document Id: A801501

Report Number: 2015/1010
Prepared For: Regulatory Committee
Prepared By: Director Environmental Monitoring and Operations
Date: 7 July 2015

Subject: **Biosecurity & RMA Monitoring report for the period 1 May to 12 June 2015**

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1. Water Quality and Quantity

1.1 Regional Plan: Water and Resource Consent Monitoring

1.1.1 Audit & Inspection Monitoring

There were 101 consent related inspections conducted. 91 audits were conducted, 13 consents were graded as non-compliant significant with actual effects, 7 of these were from one consent holder. The Council is meeting with this consent holder to discuss our concerns. 10 structure and water device inspections were also conducted over this reporting period.

1.1.2 Water Metering – RMA Regulations

Over 20 l/s: 815 of consents have water measuring and recording equipment installed. 167 of consents have notified the Council and are still progressing with installation. These consents have until the beginning of the irrigation season to have measurement and recording equipment installed. The majority of these consents are related to irrigation companies. 58 consents are being assessed for cancellation. A further 15 consents that have previously been notified as not in use have been either surrendered or cancelled. 19 consents have still made no progress with installation of the appropriate equipment. These consent holders have been issued with abatement notices prohibiting the exercise of their consent until measuring equipment has been installed.

10-20 l/s: 56% (111) consents have the required equipment installed. 15% (29) consents have advised the council of their intention to install measurement and recording equipment. 8% (17) consents are being assessed for cancellation, lapse or surrender. 15% (28) consent holders are yet to advise the council that their measurement and recording equipment is installed. These consent holders will be issued with a final warning, and will have until the beginning of the irrigation season to have the appropriate equipment installed.

Compliance with the water metering regulations for takes between 5-10 l/s is by 10 November 2016.

1.1.3 Rural Water Quality

Staff are continuing to distribute Rural Water Quality Information Packs. These are provided to any person/landowner that contact is made with. To date 2064 packs have been distributed throughout the region, the same staff are now assisting with the extension programme (Drop in Centres). To date 484 water samples taken.

1.2 State of Environment Monitoring

Monitoring began at two replacement bores for Taieri groundwater at Harleys. The intention is to collect 3 months of overlapping record before the Harleys bores are decommissioned prior to the property being sold. Telemetry instrumentation was installed at 3 recently drilled monitoring bores in Central Otago. Several high flow gauging measurements were carried out during the flood event of 3-4 June using our helicopter kayak technology.

2. Air Quality

2.1 State of the Environment Monitoring

Monitoring stations at Milton, Balclutha, Cromwell, Clyde and Arrowtown began operation for the winter period in addition to the permanent stations at Alexandra, Dunedin and Mosgiel, all operating well.

2.2 Clean Heat Clean Air project

10 installs completed during the reporting period. To encourage uptake of the subsidy we have invited additional contractors to be part of the programme.

3. Pest Management Strategy Implementation and Biosecurity Compliance

3.1 Pest Management Strategy

The South Island Pest Management Plan development has expanded to now include a NZ Pest Management Plan. The development of this plan has progressed to the stage that we are now able to input regional programmes. The Policy Manager and Director Environmental Monitoring and Operations are working through the national draft document to look at the rules and policy development to ensure that it can represent our regional concerns. We are also looking to work with other regions to produce the cost benefit analysis requirements for each of the top 20 pests (as identified by all regions).

3.1.1 Rabbits

Rabbit inspections have continued through this period with approximately 1,000 hectares in the Upper Clutha area and 6,000 hectares in the Alexandra and Roxburgh areas. Auditing of Rabbit Control Plans is ongoing with follow up work resulting in primary control work being undertaken on several properties.

Primary control operations throughout the region are currently in the planning stages with bait trials starting in some areas. Staff continue to work with farmers and landholders to ensure that appropriate works are undertaken and are in line with the objectives of the Regional Pest Plan.

3.1.2 Wallabies

In conjunction with the Maniototo Pest Company, staff completed an aerial inspection of an area adjacent to Naseby Forest to search for sign of wallaby following significant snowfall in the area. No animals were sighted however reasonably fresh tracks in the snow were discovered near where sign had been located during an earlier ground surveillance operation. Using intelligence gathered, combined with visible sign from

both aerial and ground operations, it is thought that the wallaby sign is that of a lone male. Local landowners have passed on comments of appreciation to Council for taking the threat of wallaby establishment in Otago seriously and are very keen to notify us every time they observe or receive notification of a sighting.

3.2 Plant Pests

3.2.1 Pinus Contorta

Fourteen notices to comply with the removal of Contorta for the Upper Clutha, one notice for the Queenstown Lakes area. An ORC Environmental Officer attended the 2014/15 New Zealand Wilding Conifer Management Meeting at Flock Hill, Canterbury on the 9-10th of June 2015. Updates were shared on progress by various community groups and territorial authorities. Interest was high in a new monitoring app that has been developed by Scion to quantify the success of programmes.

MPI and Treasury are continuing to work on the business case for urgent central government funding as future control will quickly escalate to billions unless the nationwide exponential spread of 6% per annum is not arrested and reduced.

3.2.2 Nassella Tussock

3 inspections in Cardrona Valley- approximately 375 plants found. A field day being organised with the Cardrona Landcare group to support a more pro-active approach for Nasella control, modelled on the existing Roxburgh group.

3.2.3 Low incidence plants

Work completed on Old Man's Beard, Bomarea and Bone Seed for the winter season with inspections to recommence late spring.

3.2.4 Lagarosiphon

Discussions have been held with CODC re addressing the community concerns around lagarosiphon in Lake Dunstan. LINZ are currently proposing to contract NIWA to complete an updated survey of the lake to inform on work programmes going forward. A meeting is also planned with QLDC to look at the Kawarau River infestation with the aim to reduce the risk of spread into Lake Wakatipu.

3.3 Biodiversity

Five applications received by the Honda Tree Fund, one being a grant of $500 to Queenstown Trails Trust to plant natives where Contorta have been removed along trail edge at Swiftburn, Kawarau Gorge.

4. Environmental Incident Response

4.1 Contaminated Sites

Thirty-seven enquiries regarding the land-use history or contamination status of specific properties were received.

Liaison with Territorial Authority planning managers has continued regarding the development of a shared register for contaminated land information. Interim measures to share data with the Territorial Authorities are still in place, and a workshop will be

scheduled for the first quarter of the new financial year to develop protocols for further information sharing.

4.2 Investigation

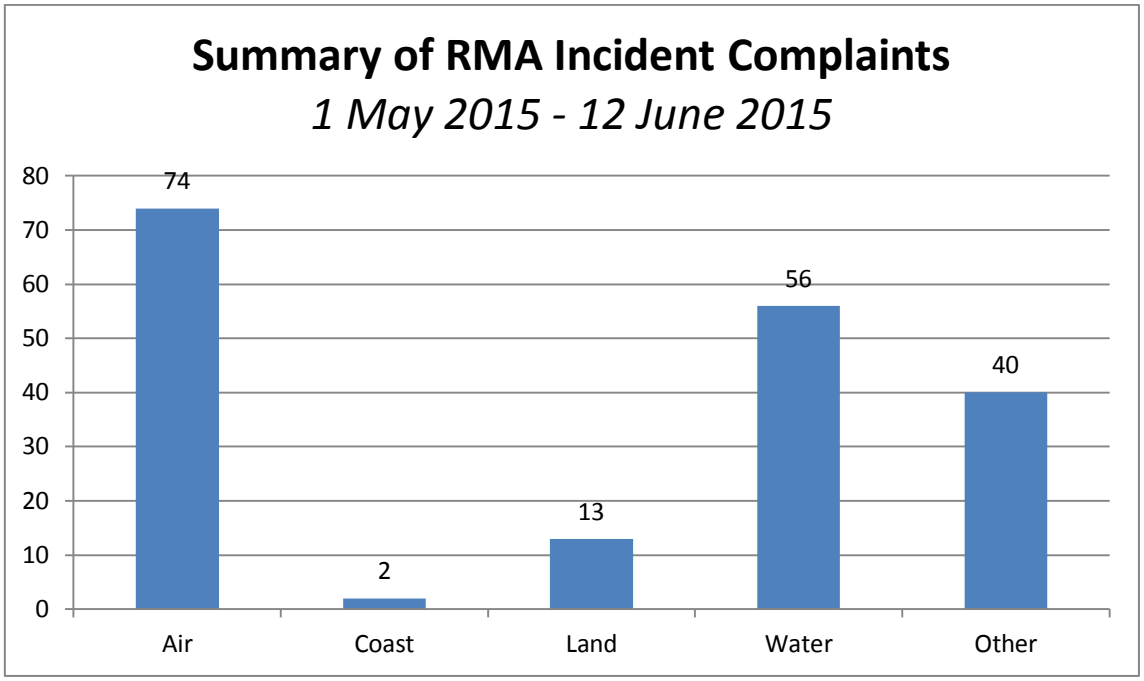
Three underground petroleum storage system (UPSS) removal reports were received during the reporting period. All reports have been assessed, and found to comply with Ministry for the Environment Guidelines. Work was carried out in accordance with industry best practice and ORC has no concerns about any environmental effects.

4.3 Oil Spill Management

Six Environmental Monitoring and Operations staff and two Port Otago staff are scheduled to attend Maritime NZ Regional Responder courses, for initial responder training in July. Two staff are also heading to Massey University for wildlife revalidation training. Regional On Scene Commander revalidation was completed by myself in mid June.

4.4 Environmental Incidents

A total of 185 incidents were reported for this period. The following is a summary of the incidents received by activity type.



The majority of the air incidents can be attributed to domestic chimneys followed by outdoor burning. The coastal incidents were attributed to marine pollution/marine oil spill. The majority of land incidents were split evenly between deposits and disturbance. Concerns about fresh water pollution were the cause of the majority of water investigations. The other types of incidents were varied, the majority were to do with dead livestock. Pest plants and issues for other agencies also featured.

5. Operations

5.1 Engineering Field Operations

Staff were kept busy during the recent flood event in Coastal Otago. Pump stations at both the Taieri and Lower Clutha were manned around the clock during the event and the subsequent days following the event. Some damage to the drainage network occurred as a result of the flooding and staff are working to rectify these issues.

5.2 Pest Operations

Four TBfreeNZ possum control jobs were completed during this reporting period. All were performance monitored and passed on first monitor. Only one job (Bendigo) remains to be completed and is in the final stages. This is the last TBfreeNZ possum project to be undertaken by Council staff.

Rabbit control operations commenced in the Upper Clutha Basin during this reporting period. Liquid pindone is now available again after a year with no availability throughout the country. Snow continues to be a problem for rabbit control operations. Many landowners have been forced to stock lower country because of the snowline and this therefore reduces the amount of land available for poison operations.

6. Recommendation

That this report be noted

Jeff Donaldson
Director Environmental Monitoring and Operations

Otago Regional Council

Summary of RMA Incident Complaints (General Location)

From 1 May 2015 to 12 June 2015

General Location		AIR							COAST					LAND				WATER					OTHER		
	Row Summary	Backyard burning	Burning	Domestic Chimneys	Dust	Industrial air discharge	Odour	Spray Drift	Coastal structures	Marine oil spill	Marine Pollution	Reclamation	Removal	Deposit	Disturbance	Land Contamination	Mining	Abstraction	Damming	Diversion	Fresh water pollution	Stormwater	Noise	Other	Staff Performance
Catlins	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
Central Otago	23	2	5	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	9	0	0	2	0
Clutha Plains	9	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	0	0	1	0
Dn - Abbots/Green Is	17	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	5	0
Dn - Coast North	3	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Dn - Coast South	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dn - Inner City	37	0	0	9	0	1	6	1	0	0	0	0	0	0	1	0	0	0	2	0	1	0	0	16	0
Dn - Mosgiel	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dn - Otago Harbour	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Dn - Peninsula	15	0	1	2	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	4	0	0	5	0
Dn - West Harbour	3	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
East Otago Uplands	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
Lakes	21	0	4	4	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	3	0
Maniototo	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
North Otago	21	0	0	0	0	0	1	2	0	0	0	0	0	2	0	1	0	0	0	0	10	0	0	5	0
Roxburgh	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
South West Otago	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Strath	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taieri Plains	18	2	10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	3	0
TOTALS	185	7	25	28	0	2	9	3	0	1	1	0	0	5	5	3	0	0	3	1	52	0	0	40	0

Otago Regional Council

REPORT

Document Id: A805113

Report Number: 2015/1022
Prepared For: Regulatory Committee
Prepared By: Marian Weaver, Chris Shaw
Date: 15/07/2015

Subject: **Consent Processing and Building Control Authority Report 15 May to 30 June 2015**

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1. Project E.1 – Resource Consent Application Processing

1.1 Consent applications where status has not changed since the last report are summarised in Appendix 1.

1.2 In June the Consents Department participated in workshops lead by VIAGO International to identify ways of improving the performance and efficiency of the Department. It was a great opportunity for the team to identify problem areas and design strategies for improvement. So far, two main positive outcomes have been achieved. First, a change in approach to handling customer enquiries with the assistance of Corporate Services. This has given more time to consent officers for consent processing without detriment to our customers. Second, a more visible workflow system has been developed which highlights consents that are accumulating calendar days (as opposed to RMA processing days). The workflow provides a visible prompt for staff to actively push this type of consent to completion. The team enjoyed the workshop and after a month of implementation are delighted with the success of the changes that have been made.

Notified Applications

1.3 Limited Notified Applications
There are 5 applications currently going through the limited notification process where either written approvals have not been forthcoming, or the applicant has requested limited notification. Hearings will be set up where there are opposing submissions.

2. Appeals to Environment Court / Objections

RM14.026 Lakes Marina Projects Limited

The application is for the construction of a 195 berth marina in the Frankton Arm of Lake Wakatipu. This was a joint process with the ORC as lead agency. The application was heard by independent commissioners in December 2014 and January 2015. The decision was given on 23 February to grant the applications subject to conditions, and there were two appeals from owners of residential premises nearby. One appellant withdrew and there are two s274 parties involved. All parties agreed to go to mediation which was held in Queenstown on 18 May. Agreement was reached by

changing consent conditions in the QLDC consent. ORC consents were issued on 3 June.

3. Consent Statistics

Table 1. Consents Statistics Summary

Reporting Period	Lodged			Rejected	Decision Given		
	Consents	Variations			Consents	Variations	
		Regular	Water reporting date			Regular	Water reporting date
2013/14 Year total	**450**	**30**	**42**	**13**	**410**	**53**	**72**
1 July to 15 Aug 14	29	5	1	1	35	5	11
18 Aug to 26 Sept 14	45	8	1	2	50	4	1
27 Sept to 7 Nov 14	48	6	5	1	57	6	5
10 Nov 14 to 9 Jan 15	70	0	5	4	50	5	3
12 Jan to 27 Feb 15	54	4	3	1	51	7	1
28 Feb to 3 Apr 15	43	3	2	1	33	19	3
6 Apr to 15 May 15	29	1	5	0	56	7	2
18 May - 30 June 15	28	6	2		24	1	6
14/15 year total to date	**348**	**33**	**24**	**10**	**356**	**54**	**31**

All decisions on consents were given within RMA allowed timeframes.

4. Consent Administration

Table 2. Consent Administration Statistics

Reporting Period	Transfers Received	Transfers Issued	S417 Certs Received	S417 Certs Issued
2013/2014 Year Total	**208**	**215**	**16**	**3**
1 July 14 to 15 Aug 14	15	11	0	2
18 Aug to 26 Sept 14	25	17	0	2
27 Sept to 7 Nov 14	13	23	1	0
10 Nov 14 to 9 Jan 15	23	30	1	0
12 Jan to 27 Feb 15	9	8	0	2

28 Feb to 3 Apr 15	13	10	0	0
6 Apr to 15 May 15	19	11	0	0
18 May to 30 June 15	15	24	0	0
14/15 year to date	**89**	**91**	**2**	**6**

5. Building Consent Authority (BCA) Administration

In Progress

Dam Building Consents	4
Code Compliance Certificates	1
PIM	0
Certificate of Acceptance	6

Dam Safety

The Building (Dam Safety) Regulations 2008 have been revoked . A separate report by Dr Palmer explains the effect of this.

6. Public Enquiries

Appendix 2 shows that 360 enquiries were received by the Consents Unit during the reporting period.

Table 3. Public Enquiries Statistics

Period	Number of Enquiries
2013/2014 year	**1490**
1 July to 15 Aug 14	180
18 Aug to 26 Sept 14	148
27 Sept to 7 Nov 14	235
10 Nov 14 to 9 Jan 15	322
12 Jan to 27 Feb 15	393
28 Feb to 3 Apr 15	355
6 Apr to 15 May 15	266
18 May to 30 June 15	360
14/15 year	**2259**

7. Recommendation

That this report is noted.

Fraser McRae

Director Policy Planning and Resource Management

Otago Regional Council

Appendix 1: Summary of applications that have not changed since the last report to the Committee

RM14.106 Southern Clams Limited

The application is to establish three aquaculture sites within Otago Harbour. At each location shellfish, including Bluff Oysters, Queen Scallops, Tuaki Clams and Paddle Crabs, will be held in cages for up to 8 weeks before being collected and sold commercially. The cages will be one metre long and stored up to three deep, and suspended by long lines and floats. Structures are to be located within the harbour over a 38 week season each year approximately from May to December. The application was publicly notified on 21 February and attracted 44 submissions: 8 in support, 4 neutral and 32 opposed. 15 submitters indicated that they wish to be heard. The applicant has requested a hearing in August to allow time to discuss concerns with submitters and make changes to the application that may be required as a result of further consultation.

RM12.066 – Environment Canterbury - erosion protection works in the Lower Waitaki River.

Environment Canterbury has applied for consents to allow them to undertake erosion protection works in the Lower Waitaki River. Numerous erosion protection measures are proposed over a 3 km stretch of river. DoC, Iwi, Fish and Game and owners of land on which the works are to take place are all considered to be affected parties. The applicant advised recently that they are currently working through a consultation process to determine whether or not the works applied for will continue to be undertaken.

They anticipate the outcome of this consultation on or before the 1st July 2015 as it is tied in with Annual Plan processes. Therefore the application continues to remain on hold until 1st July 2015.

Pending Applications of Interest

RM13.423 – Manuherikia Catchment Water Strategy Group (MCWSG)

A working party has been established comprising MCWSG, Golder Associates and ORC staff. The aim of the working party is to develop a consenting strategy giving regard to existing mining privileges, individual water takes and irrigation options within the Manuherikia catchment.

Otago Regional Council

Resource Consent Public Enquiry Report

For period from 18 May 2015 to 30 June 2015

Total Enquiries 360

Enquiry Type	No.	% of Total
Current Consents	147	40.8 %
Mining Privileges	2	0.6 %
Other	35	9.7 %
Permitted Activities	93	25.8 %
Pre-application	51	14.2 %
Property Enquiries	25	6.9 %
Students	1	0.3 %
Transfers	6	1.7 %

Enquiry Location	No.	% of Total
Central Otago District Council	105	29.2 %
Clutha District Council	26	7.2 %
Dunedin City Council	67	18.6 %
Outside Otago	1	0.3 %
Queenstown Lakes District Council	64	17.8 %
Throughout Otago	15	4.2 %
Unspecified	52	14.4 %
Waitaki District Council	30	8.3 %

Enquiry Method	No.	% of Total
Counter	22	6.1 %
Email	173	48.1 %
Letter	1	0.3 %
Telephone	164	45.6 %

Otago Regional Council

REPORT

Document Id: A802151

Report Number: 2015/1013
Prepared For: Regulatory Committee
Prepared By: Peter Kelliher, Legal Counsel
Date: 1 July 2015

Subject: **Resource Management Act 1991, Biosecurity Act 1993 and Building Act 2004 Enforcement Activities from 17 May 2015 to 30 June 2015**

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1. Précis

This report details Resource Management Act 1991, Biosecurity Act 1993 and Building Act 2004 enforcement activities undertaken by the Otago Regional Council during the period 17 May 2015 to 30 June 2015.

2. Enforcement Action under the Resource Management Act 1991

a) Consent Auditing

No enforcement action taken.

b) Consent Performance Monitoring

Table 1. Abatement Notices

Details	Period – 17 May 2015 to 30 June 2015	Total – from 1 July 2014
To cease taking water in breach of water meter regulations	0	2
TOTAL	0	2

c) Permitted Activity Rules - Inspections

Table 2. Infringement Notices

Details	Period – 17 May 2015 to 30 June 2015	Total – from 1 July 2014
Discharge of contaminants to land in breach of a regional rule – effluent	3	19
TOTAL	3	19

Table 3. Authorised Legal Proceedings

Details	Period – 17 May 2015 to 30 June 2015	Total – from 1 July 2014
Discharge of contaminants to land in breach of a regional rule – effluent	0	6
TOTAL	0	6

d) Incidents

Table 4. Infringement Notices

Details	Period – 17 May 2015 to 30 June 2015	Total – from 1 July 2014
Discharge of contaminants to air – outdoor burning	0	3
Discharge of contaminants to air – burning prohibited materials	0	2
Disturbing the bed of a river – pugging	0	1
Discharge of contaminants to land in breach of a regional rule – effluent	0	1
TOTAL	0	7

Table 5. Authorised Legal Proceedings

Details	Period – 17 May 2015 to 30 June 2015	Total – from 1 July 2014
Discharge of contaminants to land in breach of a regional rule – effluent	0	2
Discharge of contaminants to air – burning prohibited materials	0	4
Disturbing the bed of a river – pugging	0	2
(1) Disturbing the bed of a river – pugging; and (2) Discharge of contaminants in breach of a regional rule – sediment	0	1
Discharge of contaminants in breach of a regional rule – sediment	1	1
TOTAL	1	10

e) Total Infringements Issued and Authorised legal Proceedings – 1 July 2014 – 30 June 2015

Table 6. Total Infringements Issued (Consents, Inspections and Incidents)

Details	Total – from 1 July 2014
DAIRY EFFLUENT	
Discharge of contaminants to land in breach of a regional rule –	20

effluent	
OTHER	
Discharge of contaminants to air – outdoor burning	3
Discharge of contaminants to air – burning prohibited materials	2
Disturbing the bed of a river – pugging	1
TOTAL	26

Table 7. Total Authorised Legal Proceedings (Consents, Inspections and Incidents)

Details	**Total – from 1 July 2014**
DAIRY EFFLUENT	
Discharge of contaminants to land in breach of a regional rule – effluent	8
OTHER	
Discharge of contaminants to air – burning prohibited materials	4
Disturbing the bed of a river – pugging	2
(1) Disturbing the bed of a river – pugging; and (2) Discharge of contaminants in breach of a regional rule – sediment	1
Discharge of contaminants in breach of a regional rule - sediment	1
TOTAL	16

3. Biosecurity Act 1993

No enforcement action taken during the period.

4. Building Act 2004

No enforcement action taken during the period.

5. Recommendation

That this report be noted.

Fraser McRae
Director Policy Planning and Resource Management

REPORT

Document Id: A795269

Report Number: 2015/0980
Prepared For: Regulatory Committee
Prepared By: Director Policy, Planning and Resource Management
Date: 15 July 2015

Subject: **Appointment of hearing commissioners to 15 July 2015**

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1. Précis

An amendment to the Resource Management Act in 2005 means that consent hearing commissioners must be appointed by the Council. The Commissioner Appointment Subcommittee has this function and reports to the Regulatory Committee. The appointments made in this reporting period are set out in this report.

2. Meeting 27/28 May

Present	Crs Woodhead and Robertson
Applicant	Mt Campbell Station Ltd
Appn. No.	RM14.206
Activity	To dam, discharge contaminants to and to disturb the bed of a tributary of Bickerstaffe Creek and Mt Campbell Creek for the purpose of constructing two water storage dams
Motion	Moved Cr Woodhead, seconded Cr Robertson
Appointment	Crs Scott (Chair) and Neill; reserve Cr Kempton

3. Meeting 8/9 July

Present	Crs Croot, Woodhead and Robertson
Applicant	JW and JR Cooper
Appn. No.	RM14.342
Activity	To take water for irrigation from two consented bores on the true left bank of the Clutha River
Motion	Moved Cr Robertson, seconded Cr Woodhead
Appointment	Emma Christmas

4. Recommendation

That the report be noted.

Fraser McRae
Director Policy, Planning and Resource Management

OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Technical Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 22 July 2015 following the Regulatory Committee

Membership:

Cr Bryan Scott (Chairperson)
Cr Doug Brown (Deputy Chairperson)
Cr Graeme Bell
Cr Louise Croot MNZM
Cr Michael Deaker
Cr Gerrard Eckhoff
Cr Gary Kelliher
Cr Trevor Kempton
Cr Sam Neill
Cr Gretchen Robertson
Cr David Shepherd
Cr Stephen Woodhead

Apologies:

Leave of Absence: **Cr Gerrard Eckhoff**

In attendance:

Please note that there is an embargo on agenda items until 8.30 am on Monday 20 July.

CONFIRMATION OF AGENDA

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 3 June 2015, having been circulated, for adoption.

Matters arising from minutes

Otago Regional Council

PART A – RECOMMENDATIONS

Item 1
2015/1003 **Updated landslide hazard information for Dunedin City**. DEHS, 26/06/15

The report updates on a program of work to improve the understanding of landslide hazard with the Dunedin City district. The full report 'Active landslides in the Dunedin Area' and the GNS Science report 'Dunedin Landslide susceptibility' are circulated separately.

PART B - ITEMS FOR NOTING

Item 2
2015/0927 **Air Quality SoE Report 2005 – 2015**. DEHS, 19/05/15

The report describes the current state of the air quality, provides information on trends in air quality over the last 10 years, and discusses the pressures and influences on ambient air for 14 sites in Otago. The full report 'Air Quality SoE Report 2005 – 2014' is circulated separately.

Item 3
2015/1008 **Coastal Otago Flood Event 3 June 2015**. DEHS, 08/07/15

The report summarises the rainfall event of 2 June 2015, the observed river flows and water levels which resulted from that rainfall, and describes Otago Regional Council's response to the situation.

Item 4
2015/1024 **Lindis Catchment: Water Quality Study**. DEHS, 07/07/15

The report has been prepared to present the results of long-term State of the Environment monitoring at two sites in the Lindis River, intensive water quality monitoring at six additional mainstem sites and two tributary sites in 2013-2014 as well as ecological surveys carried out in 2014-2015. The full report 'Water Quality Study: Lindis River Catchment' is circulated separately.

Item 5
2015/1026 **Taieri River Shutdown**. DEHS, 07/07/15

The report presents the information on the hydrology of the main stem of the Taieri River and tributaries as well as on the ground observations gathered during the 24 hour voluntary irrigation shutdown. The full report 'The effects of the 24 hour voluntary irrigation shutdown on flows in the Taier River: 15th – 16th January 2015' is circulated separately.

Item 6
2015/0999 **Director's Report on Progress.** DEHS, 09/07/15

Topics covered in the report are: Sendai Framework for Disaster Risk Reduction, Weather radar for Otago, Waipori floodbank seismic investigations.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Technical Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 3 June 2015 commencing at 12.03 pm

Present: **Cr Bryan Scott** (Chairperson)
Cr Doug Brown (Deputy Chairperson)
Cr Graeme Bell
Cr Michael Deaker
Cr Gerrard Eckhoff
Cr Gary Kelliher
Cr Trevor Kempton
Cr Sam Neill
Cr Gretchen Robertson
Cr David Shepherd
Cr Stephen Woodhead

Leave of Absence: **Cr Louise Croot**

In attendance: **Peter Bodeker**
Wayne Scott
Jane Leahy
Fraser McRae
Gavin Palmer
Janet Favel

CONFIRMATION OF AGENDA

There were no changes to the agenda.

MINUTES

The minutes of the meeting held on 22 April 2015, having been circulated, were adopted on the motion of Crs Scott and Shepherd.

Matters arising from minutes

There were no matters arising from the minutes.

Otago Regional Council

PART A – RECOMMENDATIONS

Item 1
2015/0960 **Update to Taieri Plain flood hazard mapping for Dunedin City District.** DEHS, 22/5/15

The report described work carried out to further refine the earlier descriptions of flood hazard characteristics on the Taieri Plain. The full report was circulated separately with the agenda.

Comment was made that the process mirrored the Milton 2060 project, and it was crucial that the work flowed through to the DCC's review of its District Plan provisions. It was important to ensure new developments were constructed away from hazards such as floodways or swamps. Dr Palmer advised that ORC and DCC were continuing to collaborate closely, and this was reaffirmed at the recent meeting of the two chief executives.

Cr Bell moved
Cr Kelliher seconded

That:

1. *This report be received;*
2. *The accompanying technical report 'Revised Flood Hazard on the Taieri Plain' be noted and endorsed;*
3. *These reports be provided to the Dunedin City Council to inform the review of the natural hazards provisions of the Dunedin City District Plan.*

Motion carried

PART B - ITEMS FOR NOTING

Item 2
2015/0926 **Director's Report on Progress.** DEHS, 27/5/15

The report discussed Arrow River flood and erosion hazard, Kakanui River Morphology and Riparian Management, and Wanaka earthquake and high flow event.

The results of a recently completed report on the flood and erosion hazard of the Arrow River were presented to a public meeting held in Arrowtown on 13 May. Dr Palmer explained in response to a question that the low gravel training line in the Arrow River near Arrowtown was part of the special rating district. Consideration was being given to whether the consent for the bund should be renewed. It was noted that the bund created a safe environment and enabled Bush Creek to be accessed by children, and there was concern that if the consent was not

renewed, that facility would be lost. Dr Palmer advised that recreational uses were discussed at the public meeting.

The public meetings and drop in sessions held to present the draft Kakanui River Management Strategy were noted. Those attending the meetings were supportive of Council's approach, and encouraged continuation of the work.

Reference to the earthquake centred near Wanaka in early May was noted, and Dr Palmer was to seek information on the recent flurry of earthquakes in the area.

Cr Kelliher moved
Cr Eckhoff seconded

That the report be noted.

Motion carried

The meeting closed at 12.17 pm.

Chairperson

Otago Regional Council

REPORT

Document Id: A800298

Report Number: 2015/1003
Prepared For: Technical Committee
Prepared By: Mike Goldsmith, Manager Natural Hazards
Ben Mackey, Natural Hazards Analyst
Date: 23/06/2015

Subject: **Updated landslide hazard information for Dunedin City**

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1. Précis

A program of work to improve the understanding of landslide hazard within the Dunedin City district commenced in 2012. The results of this work are intended to aid in the identification and management of land instability hazards, and to help guide land-use planning. Recent work involves the identification of the most active group of known landslides within the Dunedin district, and areas which are potentially susceptible to landsliding.

This work supersedes a previous investigation for ORC in 2006 by the Institute for International Development (IID) which provided an initial assessment of the existence and completeness of landslide hazard information in the Otago Region.

Further work is underway to assess the land instability effects of a heavy rainfall event on 3 June 2015.

2. Background

The term landslide describes a variety of processes that result in the downward and outward movement of slope-forming materials including rock, soil, artificial fill, or a combination of these. Landslide processes have helped to shape the topography of Dunedin City over thousands of years.

The ORC has undertaken a range of work over the last 3 years to improve the understanding of landslide hazard within the Dunedin City district. This work is intended to be used primarily in planning, policy and consenting activities, and is being used to help inform the review of the natural hazard provisions of the Dunedin City District Plan.

The initial stage involved the creation of a database of previously mapped landslide features, combining data from a variety of sources.[1] The database was subsequently updated with additional parameters, to allow the hazard significance of landslides in particular areas to be determined.[2]

3. Recent work

The development of the landslide database has confirmed pre-existing knowledge that there are a small number of active landslides which can pose a significant risk to people and assets, while other areas may possibly be susceptible to further movement, despite a

[1] "Updated landslide data for Dunedin District", Report 2012/1261, Prepared for Engineering and Hazards Committee, Otago Regional Council, 23 January 2013.
[2] "Assessment of hazard significance of landslides in Dunedin City", Report 2014/767, Prepared for Technical Committee, Otago Regional Council, 16 April 2014.

lack of recently observed activity. Two additional pieces of work have been undertaken to help improve the management of landslide hazard, both on features which are currently active, and in areas which may be susceptible to instability in the future.

The ORC has undertaken further work to determine and describe the most active group of known landslides – those which are currently moving at a rate of 1cm/year or more, and/or are particularly sensitive to changes in the environment (*'Active landslides in the Dunedin area')*.

ORC also commissioned further work by GNS Science to identify areas which are potentially prone to landslide activity in the near-coastal sector of the Dunedin City district (*'Identification of areas possibly susceptible to landsliding in the coastal sector of the Dunedin City district')*. The results of these two reports are described below.

4. Results

Two reports have been prepared to further progress the understanding of landslide hazard in the Dunedin district. This information will be made available to the public via the ORC website, and through the updated Otago Natural Hazards Database platform once development of this is complete.

Active landslides

The report *'Active landslides in the Dunedin area'* has been prepared by ORC natural hazards staff, and describes 12 landslides which are currently active. These are known landslide features, where existing information indicates that landslide hazard requires careful management. In general, any increase in risk within these areas should be prevented, and new sensitive[3] activities are generally not appropriate.

Monitoring undertaken by ORC and GNS following a heavy rainfall event on 3 June 2015 confirmed further movement had occurred recently on several of these landslides, and an example is shown in Figure 1. Many of these 12 landslides are also monitored for horizontal and vertical movement by the DCC, with observed rates between 1 and 23cm / year.

It is likely that there are other features which meet the above criteria, but for which there is little or no existing information. In addition, new landslides which would meet these criteria can occur in the future (eg, as a result of heavy rainfall or seismic shaking events).

[3] 'Sensitive' activities are those where people are routinely present and may be vulnerable (eg, when they are asleep, or where elderly or children are likely to be present). Buildings associated with such activities usually represent a significant investment for the landowner.

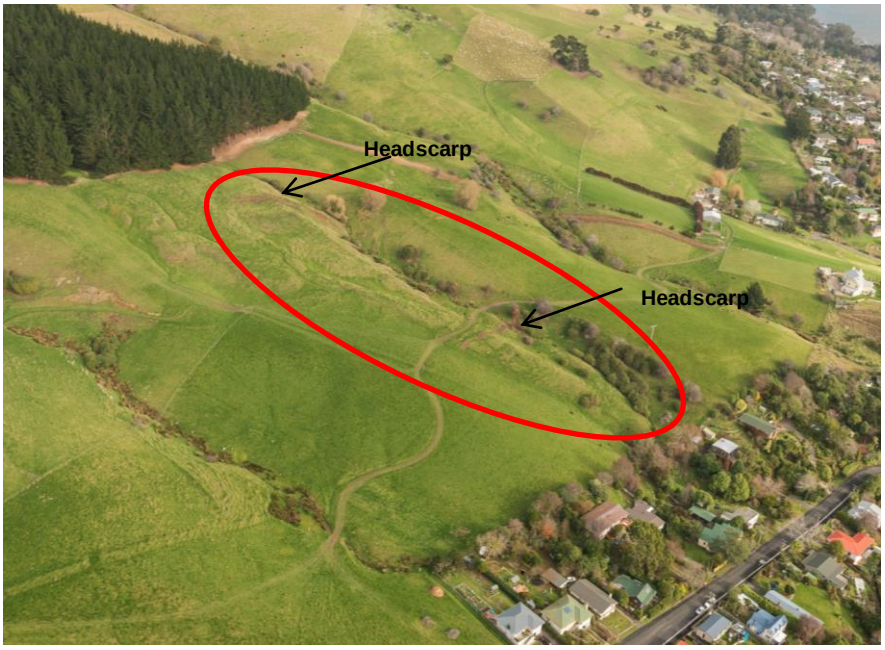

Figure 1. Aerial view of the Greenacres Street landslide on 16 June 2015. The approximate extent of the most recent movement is circled in red. View is to the southwest. Photo: Alan Dove Photography.

Areas susceptible to landsliding

As part of the public consultation process for the District Plan review, the DCC and ORC held a series of 13 public meetings in June – August 2014. Feedback received during this process identified that land which is potentially prone to landslides should be identified within the District Plan, as well as known landslide features. The report *'Identification of areas possibly susceptible to landsliding in the coastal sector of the Dunedin City district'* was commissioned by the ORC in January 2015 (GNS Science Consultancy Report 2015/34), and provides an office-based assessment of potentially landslide prone areas in the most densely populated parts of the Dunedin district.

This investigation found that slope angle is the main driving force for landslides, and that where slopes are steeper than about 12°, slope stability is something that should be considered in regards to the suitability of new development or changes in land use. The exception to this guidance is where the ground surface consists of weak sedimentary rocks such as the Abbotsford Formation and Burnside Mudstone. These rocks are known to have a tendency to be unstable in certain settings, even where the ground slopes are gentle (e.g. ~5°).

The GNS report identifies and maps two new datasets that provide information on potential susceptibility to landsliding:

- Slope Awareness Areas (land steeper than 12°), and
- Geologically Sensitive Areas (comprising the weak sedimentary rocks mentioned above).

The report is careful to clarify that these mapped areas are not hazard zones as such, and are not inherently unstable. Rather, they describe areas that may potentially be susceptible to landslide movement, and where slope stability should be considered in future land-use planning.

5. Ongoing work

A heavy rainfall event across eastern Otago on 3 June 2015[4] resulted in numerous landslides on hillslopes in the Dunedin district. This included movement of previously identified features as well as 'first-time' landslide failures. Staff from ORC and GNS Science completed a program of observations and assessment of landslide activity following this event, as well as collating observations from other agencies, and are currently undertaking further work to compare the level of activity during June 2015 event with previous heavy rainfall events.

6. Recommendations

That:

1. This report is noted;
2. The landslide reports and associated datasets described above are provided to the Dunedin City Council and updated to the Otago Natural Hazards Database.

Gavin Palmer
Director Engineering, Hazards and Science

[4] "Otago Flood event 3 June 2015". Report 2015/1008. Prepared for Technical Committee, Otago Regional Council, 22 July 2015.

Otago Regional Council

REPORT

Document Id: A778111

Report Number: 2015/0927
Prepared For: Technical Committee
Prepared By: Deborah Mills, Resource Scientist Air Quality
Date: 19 May 2015

Subject: **Air Quality State of the Environment in Otago Report: 2005-2014**

A State of the Environment (SoE) report on Otago air quality (2005-2014) has been prepared (report circulated separately). The report describes the current state of air quality, provides information on trends in air quality over the last 10 years, and discusses the pressures and influences on ambient air for 14 sites in Otago.

Council operates a long-term ambient air quality monitoring network in order to sample and analyse particulate levels throughout the region. Many towns have elevated PM_{10}[1] emissions during winter months due to the heavy reliance on solid-fuel burners for domestic heating. PM_{10} concentrations in several towns in Central Otago and in Milton are further exacerbated by the winter weather patterns that exist in those areas. The best air quality in Otago is found in Central Dunedin which currently meets all national standards and guidelines for healthy air.

In 2004, the Otago Regional Council developed strategies to upgrade solid-fuel burning domestic appliances in an effort to lower the amount of PM_{10} emissions. At the time, it was thought that these emission reductions would lead to significantly lower PM_{10} concentrations and compliance with the National Environmental Standards for Air Quality (NESAQ) [2]. To assist residents, a financial incentive programme focussed on towns in Central Otago where winter air quality was known to be very poor. During the past seven years, over 1000 low-emission[3] heating appliances have been installed in Central Otago.

Results of trend analyses in Central Otago towns indicate that there have been small, statistically significant downward trends in particulate levels in Arrowtown, Alexandra, and Clyde. However, these reductions in concentrations have not led to significantly improved air quality as regards the NESAQ. Dunedin's air quality, on the other hand, has improved significantly over the last ten years and now meets all standards and guidelines for PM_{10}. Mosgiel data exhibit an upward trend of 3% per annum over the past 10 years, equating to an increase of 0.5 $\mu g/m^3$ each year.

In general, Otago towns have good air quality throughout most of the year. During winter months, however, the combination of increased emissions and decreased dispersion of particulates, due to inversions, often results in degraded air quality. This is particularly true in the Central Otago towns of Alexandra, Arrowtown, Clyde and Cromwell where daily air quality is frequently reported to exceed the NESAQ standards

[1] Particulate matter with an aerodynamic diameter of less than 10 micrometres, suspended in the atmosphere.

[2] By 2020, the threshold concentration for average daily PM_{10} ($50\mu g/m^3$) must not be exceeded more than one day per year. By an interim compliance date of 1 September 2016, there must be no more than three days per annum exceeding the threshold concentration.

[3] Wood burners with PM_{10} emission ratings of 0.7g/kg of dry wood burnt, with efficiencies of no less than 65%.

for healthy air. Most coastal towns generally have good air quality year-round; the one exception is Milton, which experiences very poor winter air quality.

Recommendation
That this report is noted.

Gavin Palmer
Director Engineering, Hazards and Science

REPORT

Document Id: A801392

Report Number: 2015/1008
Prepared For: Technical Committee
Prepared By: Michael Goldsmith, Manager Natural Hazards
Jean-Luc Payan, Senior Investigations Engineer
Rebecca Morris, Groundwater Scientist
Chris Valentine, Manager Engineering
Scott MacLean, Manager Operations
Lu Xiaofeng, Resource Scientist Hydrology
Nineva Vaitupu, Senior Environmental Data Officer
Ben Mackey, Natural Hazards Analyst
Date: 8 July 2015

Subject: **Coastal Otago Flood event 3 June 2015**

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1. Précis

A low pressure system to the southeast of the South Island bought heavy rainfall to coastal Otago on 3 June 2015. This report summarises the rainfall event, the observed river flows and water levels which resulted from that rainfall, and describes Otago Regional Council's response to the situation. The situation is compared with previously observed events, such as that which occurred in April 2006[1,2]. The report includes details of the effects on South Dunedin and the relationships between sea level, rainfall, groundwater level and surface water levels.

Although the highest rainfall totals were observed in and around the Dunedin City urban area, the event was reasonably widespread, and also affected the Waitaki, Clutha and Central Otago districts. In Dunedin, the rainfall totals were reasonably uniform across the main urban area. This pattern was not evident in other recent heavy rainfall events where heavy falls generally only occurred in the hilly areas around the City. The 1-day rainfall total at Musselburgh (142mm) was the 2nd highest since records began in 1918, and is currently estimated to have a return period of 63 years. Such an event has a 27% chance of occurring in any 20-year period, a 55% chance of occurring in any 50-year period and an 80% chance of occurring in any 100-year period. Elsewhere across the City, the estimated return period for 1-day rainfall totals ranged from 18 years (Dunedin Airport) to 50 years (Pine Hill).

River flows generally peaked late evening on 3 June. There were no major flooding issues directly attributable to high river flows, although Lindsay Creek (at Palmers Quarry) and Silver Stream (at the Gordon Road Spillway) both overtopped their banks and part of Henley was flooded. However, the widespread, persistent rainfall resulted in significant flooding due to surface runoff and excess stormwater in a number of locations, including South Dunedin and many other parts of Dunedin City, Milton, part of Mosgiel, and on the Clutha Delta. A large number of landslides were also observed around the Dunedin City district.

Sea level peaked around the 3.30pm afternoon high tide, which was a smaller-than-average spring tide. This was not the highest sea level in the month leading up to the rain event despite the low pressure system that crossed the region on 3 June, resulting in a storm tide level 0.25m higher than would have occurred under normal atmospheric conditions.

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[1] *Mosgiel Flood Event 25/26 April 2006 and future action*, Report No. 2006/689, Prepared for Otago Regional Council Policy and Resource Planning Committee, 17 November 2006

[2] *Natural Hazards on the Taieri Plains*, Report No. 2012/0897, Prepared for Otago Regional Council Engineering and Hazards Committee, 18 July 2012

An analysis of the Silver Stream and Water of Leith flow records shows that the frequency and magnitude of flood peaks has been noticeably greater during the previous 10 years (2006-2015) than during the preceding 40 years.

2. Introduction

On 1-2 June 2015, a low pressure system moved slowly to the southeast across the South Island. By 3 June, the low was just east off the coast of the South Island with three stationary fronts originating from the centre (Figure 1). The position and duration of this low pressure system created conditions for steady, heavy rainfall in eastern Otago and inland towards Central Otago throughout the day. As a result of the rain that fell on 3 June, every coastal catchment from Oamaru south to Balclutha experienced some degree of flooding. This report summarises the rainfall, river flows, and water levels recorded during the event, and Otago Regional Council's response to the situation.

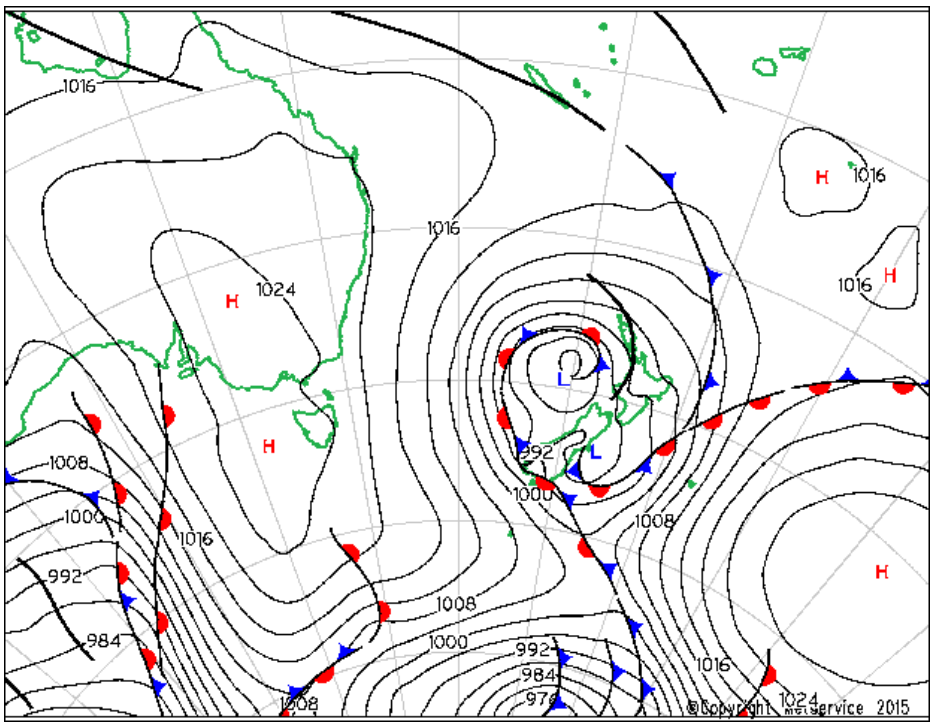

Figure 1. Situation map for 6am on 3 June, 2015 (MetService)

3. Weather Warnings, flow advisories, and territorial authority notifications

This section describes, in chronological order, the MetService Weather Warnings received by ORC, the changes to those Warnings as the event progressed, and the actions taken by ORC staff to disseminate rainfall and flow advisories to territorial authorities and to the public.

2 June 2015

A Severe Weather Warning was issued by MetService at 9am on 2 June which predicted heavy rainfall over an 18 hour period, commencing at 6am on 3 June, until midnight. The Warning was for 80 to 100mm of rainfall about the hills and ranges of Dunedin and Clutha, with 50-70mm possible elsewhere. Peak intensities of 10 to 15mm per hour were expected, and experience during previous events was that the heaviest intensities would occur in the ranges, with lower intensities in lower-lying areas. This warning was repeated at midday and 9pm on 2 June. On the afternoon of 2 June, the ORC Flood Manager (FM)[3] contacted the Emergency Management Officer (EMO) for

[3] Because of the duration of the event the lead Flood Manager role was assigned to a number of people throughout the event, and in many cases the FM delegated other staff to undertake the actions listed in this section.

Clutha District Council (CDC), in regards to pre-flood activities defined in the joint CDC/ORC Milton Action Plan. The MetService Warning correctly predicted the onset of heavy rain, with intensities increasing noticeably between 5am and 6am on 3 June (Figure 2).

3 June 2015: 9am til midday

At 9am on 3 June, slightly different advice was received from MetService - predicted rainfall totals were the same, but the timing was over a 17 hour timeframe (from 9am Wednesday 3 June til 2am Thursday 4 June). By that time, approximately 30mm had already fallen at the Pine Hill, Sullivans Dam and Musselburgh gauges, at an intensity of 5 to 8mm per hour. This Warning did not specify whether the rain that had already fallen was additional to, or inclusive of the predicted totals. The Warning described the outlook as *"Persistent rain, heavy at times, expected to ease overnight".* Following this updated Warning, the FM made initial contact with the EMO's for the Waitaki and Dunedin City districts in regards to possible flood effects. At that time, the predicted rainfall totals were not expected to cause major flooding issues for rivers in coastal Otago.

3 June 2015: midday til evening

By late morning, observations from rain gauges across the Dunedin area, including on low-lying areas, showed ongoing rainfall of a high intensity.

Around this time MetService also received updated results from their in-house forecasting model. Guidance in this new model run suggested the intensities being recorded in gauges would last longer and possibly into the evening hours. This prompted the MetService forecast team to re-assess and update the Warning to respond to this new information. As such, the Warning issued at 12:06pm on 3 June represented a significant change from earlier warnings, as it predicted another 80 to 100mm of rain, on top of what had already fallen, in the 14 hours til 2am Thursday. By that time, 50-60mm of rain had already fallen across Dunedin (Figure 2), and hourly rainfall intensities had increased to between 9 and 12mm per hour.

The Otago CDEM Group activated in a monitoring role. Meteorological and hydrological information were provided to the Otago Group Controller and the ORC Executive Team. The FM made telephone contact with the DCC EMO at 12:45pm, and confirmed that the rainfall intensities now predicted may result in the Silver Stream overtopping at the Gordon Road Spillway. The FM was informed that the DCC Emergency Operations Centre (EOC) had activated. Another 8 telephone calls to the DCC EOC in regards to predicted flows, and the likely effects of the Silver Stream, Water of Leith, Lindsay Creek and Kaikorai Stream overtopping their banks were made between 1:39pm and 5:10pm. ORC staff carried out targeted inspections of the Water of Leith, Lindsay Creek, Kaikorai Stream, Milton and parts of the Taieri into the evening, with a focus on condition and performance of ORC flood protection and land drainage assets. Observations were reported back to the FM and evaluated by engineering and hazards staff. As a precautionary measure, preparations were made for the Riverside spillway to be lowered should the Taieri reach the trigger flows that have been agreed with landholders.

Between 3:15 and 3:35pm, the ORC FM engaged the autodial system to ring the Silver Stream flood warning list, the Pomahaka at Glenken 1st list, and also used the Twitter text alert system to notify people of high river flows in the Clutha and Dunedin areas. The 2nd Glenken list was rung at 4:15pm. A media release was issued at 5:00pm, warning that the Silver Stream was expected to overtop at the Gordon Road Spillway, and a second release at 8:30pm reiterated this message.

3 June 2015: evening

Between 5:15 and 6:20pm further high flow advisories using the autodial system were issued for the Kakanui and Taieri rivers (first time), Silver Stream and Pomahaka rivers (again), and the Twitter system was used to notify people of high river flows in the Clutha and Dunedin areas (again) and the North Otago and Taieri areas (first time). A telephone call was made to the Central

Otago District Council EMO at 7:40pm to discuss possible high river levels in Central Otago, particularly in the Manuherikia Valley. The Otago Group Controller and ORC Executive Management Team continued to be updated on the situation.

At 8:27pm, staff became aware that the autodial system was not working correctly – i.e. that the autodial campaigns were running very slowly and were not getting through the ring lists in a timely manner. The FM immediately updated all the Twitter text alert feeds. Attempts were made to remedy the autodial system during the evening but it continued to run slowly. The FM also arranged for ring lists to be rung manually, and this occurred between 8:52pm and 10:50pm.

The last MetService Warning for this event was at 9pm on 3 June, predicting another 30 to 40mm of rain in the Dunedin and Clutha area, concluding at 2am on 4 June. The actual total for this period was approximately 20mm. Rainfall intensities did reduce after 2am, with light rain continuing on until 6am. The FM and staff continued to monitor the situation overnight, including liaising with operations staff on the Taieri Plain who monitored pump stations and conditions at the Gordon Road Spillway on the Silver Stream.

4 June 2015

The MetService Severe Weather Warning for the Dunedin and Clutha area was lifted at 7am on 4 June. The Taieri and Clutha rivers were still high, and the FM arranged for the three Taieri at Outram, and first three Clutha at Balclutha ring lists to be rung manually, starting at 7:30am, as the autodial system was still not working reliably. The autodial system was switched off at 9:00am, and the 4th and 5th Clutha at Balclutha ring lists were rung manually at 9:30am. Further telephone calls to the Clutha District Council EMO regarding flooding issues on the lower Clutha were made throughout the day.

The reason for the autodial fault was apparently a bug in the system software that the supplier is working to resolve. It is noted that the provision of advisories by way of the autodial system was envisaged to be a temporary service and would cease once the Twitter alert service had been proven to be reliable[4].

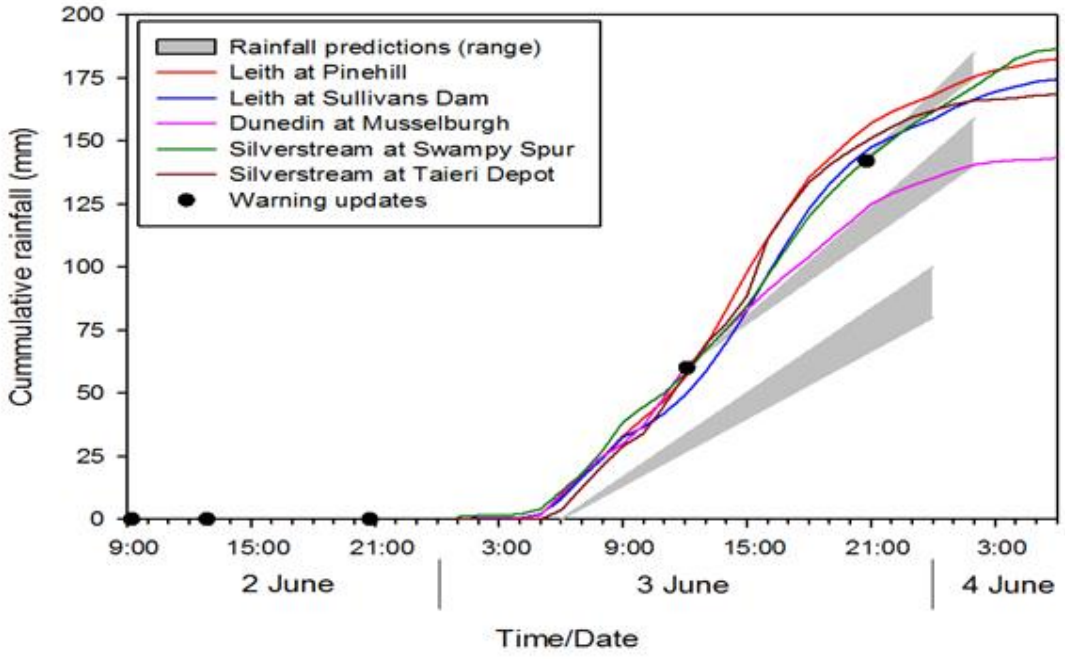

Figure 2. Observed rainfall accumulations at rain gauge sites around Dunedin from 9am on 2 June until 6am on 4 June (coloured lines). Predicted rainfall accumulations provided by MetService

[4] *Use of the Twitter Alert Service for River and Lake Level Information in Otago*, Report No.2012/1147, Prepared for Otago Regional Council Engineering and Hazards Committee, 22 November 2012

Warnings are shown for comparison (grey bands), including the effect of the updated Warnings as the event progressed.

Water Info statistics and Social Media

The average number of visits and page views of the Water Info website per day is 500 and 3,000 respectively.[5] On 3 June 2015, there were over 10,500 visits to the site, and 123,500 page views. On the following day, visits and page views were 5,000 and 50,000 respectively. Visitors to the website during this period were predominantly from Dunedin (44%), followed by Christchurch (22%) and Auckland (20%). The flood advisories issued by ORC were collectively viewed by almost 12,000 people on Facebook.

The automated Flowphone system normally averages just over 100 calls per week. On 3 June alone, there were almost 600 calls to the system. The number of calls peaked at 100 per hour between 8pm and 10pm on 3 June.

4. Rainfall

Total rainfall

The highest rainfall totals during this event were observed in close proximity to the Dunedin City urban area (Figure 3). The event was widespread however, with rainfall also affecting the North Otago, Clutha and Central Otago areas, although observed totals were less than in Dunedin.

The rainfall totals for this event were reasonably uniform at Musselburgh, the surrounding hills, and the East Taieri Plain (Figure 4 and Table 1). This pattern was not evident in other recent heavy rainfall events in April 2006, May 2010 and June 2013, where the heaviest rainfalls occurred in the hilly areas around the City, and much lighter falls occurred on the lower-lying land. To the west and southwest of Dunedin City, totals were slightly lower in the June 2015 event, but also reasonably consistent (e.g. Deep Stream, Dunedin Airport and Table Hill).

Peak 1-hour and 3-hour rainfall intensities were heavier in the upper Water of Leith than at Musselburgh (Table 2 and Figure 5). The heaviest band of rain crossed the Musselburgh gauge between 10am and midday on 3 June, before pushing up into the hill catchments further west between 1pm and 5pm (Figure 5).

[5] A 'visit' is when a user visits the website and views one or many pages. A 'page view' is when a user looks at any page on the website. For example, if a user goes to the site (initially the home page) and then looks at the data for five flow sites that will be six 'page views'.

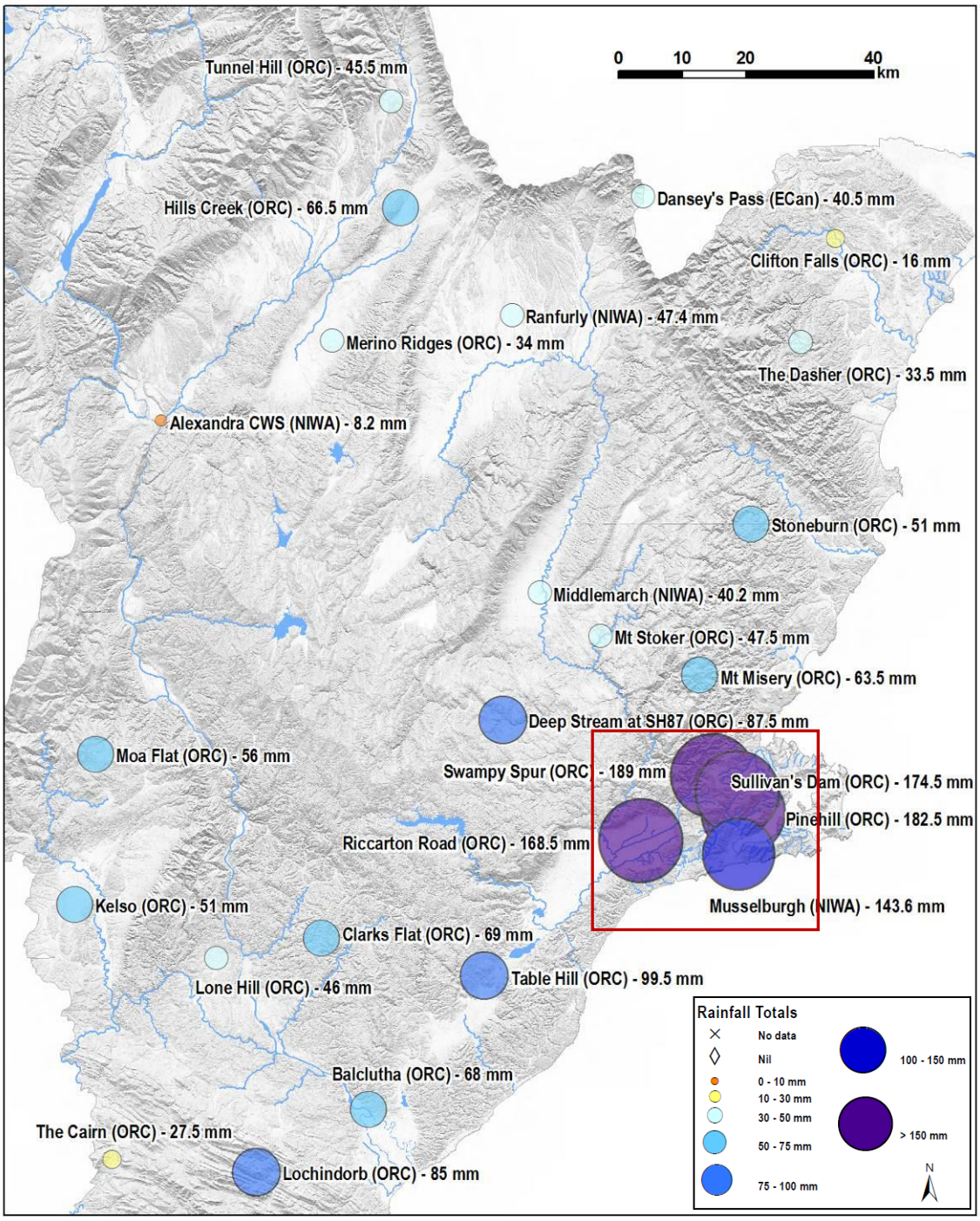

Figure 3. Rainfall totals observed at rain gauges in coastal and central Otago, midnight on 3 June to 6am on 4 June 2015 (30 hours). The agency responsible for each gauge is also listed. The area within the red box is shown in Figure 4. The Dunedin Airport site is not shown as this site only provides 9am (daily) readings.

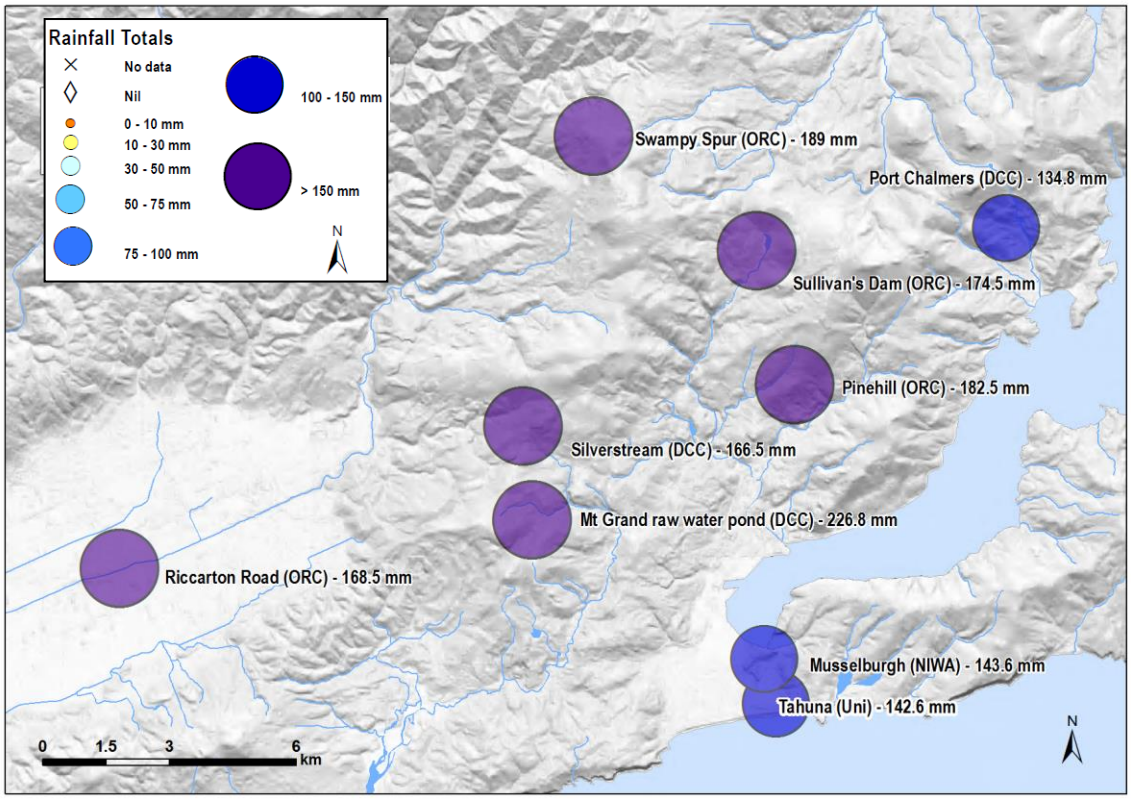

Figure 4. Detailed map showing rainfall totals observed at gauges in and around the Dunedin City urban area, midnight on 3 June to 6am on 4 June 2015 (30 hours). The agency responsible for each gauge is also listed.

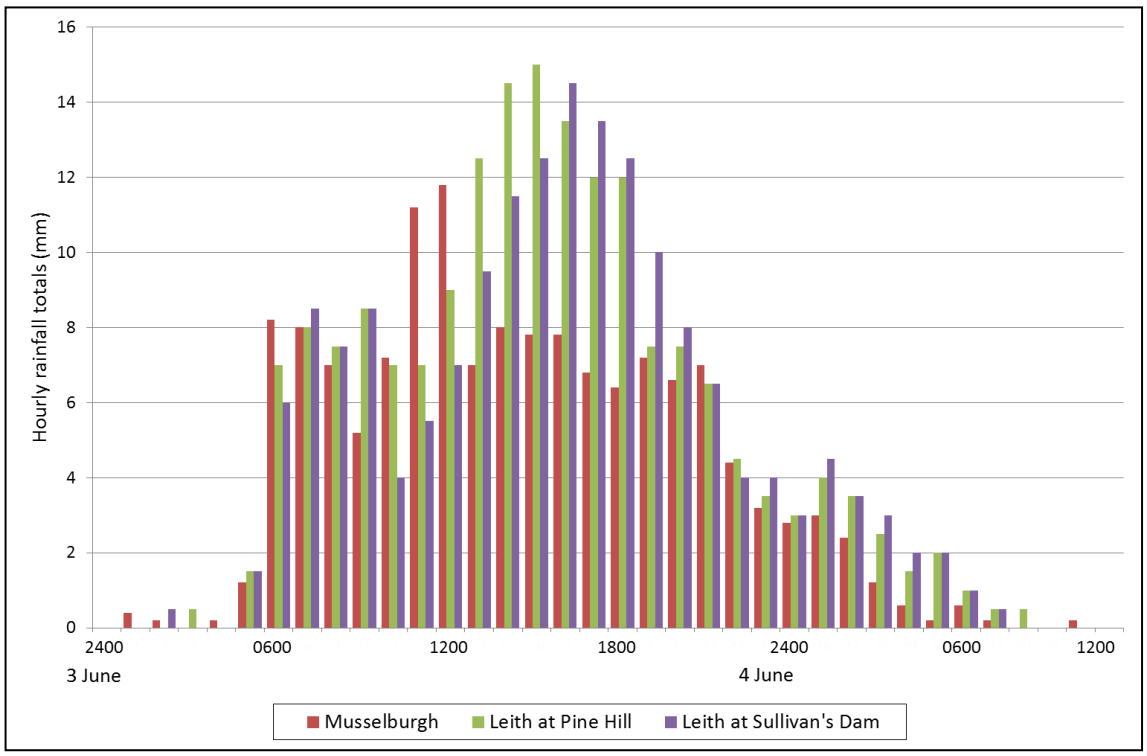

Figure 5. Hourly rainfall totals at the Musselburgh, Pine Hill and Sullivan's Dam rain gauges, Midnight on 2 June 2015 until 12pm on 4 June 2015

Table 1. 1-day rainfall totals and rankings for the 3 June 2015 event

Location (catchment)	Year daily records began	1-day rainfall (mm)	Ranking	Comments
Sullivan's Dam (Water of Leith)	1967	172	3rd equal	Highest was 217.5mm in April 2006
Pine Hill (Water of Leith)	1979	180	Highest	2nd highest was 156.5mm in April 2006
Musselburgh (South Dunedin)	1918	142	2nd highest	Highest was 229mm in April 1923[6]
Swampy Spur (Silver Stream)	2007	181.5	Highest	2nd highest was 164mm in May 2010
Riccarton Road (Silver Stream)	1988	168	Highest	2nd highest was 164.5mm in April 2006
Deep Stream (Taieri)	1993	87.5	Highest	2nd highest was 85.5mm in April 2006
Dunedin Airport (Taieri)[7]	1962	86.8	2nd highest	Highest was 123mm in April 2006
Table Hill (Tokomairiro)	2011	98	Highest	2nd highest was 86mm in February 2012
Moa Flat (Pomahaka)	1988	56	10th highest	Highest was 86.5mm in February 2012

Table 2. Peak 1-hour and 3-hour rainfall intensities for the 3 June 2015 event. In some cases, the length of record for which these values can be calculated is shorter than for the daily readings shown in Table 1.

Location (catchment)	Year instantaneous records began	1-hour rainfall (mm)	Ranking	3-hour rainfall (mm)	Ranking
Sullivan's Dam (Water of Leith)	2000	15.0	4th equal	41.5	2nd highest
Pine Hill (Water of Leith)	1979	16.5	5th highest	33.0	5th equal
Musselburgh (South Dunedin)	1997	11.8	6th highest	30.2	Highest
Swampy Spur (Silver Stream)	2007	12.5	6th equal	35.5	2nd highest
Riccarton Road (Silver Stream)	1988	14.5	6th equal	25.5	6th highest
Deep Stream (Taieri)	1993	13.0	18th highest	25.5	5th highest
Table Hill (Tokomairiro)	2011	9.0	6th equal	24.5	3rd highest

[6] During the March 1929 event (the largest flood event on record in the Leith catchment – see section 5), 104.1mm was recorded over a 24-hour period at Musselburgh. This is the 5th highest total on record.
[7] 9am daily reading only.

Rainfall probability

To understand the probability of an event of this magnitude occurring, an analysis of 24-hour rainfall totals was undertaken, and the results are shown in Table 3. Two methods were used to estimate the likelihood of the 3 June event, an event-based analysis using actual data observed at the site, and an estimate for that location derived from the HIRDS program.[8]

Table 3. Estimated return periods for rainfall sites in and around Dunedin City

Site	Length of record (years)	Data type[9]	Maximum 24-hour rainfall, June 2015	Estimated Return Period (years)	
				Observed data	Using HIRDS
Sullivan's Dam (Water of Leith)	48	Daily Manual / Instantaneous	172	23	30-40
Pine Hill (Water of Leith)	36	Instantaneous	180	50	100
Musselburgh (South Dunedin)	97	Daily Manual / Instantaneous	142	63	>100
Swampy Spur (Silver Stream)	8	Instantaneous	181.5	Insufficient data	40
Riccarton Road (Silver Stream)	27	Instantaneous	168	20	>100
Deep Stream (Taieri)	22	Instantaneous	87.5	Insufficient data	30-40
Dunedin Airport (Taieri)	53	Daily Manual	86.8	18	10

The Musselburgh rain gauge has the longest continuous rainfall record within the Dunedin area (commencing in 1918), and therefore provides the most accurate estimate of likelihood for an event of this magnitude. The analysis using observed data shows that, at the Musselburgh site, the return period of the June 2015 event is approximately 63 years, while the return period derived from the HIRDS program is greater than 100 years. The June 2015 total is considerably less than the highest recorded 24-hour total (Table 1) and an event of this magnitude or greater has now occurred twice in less than 100 years. A return period of less than 100 years is therefore more credible than the estimate derived using the HIRDS program.

The Pine Hill rain gauge has a shorter record than Musselburgh, and the June 2015 event was the highest on record (Table 1). There have now been two 24-hour events of 156.5mm or more at this site over a 36 year period, and the estimated return period for the June event (using the actual data) of 50 years is therefore realistic. The estimated return period at the Sullivan's Dam rain gauge site is 23 years, which also appears reasonable, given that this is the 4th highest event over a 48 year record.

Experience shows that estimated return periods can change significantly when another large event is added to the record. The same event-based analysis (using actual data observed at the site) was repeated for the Musselburgh and Pine Hill sites, but excluding the June 2015 event from the record (i.e. as if the analysis had been undertaken just prior to this event). This analysis showed that the estimated return period for an event of the same magnitude as 3 June 2015 would have been 100 years or more at both the Musselburgh and Pine Hill sites.

[8] HIRDS - High Intensity Rainfall Design System. A program supplied by NIWA that estimates rainfall frequency at any point in New Zealand. It can be used to assess the rarity of observed storm events.

[9] It is noted that at the Musselburgh and Sullivan's Dam sites, the data used for this analysis comprises a combination of daily manual (9am) readings and 'instantaneous' (15 minute readings). The instantaneous record at these 2 sites commenced in 1997 and 2000 respectively.

5. River Flows

The most significant flows were observed in Dunedin City (Water of Leith, Lindsay Creek and Kaikorai Stream), and also in the Deep Stream and Tokomairiro West Branch catchments (Table 4). Peak flows in Lindsay Creek and the Water of Leith were the 2nd and 3rd highest respectively since continuous records commenced in 1979 and 1963.

Table 4. Maximum flows recorded at key sites in the rivers affected by flood flows during 3 and 4 June 2015. The rank is provided for peak flows which are within the top 10 observed since records began.

Site	Records began	Maximum Flow (m^3/s) or cumecs)	Date/Time of peak	Rank
Kakanui at Clifton Falls Bridge	Apr 1981	139	3/6 18:45	
Kauru at Ewings	Nov 1991	25	3/6 17:45	
Shag at The Grange	Oct 1989	60	3/6 40:45	
Waikouaiti at Confluence	Feb 2010	64	4/6 01:50	
Leith at Leith Street	Feb 1963	100	3/6 17:50	3rd
Lindsay Creek at North Road Bridge	Oct 1979	29.2	3/6 18:25	2nd
Silver Stream at Gordon Road	Jan 1970	129	3/6 19:50	6th
Taieri at Outram	Apr 1968	745	4/6 07:30	
Deep Stream at SH87	Apr 1992	359	3/6 21:10	2nd
Nenthorn at Mt Stoker Road	Nov 1982	39	4/6 04:05	
Taieri at Sutton	Aug 1960	141	4/6 12:00	
Tokomairiro at West Branch Bridge	Dec 1981	72	3/6/20:50	5th
Pomahaka at Glenken	Jun 1992	389	3/6 20:45	6th
Pomahaka at Burkes Ford	Aug 1961	635	4/6 10:05	8th
Clutha at Balclutha	Jul 1954	1,621	4/6 09:15	

Anecdotal evidence exists of other large floods occurring in the 20th century, and the 1929 flood in particular is considered the largest event in the Water of Leith since European settlement, with an estimated flood peak of between 200 and 250 cumecs. The 10 highest estimated flood peaks in the Water of Leith since 1923 are shown in Figure 6, and this highlights that flood events experienced since 1963 have been considerably smaller than the two events in the 1920's.

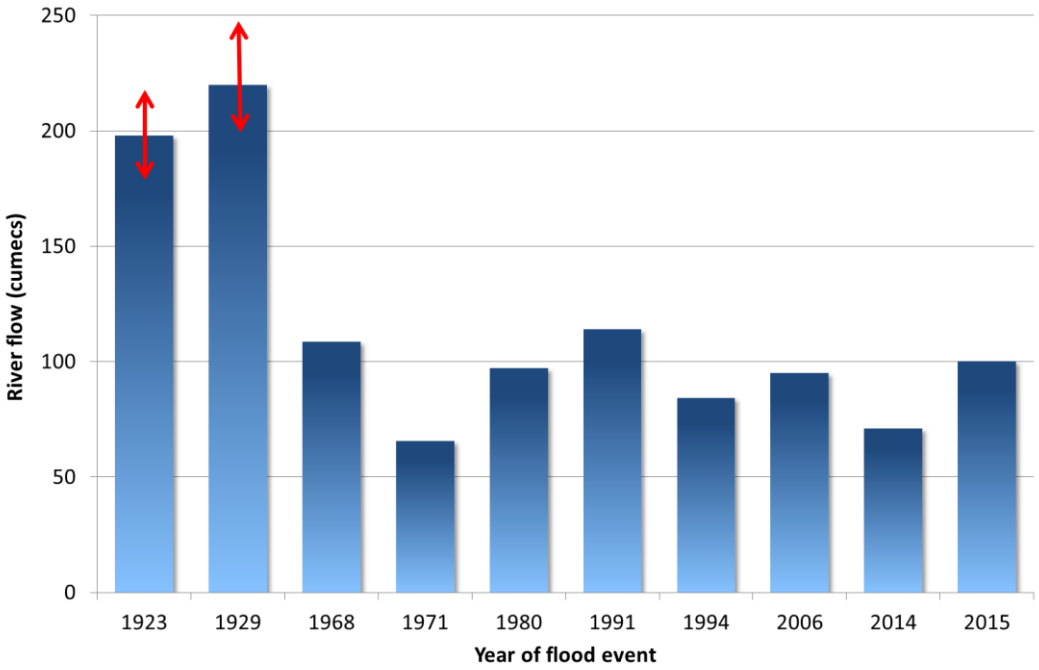

Figure 6. Estimated flood peaks since 1923 in the Water of Leith - 10 highest flows. The accuracy of the 1923 and 1929 flood peaks is less reliable than those observed after continuous records commenced in 1963.

Table 5 and Table 6 show peak flows over a certain threshold in the Water of Leith and the Silver Stream since records began.[10] These tables highlight the number of high flow events that have occurred in the last 10-year period, compared to previous decades.

Table 5. Peak flows (m^3/s or cumecs) in the Water of Leith >60 cumecs, for 10-year periods commencing in 1965

1965 – 1975 (10 years)		1976 – 1985		1986 - 1995		1996 - 2005		2006 – June 2015	
109	Mar 68	97	Jun 80	114	Feb 91			95	Apr 06
65	Jun 71			84	Mar 94			64	Jul 07
								71	Apr 14
								100	Jun 15

Table 6. Peak flows (m^3/s or cumecs) in the Silver Stream >100 cumecs, for 10-year periods commencing in 1970

1970 – 1975 (6 years)		1976 – 1985		1986 - 1995		1996 - 2005		2006 – June 2015	
123	Nov 71	109	Aug 78	101	Mar 86			264	Apr 06
107	Jun 72	194	Jun 80	143	Mar 94			159	Jul 07
		108	Oct 82	106	Jul 94			116	May 10
		100	May 83					133	May 10
		110	Mar 84					107	Aug 12
								128.0	Apr 14
								127.7	Jun 15

[10] 60 and 100 cumecs respectively. These flows generally do not have an effect beyond the main river channel, but the river can rise quickly from here to a flow where it does start to overtop the river bank.

Flow probabilities

An updated assessment of the probability of the peak flows observed on 3 June occurring has been undertaken, using the full length of continuous record. The results of this assessment are shown in Table 7. The return period for the peak flow in the Water of Leith is approximately 30 years, although this assessment does not include the historical flood events in the 1920's which occurred prior to the commencement of continuous observations. The inclusion of these events would have the effect of reducing the estimated return period.

The estimated return period of the peak flow in the Silver Stream is 6.5 years. Observations from this event show that the Silver Stream began to overtop at the Gordon Road Spillway during this event, as discussed in Section 10.

The return period analysis for the Taieri River at Outram and for sites in North Otago and the Clutha District shows that flow peaks of the magnitude observed on 3 June can be expected to occur reasonably frequently.

Table 7. Estimated return periods for key flow sites in coastal Otago

Site	Length of record (years)	Maximum Flow m^3/s (cumecs)	Estimated Return Period
Kakanui at Clifton Falls	33	139	2.3
Leith at Leith Street	52	100	30[11]
Lindsay Creek at North Road Bridge	36	29	22
Silver Stream at Gordon Road	45	129	6.5
Taieri at Outram	47	745	4.3
Tokomairiro at West Branch Bridge	34	72	10
Pomahaka at Glenken	23	389	6
Clutha at Balclutha	61	1621	2.5

6. Sea-level[12]

Changes naturally occur in sea level due to normal astronomical tides. Predicted tidal elevations are based on the standard barometric pressure at sea level of 1012 hPa; however, actual levels are influenced by changes in atmospheric pressure and to some extent by wind, with an additional wave setup at the coast when a sea-swell is running (not measured by the gauge). In general, for every decrease of 1 hPa from the average pressure, storm-tide levels increase by approximately 1 cm.

At 9am on 3 June, barometric pressure at the Musselburgh weather station was reported as 992.6 hPa. This is lower than standard atmospheric pressure at sea level (1012 hPa), although not the lowest barometric pressure observed at Musselburgh in the preceding 12 months (Figure 7).

[11] This assessment does not include estimates of historical flood events in the 1920's.
[12] The preparation of this section was assisted by Dr. Rob Bell of NIWA.

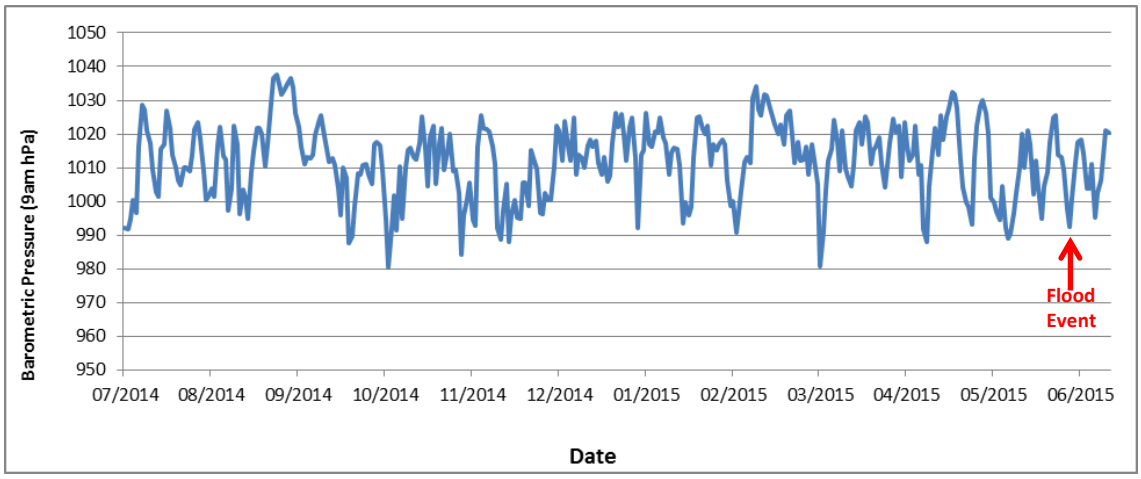

Figure 7: Barometric pressure record from Musselburgh Climate Station, South Dunedin

Sea level was on a natural rise due to falling barometric pressure leading up to the rain event, and on 3 June 2015 reached a peak around the 3.30 pm afternoon high tide (which was a smaller-than-average spring tide). This was not the highest sea level in the month leading up to the rain event, as higher spring tides (by about 0.2 m) occurred in 15-19 May (Figure 8). The highest sea level observed at the Green Island sea level recorder (see Figure 18 for location) since records began in 2003 was 1.77m, in May 2013.

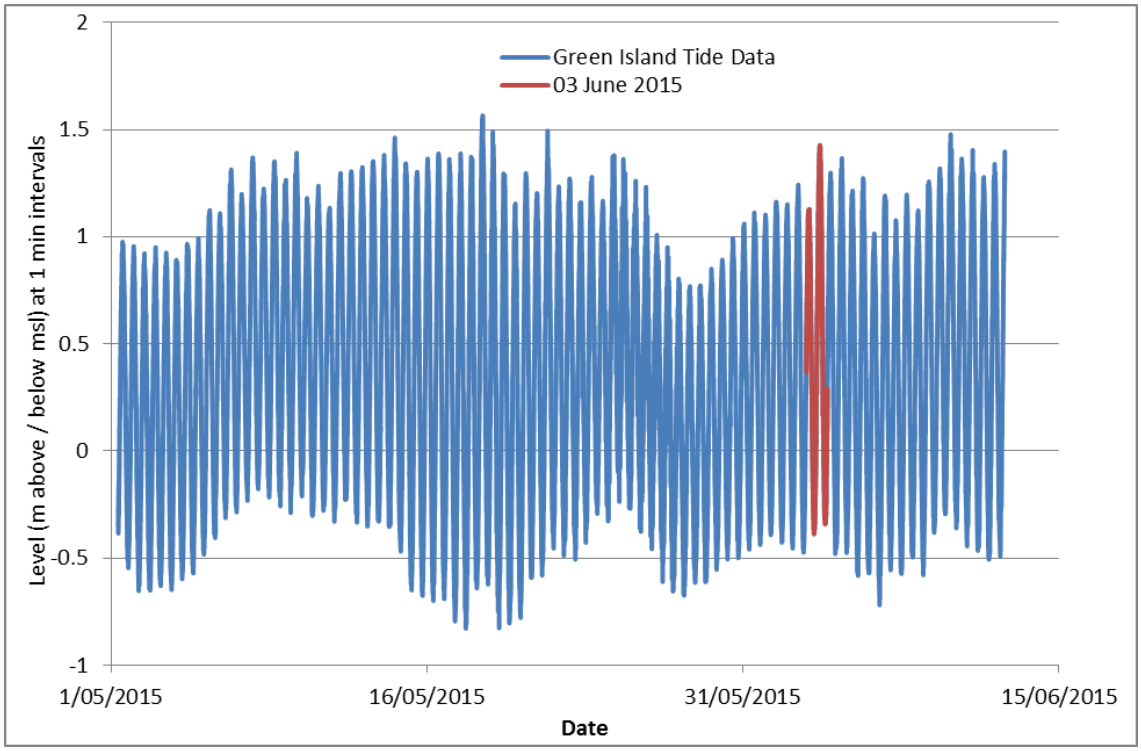

Figure 8: Green Island Tide record from 1 May 2015 to 12 June 2015

Figure 9 shows that the actual storm-tide level (black line) at the Green Island gauge on 3 June was up to 0.25m higher than the predicted high tide due mainly to the setup (blue line) from the low pressure system that crossed the region (down to 989 hPa).

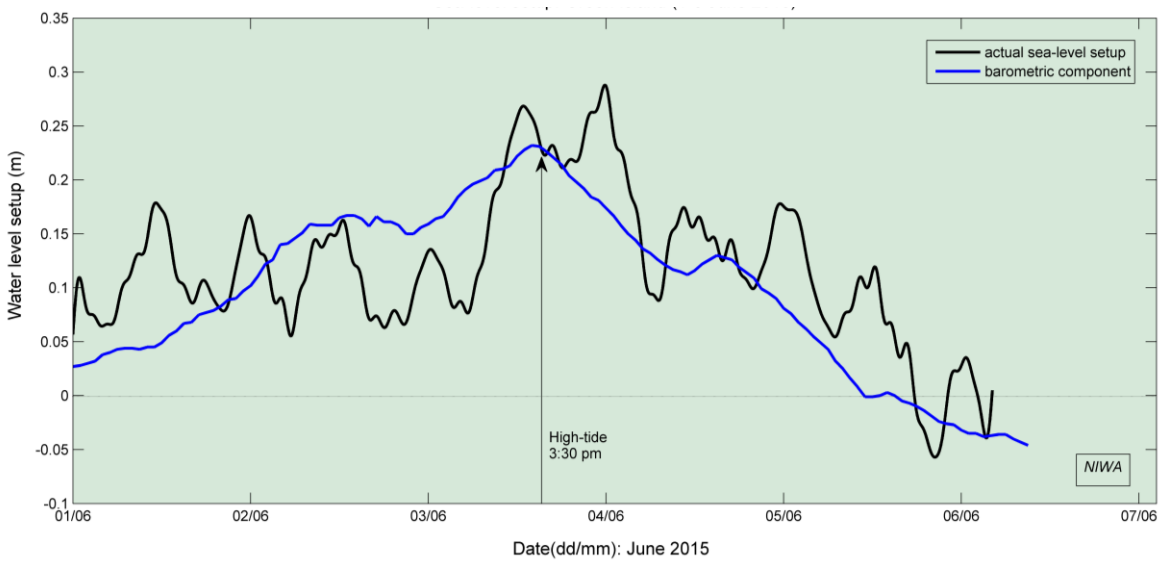

Figure 9. Sea-level setup at Green Island (1-6 June 2015)

7. Flooding effects – South Dunedin

The South Dunedin area was affected by widespread and prolonged flooding as a result of the rainfall which fell on 3 June. ORC staff undertook a reconnaissance trip on the morning of 4 June and observed water was still ponding across much of this area, as illustrated in Figure 10 to Figure 12. This inspection indicated that the area bounded by King Edward Street, and Hillside, Prince Albert, Victoria and Forbury roads had been most affected, with little sign of inundation further east.[13] It is noted that the lowest part of South Dunedin at Tainui is known to have been affected by floodwater previously, as shown in Figure 13. Considerable localised variability in water depths was observed on 4 June, depending on slightly undulating local topography (e.g. Figure 11).

ORC initiated a survey to identify maximum flood water levels across the most affected parts of South Dunedin, and also to confirm the negligible flood water depths observed outside this area. This work commenced late on 4 June, with further work undertaken on 5 and 9 June. Corroborating forms of evidence were sought in order to obtain a reliable indicator of water level at particular locations. This involved identifying multiple evidences within a given area and checking results for agreement.

Evidence typically consisted of flood debris in small areas on footpaths, or at road intersections. Flood debris was especially prevalent along King Edward Street, Prince Albert Road and Richardson Street with large deposits of material typically consisting of bark chips located along the road carriageway and footpath. Flood evidence was less prevalent along the northern and western side of the survey area (Hillside Road/Surrey Street). The survey equipment used is able to determine horizontal and vertical positions to an accuracy of 0.03m.[14]

Figure 10. Ponding of surface water on Loyalty Street, South Dunedin, 4 June 2015

[13] Despite the lowest-lying land in South Dunedin being in the suburb of Tainui, in the eastern part of South Dunedin.

[14] Smeaton, D. 2015. *Report on South Dunedin Flood Survey – June 2015*. Report to Otago Regional Council.

Figure 11. Ponding of surface water on Dalgety Street, South Dunedin, 4 June 2015

Figure 12. Ponding of surface water on Bradshaw Street, South Dunedin, 4 June 2015

The locations of the 150 surveyed flood debris marks are shown in Figure 14, colour-coded to represent the depth of inundation at each location. It is noted that these are typically located on roads. Depths were calculated by determining the difference between the elevation of the debris mark and the underlying ground level at that location (extracted from LiDAR flown in September 2009). Figure 14 does not show any clear spatial pattern in terms of flood depths across South Dunedin, confirming the initial observation of ORC staff that localised variations in topography were probably the main driver of flood depth. The pale yellow areas mapped on Figure 14 have elevation less than 1m (relative to current mean sea level), and are usually associated with the deeper flood waters. It is noted that the area to the east of the map is also low-lying, but the absence of debris marks suggests it did not experience significant inundation.

The survey data does show a clear pattern in terms of water elevation relative to mean sea level, as shown in Figure 15. Water level was highest towards the northwest (Forbury Corner) and gradually slopes towards the south and east – i.e. the water level contours generally follow the topography of the gently south-east sloping plain which comprises the South Dunedin area.

As noted above, the exception to this is the lack of evidence of significant floodwater ponding in the lowest part of South Dunedin at Tainui. Further work is required to determine the reason for the apparent lack of significant floodwater ponding in this area.

Figure 13. Ponding of surface water at the southern end of Normanby Street, April 1923, and the same view during normal conditions today (Google StreetView). This location is shown on Figure 14.

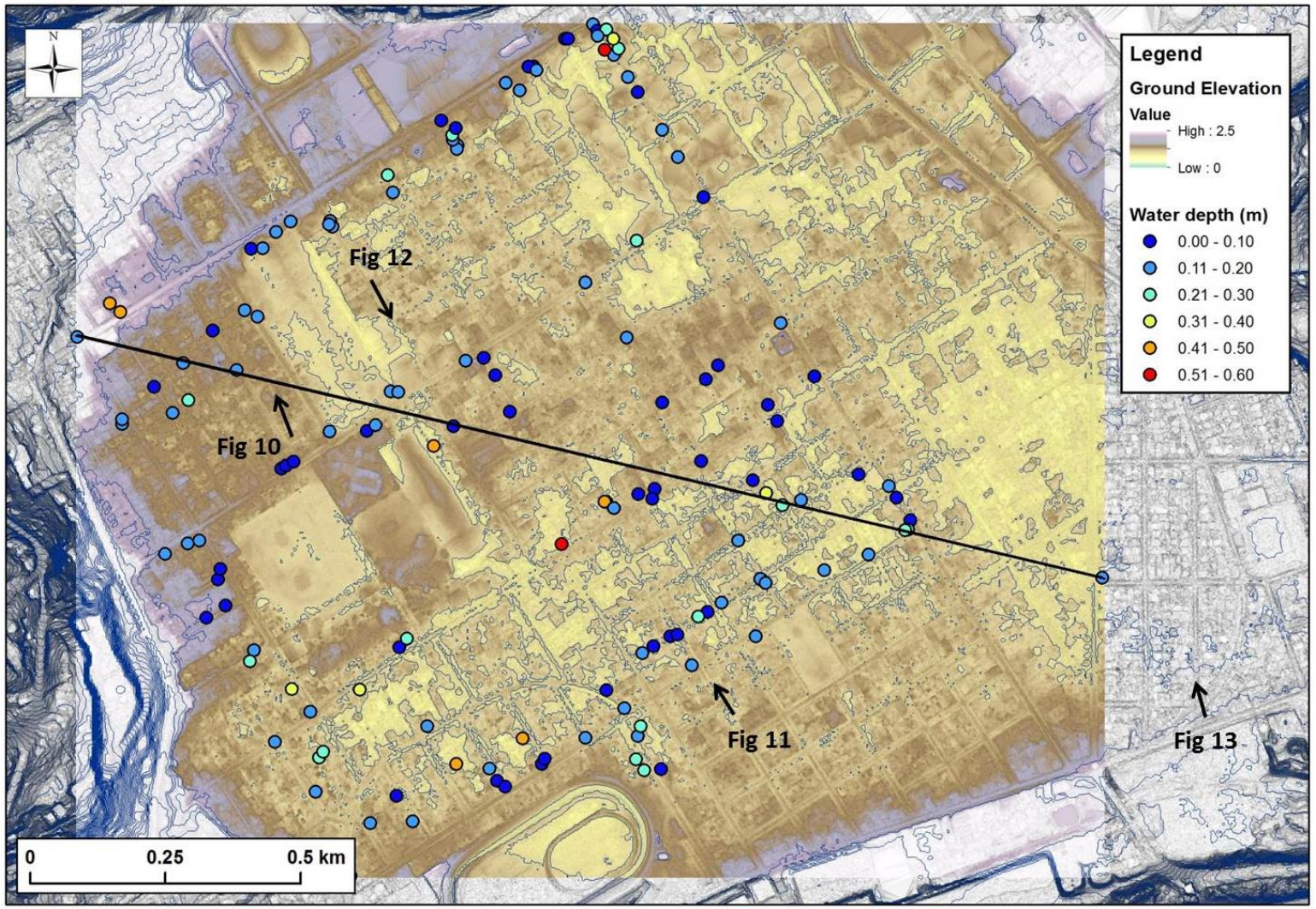

Figure 14. Map of South Dunedin with elevation colour scale showing topography between 0 and 2.5m above mean sea level. Contour interval is 1m. Profile line as shown in Figure 15 and Figure 16. Elevation is relative to mean sea level.

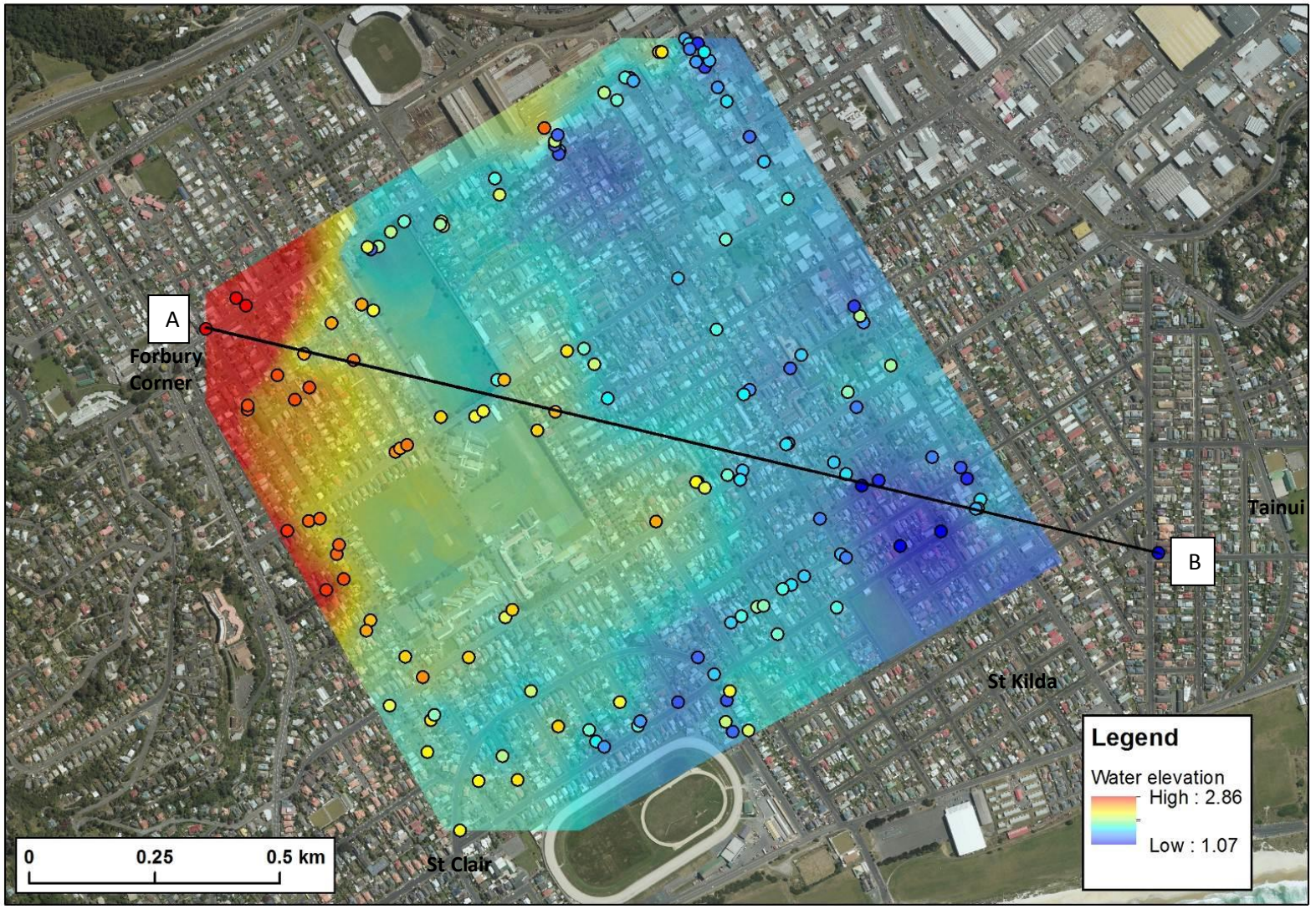

Figure 15. Surveyed flood water elevations (dots), and interpolated water surface elevation across South Dunedin. Profile Line A-B as shown in Figure 14 and Figure 16.

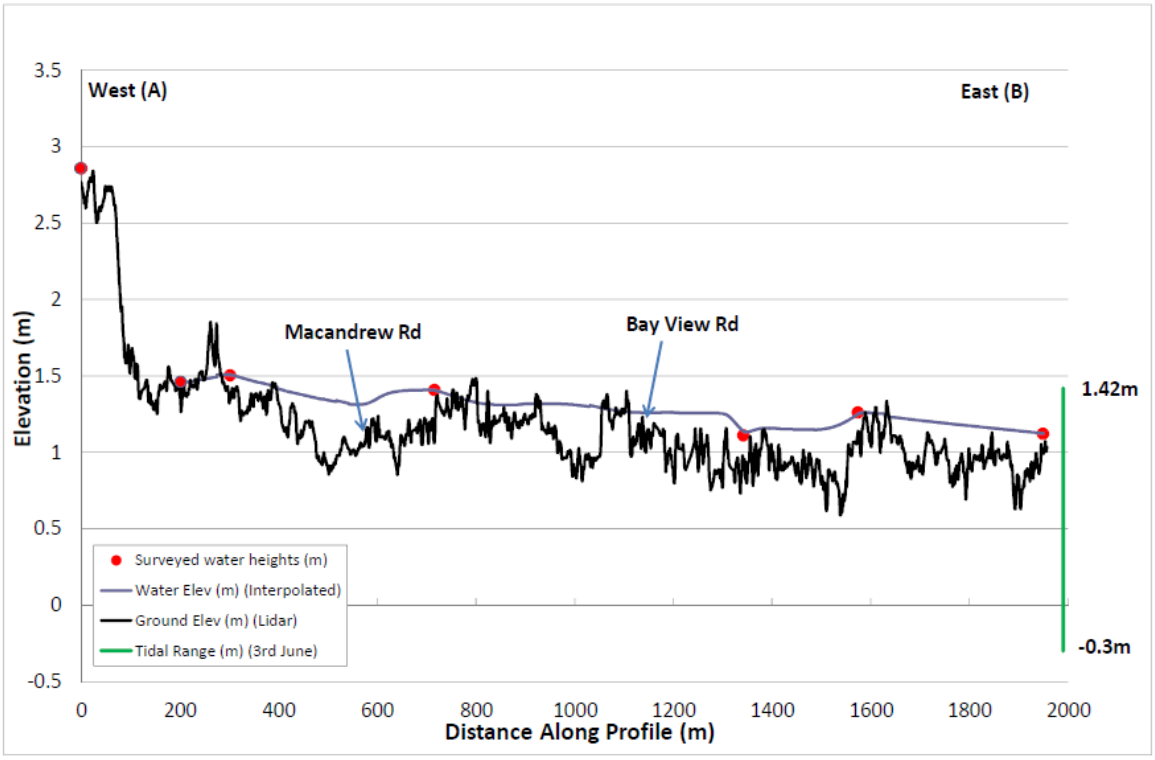

Figure 16. Elevation transect shown on Figure 15. The black line is ground elevation and the blue line is the interpolated maximum flood elevation from Figure 15. The red dots are actual observations of water level in close proximity to the transect line. Water surface has a gradual slope from west to east. The green line shows the range between the highest and lowest sea levels observed at the Green Island sea level recorder on 3 June. Elevations are relative to current mean sea level.

The water which ponded in South Dunedin was rain which fell on the flats themselves as well as stormwater runoff from the surrounding hill catchments. The major catchments and the natural topographic boundary of the South Dunedin catchment are shown in Figure 17. It is noted that the DCC stormwater network does not necessarily follow the natural catchment boundary – in particular, some of the stormwater from the northernmost sub-catchment may be diverted away from South Dunedin by DCC stormwater drains.

The approximate size of the natural South Dunedin catchment, as shown in Figure 17, is 14.8km^2. For comparison, the Lindsay Creek and Water of Leith catchments are 12.5km^2 and 42km^2 respectively.

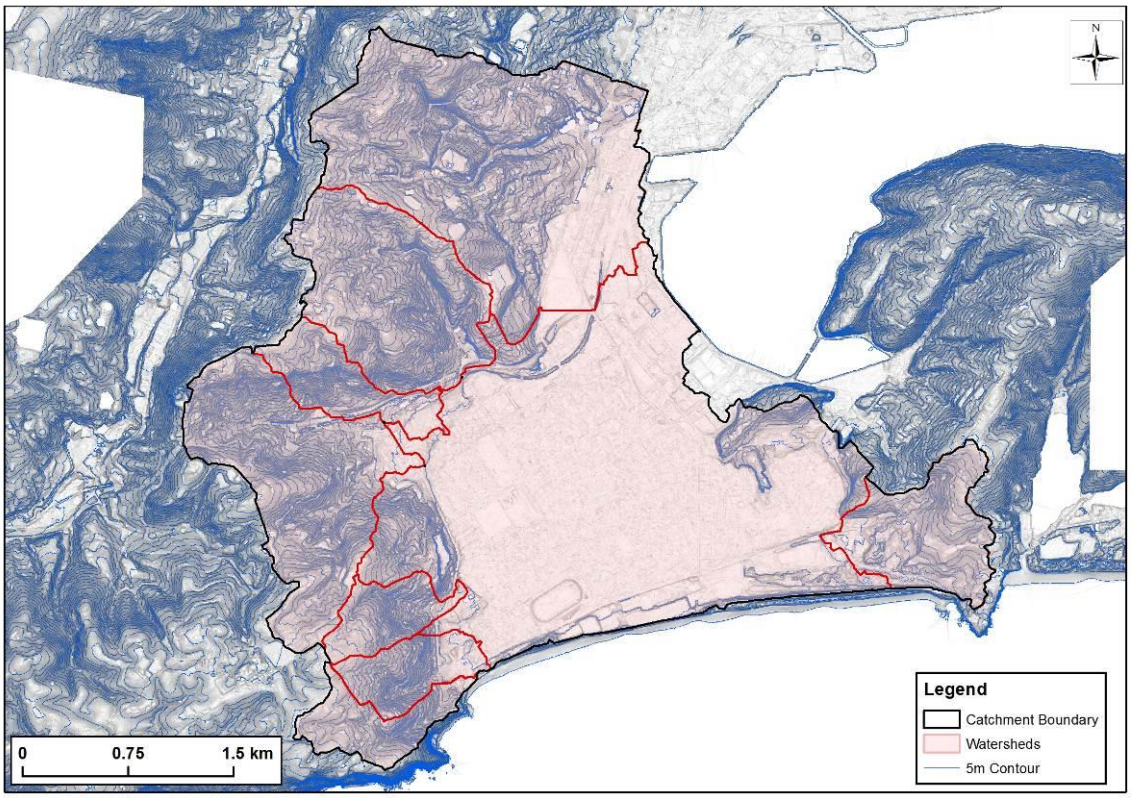

Figure 17. Contour map showing the natural boundary of the South Dunedin catchment (black line) and sub-catchments (red lines)

Groundwater level - observations

Background

Between 2009 and 2014, 4 groundwater monitoring bores were established by ORC across South Dunedin (Figure 18). These bores record water level readings in 15 minute increments. Water level from the 3 bores established in 2009 assisted with modelling investigations which confirmed anecdotal reports that the South Dunedin water table is closely linked to the surrounding sea level at both the ocean and the harbour margins.[15]

This section discusses groundwater level at each bore prior to 3 June, and its behaviour during the rain event. Pre-rain event groundwater levels (2 June at 11:45 pm) were compared to the entire monitoring record, however only water levels from 1 May 2015 are presented here (in Figure 19 to Figure 22). Rainfall signature can be seen in all 4 monitoring bores.

[15] Otago Regional Council (ORC). 2012. *The South Dunedin Coastal Aquifer & Effect of Sea Level Fluctuations*. ISBN 978 0 478 37648 7. October 2012.

Figure 18. Location of ORC monitoring bores, Musselburgh Pumping Station rain gauge and Green Island sea level recorder

In wells or piezometers that are tapping confined and leaky aquifers, the water levels are continuously changing as the atmospheric pressure changes. Water levels rise in response to low atmospheric pressure and fall during high pressure. This response can sometimes be seen in unconfined aquifers (such as below South Dunedin) but to a much less extent.

The monitoring bores in South Dunedin are shallow bores with the water table close to the surface. Fluctuations in groundwater levels at the Kennedy Street and to a lesser degree Tonga Park are from tidal influences as opposed to barometric influences. Changes in sea level at the nearby Green Island site preceding and during this event are described in Section 6.

Kennedy Street groundwater bore

The Kennedy Street bore is located closest to the coast, and groundwater levels display a cyclic pattern, suggesting that there is tidal influence on water levels at this location. As mentioned in section 6, the tide was at a natural cyclical peak due to a full moon and low barametric pressure. Therefore, groundwater levels at Kennedy Street were also at a cyclical peak. Due to the tidal influence, the groundwater levels prior to the flood have been taken from the average daily groundwater level as shown in blue in Figure 19. Average daily groundwater levels prior to the flood were above average level for this monitoring bore (Average daily groundwater level (gwl): 0.603 metres above sea level (masl); 2 June average daily gwl: 0.674 masl). It is likely that the rain events that occurred on 12 and 26 May 2015 also contributed to a higher groundwater level than average. Groundwater levels rose 0.648 m above the average daily groundwater level for 2 June during the rain event on 3 June 2015 to a maximum level of 1.322 masl, which is 0.088m *below* the surveyed ground level at this bore (1.41 masl).

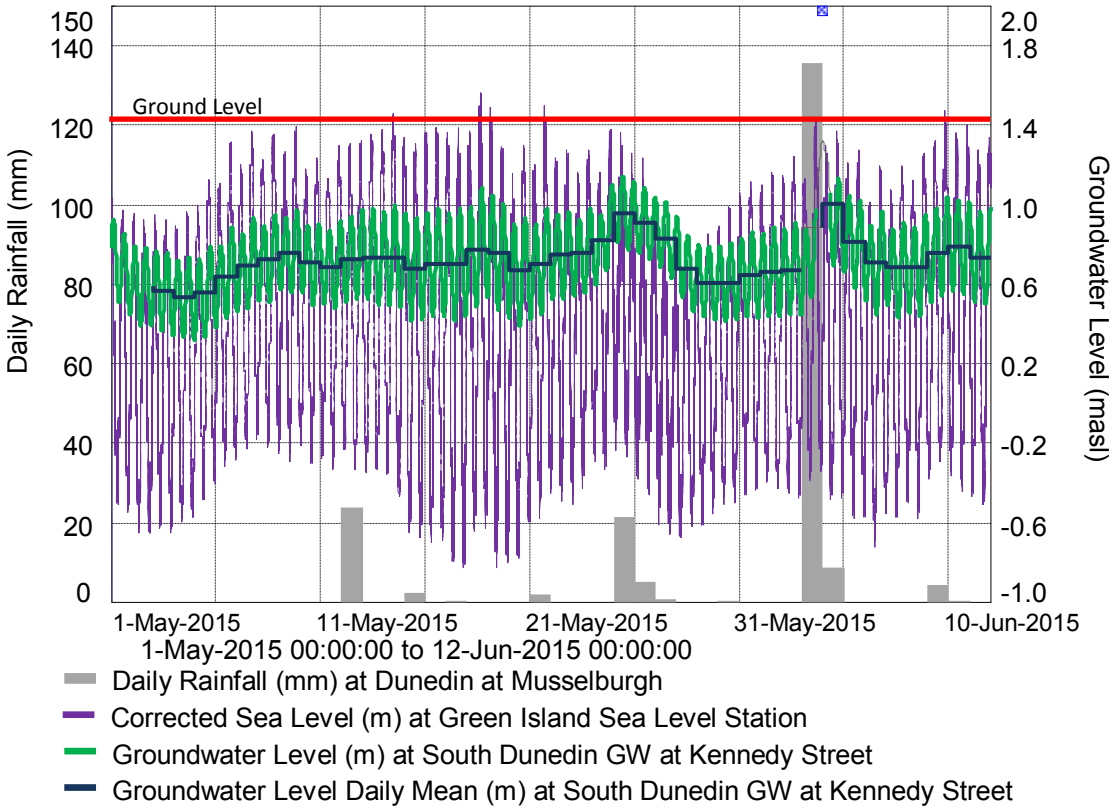

Figure 19: Kennedy Street continuous and daily average groundwater record, Green Island Tidal data and daily rainfall from 1 May - 12 June 2015. Ground level is 1.41 masl.

Tonga Park groundwater bore

Groundwater levels prior to the flood were at average level for this monitoring bore (average gwl: 0.557 metres above sea level (masl); 2 June at 11:45 pm: 0.598 masl), though an increasing trend in groundwater level is seen likely due to rain events that occurred on 12 and 26 May 2015. Groundwater levels rose 0.724m during the rain event on 3 June 2015 to a maximum level of 1.322 masl, which is 0.302m ***above*** the surveyed ground level at this bore (1.02 masl). It is noted that the interpolated water surface elevation (Figure 15) at Tonga Park is approximately 1.4 masl, similar to that recorded at the bore, and indicating that this site was likely measuring floodwater as a result of the 3 June event.

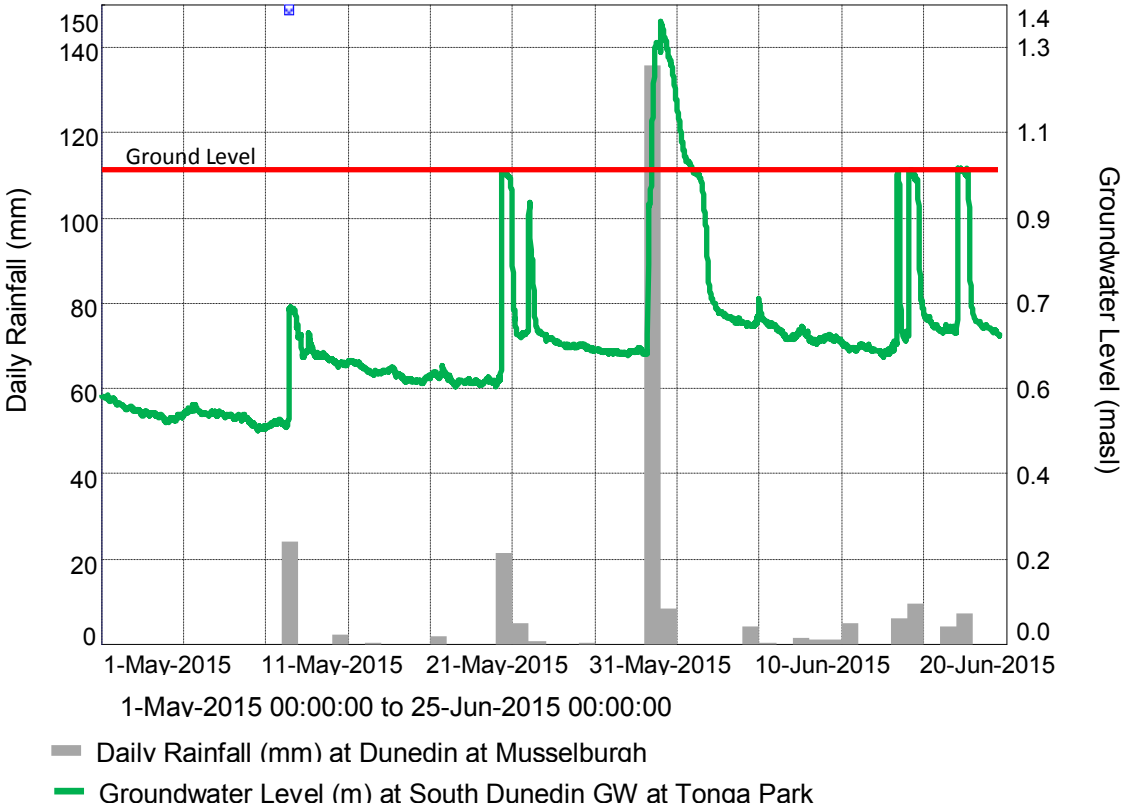

Figure 20: Tonga Park continuous groundwater record from 1 May - 12 June 2015. Ground level is 1.02 masl.

Culling Park groundwater bore

The groundwater monitoring bore at Culling Park has a shorter monitoring record than the other 3 sites, as this bore was installed in May 2014. Groundwater levels prior to the flood were above average level at this location (average gwl: 0.075 masl; 2 June at 11:45 pm: 0.198 masl). This may be as a result of the shorter groundwater record decreasing the average water level, never the less it is likely that the rain events that occurred on 12 and 26 May 2015 contributed to a slightly higher groundwater level than average. Groundwater levels rose 0.707m during the rain event on 3 June 2015 to a maximum level of 0.905 masl, which is 0.075m ***above*** the surveyed ground level at this bore (0.830 masl).

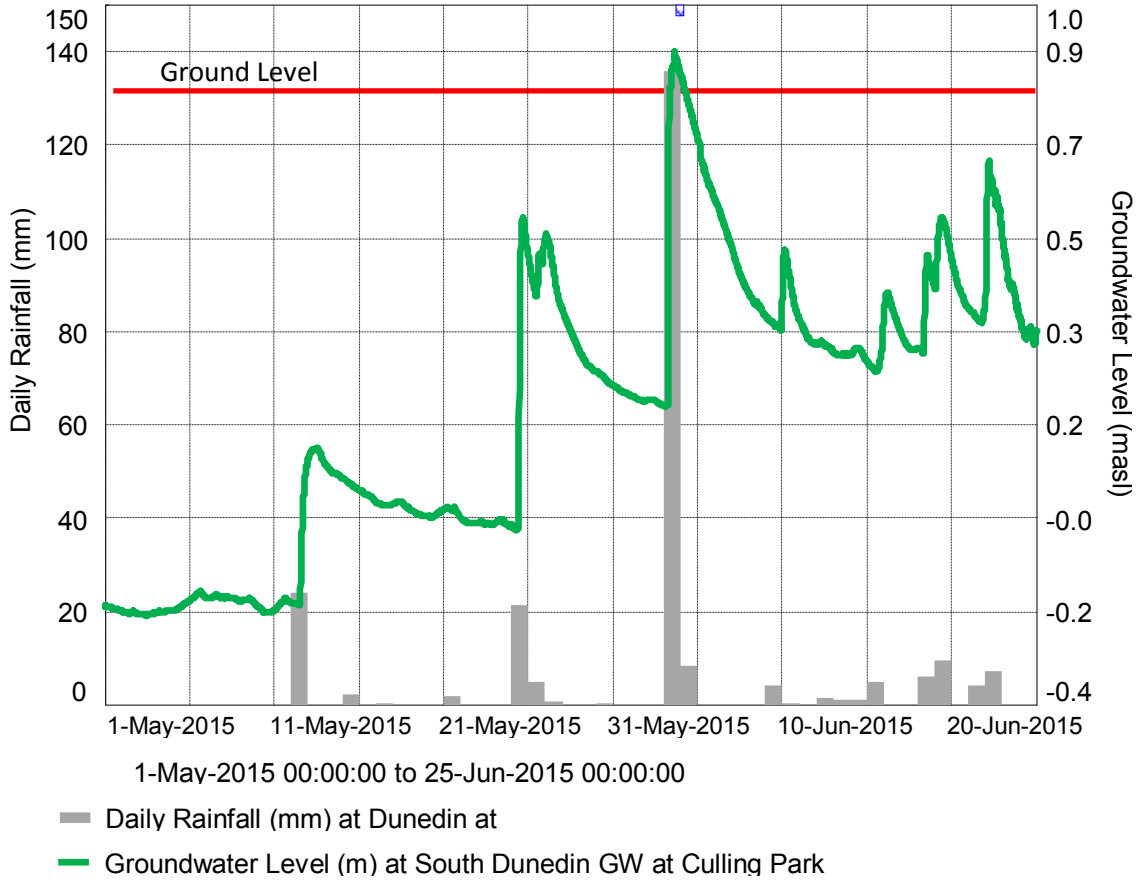

Figure 21: Culling Park continuous groundwater record from 1 May - 12 June 2015. Ground level is 0.830 masl.

Bathgate Park groundwater bore

Groundwater levels prior to the flood were slightly above average level for this monitoring bore (Average gwl: 0.689 masl; 2 June at 11:45 pm: 0.751 masl), most likely as a result of rain events that occurred on 12 and 26 May 2015. Groundwater levels rose 0.238 m during the rain event on 3 June 2015 to a maximum level of 0.988 masl, which is 0.532 m *below* the surveyed ground level at this bore (1.52 masl).

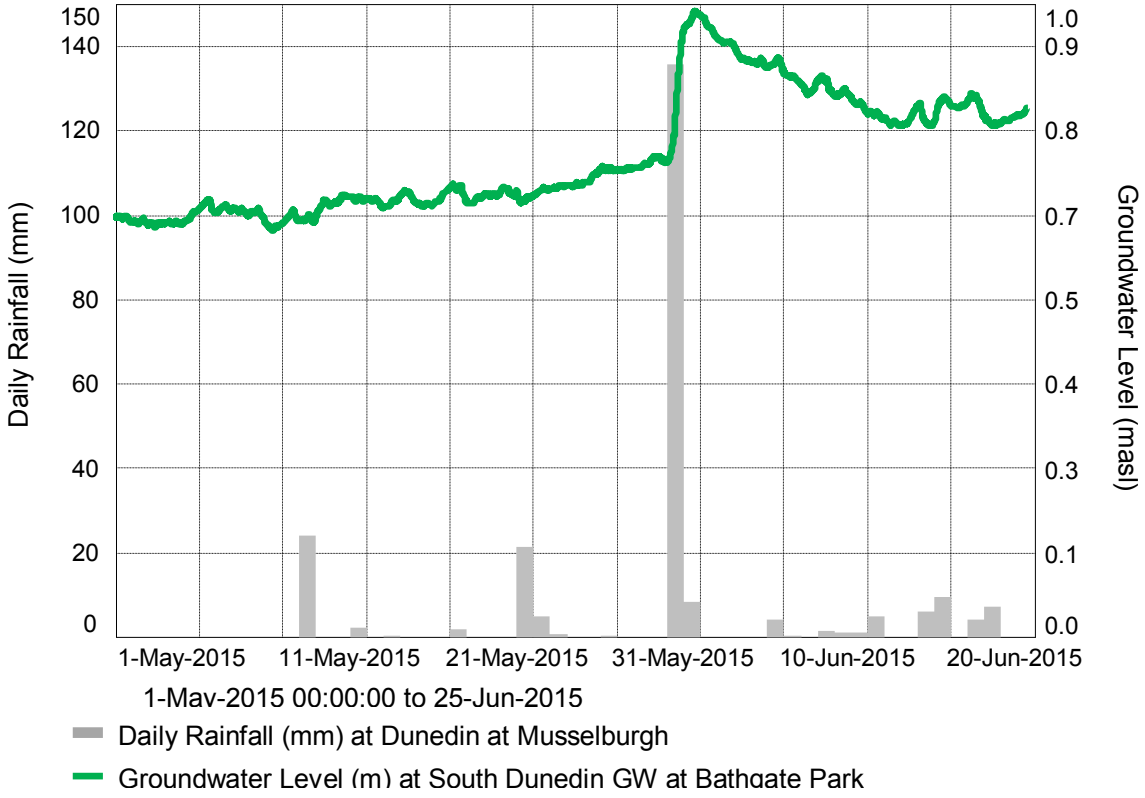

Figure 22: Bathgate Park continuous groundwater record from 1 May - 12 June 2015. Ground level is 1.52 masl.

Groundwater observations summary

Groundwater levels from the lowest lying bores (Tonga and Culling Park) rose above ground level as a result of the rain event that occurred on 3 June 2015 (Figure 23). Groundwater levels at Kennedy Street and Bathgate Park were 0.08m and 0.53m below ground level respectively. Groundwater may have contributed to the surface flooding in the low lying areas of South Dunedin. However, elevated groundwater levels close to ground level may have prevented surface water from infiltrating into the ground and dispersing into the aquifer below.

Figure 23: Location of groundwater above and below ground level in South Dunedin. Red – metres above ground level. Black – metres below ground level.

The large proportion of the South Dunedin area which is now covered by impermeable surfaces (buildings, concrete and asphalt) will also restrict the infiltration of surface water into the ground. The imperviousness of the South Dunedin area has been assessed at 60% overall, although is much higher in the commercial and industrial areas in the north of the area (Figure 24) where imperviousness can approach 100%.[16]

[16] Dunedin 3 Waters Strategy – South Dunedin Integrated Catchment Management Plan 2010-2060. URS and OPUS.

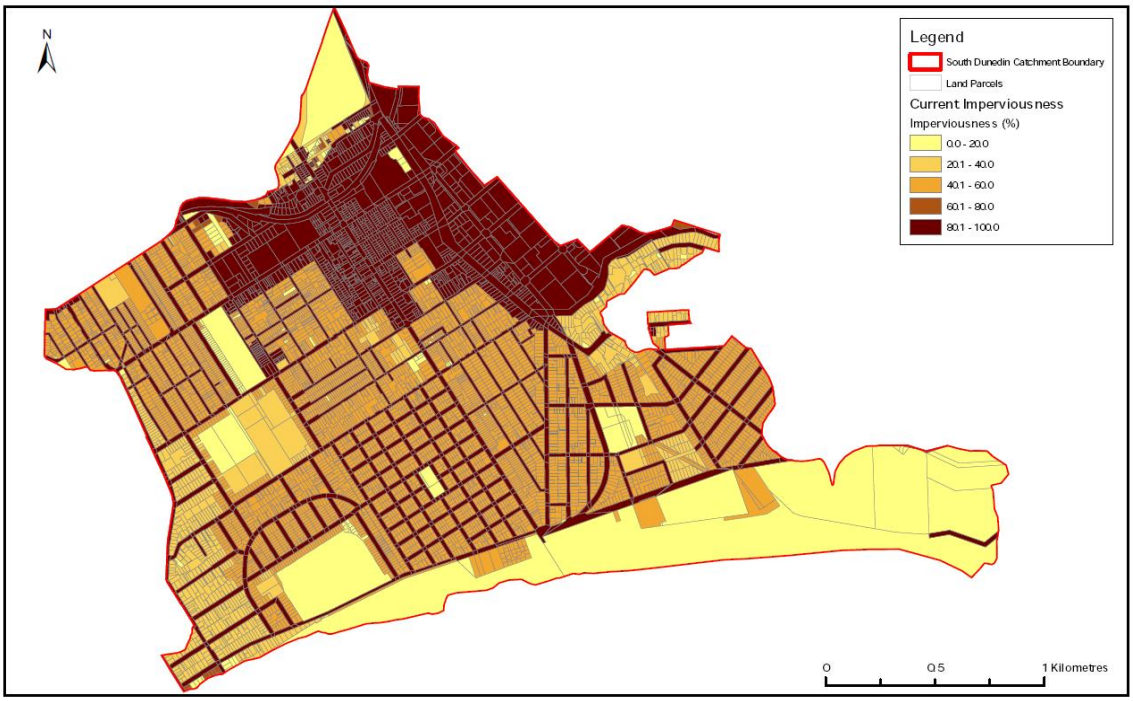

Figure 24. Map showing the current level of imperviousness, as defined by URS and Opus for the DCC

Indications of the future

Mean sea level at the port of Dunedin is inferred to have risen at an average rate of 1.3mm / year since 1900, which equates to a rise of about 15cm over that time.[17] Sea level has been continuously monitored at Green Island since 2002. Although this site has a short record for deriving long-term trends, the data is of high quality, with a frequent (1 minute) recording interval, and an instrument accuracy of ± 1mm. The average level of the sea at Green Island has increased at a reasonably consistent rate of 3.3mm/yr since 2002, which is higher than the longer term average determined for Dunedin.

The Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report projects that global sea-level rise by 2100 will likely be in the range of 0.26 to 0.98m (relative to the 1986-2005 period), with a caveat that a further rise could occur if ice-sheet collapse accelerates. The most recently available guidance to local government in New Zealand regarding sea-level rise over the next 100 years (in line with the timeframe in the NZ Coastal Policy Statement) is from a NIWA guidance document Pathways to Change (Britton et al., 2011).[18] This advises that a 1.0 m rise by 2115 relative to 1990 mean sea level should be considered for sea-level rise for New Zealand regions at this stage. The Proposed Regional Policy Statement for Otago has the policy (3.3.1): ensure Otago's people and communities are able to adapt to, or mitigate the effects of sea level rise, over no less than 100 years, using a sea level rise of at least 1 metre by 2115, relative to 1990 mean sea level and adding an additional 10mm per year beyond 2115.

Regardless of the uncertainty in the magnitude and rate of future sea level rise, groundwater levels in South Dunedin will continue to increase above their current levels during the next century. It is during (or immediately after, due to a lag effect) periods of elevated sea level that surface ponding in the lowest-lying parts of South Dunedin is more likely to occur, particularly if rainfall occurs at the same time. The initial effects of sea-level rise will be to increase the frequency at which the

[17] Hannah, J. and Bell, R. 2012. *Regional sea level trends in New Zealand.* Journal of Geophysical Research, Vol 117, C01004.

[18] Britton, R.; Dahm, J.; Rouse, H.; Bell, R.; Blackett, P. (2011). Coastal adaptation to climate change: Pathways to change. Externally peer-reviewed report prepared as part of the Coastal adaptation to climate change, NIWA publication. 106 p.
http://www.niwa.co.nz/sites/default/files/pathways_to_change_nov2011.pdf

upper range of extreme sea levels is experienced. Surface ponding may therefore start to occur more often, and for longer periods.

The South Dunedin Coastal Aquifer is an urban aquifer that is not utilised as a groundwater resource. As a result, no aquifer parameter information has been collected about the aquifer (e.g. transmissivity, storativity, hydraulic conductivity etc.). No investigation bores to determine the aquifer geological profile at depth have been undertaken, apart from at the Tainui Waste Water Treatment Plant. The aquifer geological profile and parameters are required to estimate how much drawdown would occur from pumping.

Beca Ltd completed a report in 2014[19] identifying potential engineered solutions for protecting the Harbourside and South City from direct impacts of sea level rise. The option preferred by Beca Ltd involved lowering groundwater by placing deep wells (up to 70 m) along coastal (including harbour) fringes, following Victoria Road, Tahuna Road, Cavell Street, Portsmouth Drive and Strathallan Street. Groundwater level would be maintained at 30-50 m below ground level at each well with groundwater level maintained at current elevation between wells. At higher values of sea level rise this mitigation option would, according to Beca Ltd, be supplemented with installation of bunds to prevent inundation during high tide events and raising sections of some roads to maintain a viable traffic corridor at all times. Observations of surface ponding during the 3 June event show that a mitigation option like that would need to address the effects of water being displaced from roads onto private land (Figures 10, 11, 12 and 13).

The option preferred by Beca Ltd is designed for protecting the area from the direct impacts of sea level rise. It does not look at lowering groundwater levels in low lying areas of South Dunedin (although that was put forward as Option 3 in the report). Drawdown of groundwater levels close to the pumping wells at the coastal perimeter would occur from the pumping. The extent of the drawdown would depend on the hydraulic conductivity of the aquifer and the pumping rate of each bore. In the drawdown zone, it is possible there would be an unsaturated zone in the underlying aquifer that surface water (rain, overland stormwater etc) could infiltrate into. However, given the amount of rainfall that fell in the short period of time on 3 June and overland storm water that was present, along with the high degree of impervious surfaces (Figure 24) it is possible that the infiltration rate into the aquifer would not have been fast enough to prevent flooding.

For the areas of the aquifer that are at distance from the coastal perimeter pumping wells, it is unlikely groundwater levels would change as a result of the pumping. If a rainfall event of the same or greater magnitude to 3 June 2015 occurred, it is possible the same amount of flooding would occur in South Dunedin.

8. Flooding effects – Water of Leith and Lindsay Creek

The Leith Flood Protection Scheme as a whole performed within expectations, although localised erosion, damage to stream banks and plantings, and loss of riprap did occur in some areas, as detailed below. As noted above, the peak flow recorded in the Water of Leith on 3 June was approximately 100 cumecs. This is the second highest flow recorded in the last 50 years and about half the flow estimated to have occurred in 1929 (Figure 6). ORC has commissioned a detailed damage inspection report of the Water of Leith, and this work is underway. The work could not commence earlier as the water level was still too high to provide safe access and allow for sufficient observation of the river bed. Preliminary inspections have been undertaken by ORC staff.

In the Cumberland St to Dundas St reach, the scheme performed as expected with minimal damage. Remedial works are required for replacement of riprap over a length of approximately 20 m to protect the toe foundation of existing walls and the abutment from further scour.

High flows resulted in scouring and loss of the foundation toe under a localised section of the scour wall on the true right bank below the Dundas St Bridge. Repairs to this scoured wall will probably

[19] Beca Ltd, 2014. *Assessment of Options for Protecting Harbourside and South City from Direct Impacts of Sea Level Rise*. Report prepared for the Dunedin City Council.

be undertaken as part of the Dundas St to St David St stage of the Leith Flood Protection Scheme works in 2015/ 2016. Other localised scour occurred in this reach too.

The recent flood protection upgrade between St David St to Union St performed satisfactorily. There was no damage to the left bank. On the right bank riprap has been scoured away over a 100m length of the recently completed lower right bank pathway (Figure 25). The riprap lost over the lower 38 metres has resulted in a fall height greater than 1m from the walkway to the river bed. Options are being evaluated to remediate the fall height, for the interim access has been restricted by a barrier to eliminate the fall risk. Hydraulic loadings to the balustrades, compounded by significant build-up of debris, resulted in failure of the fixings to the concrete foundation. This failure has been attributed to a construction defect rather than design deficiencies, these defects have been remedied by the contractor. The turf and botanical plantings withstood the event with minor remediation and clean-up requirements.

Figure 25. Water of Leith before and after – looking upstream from near the Staff Club. Note the loss of some riprap on the true right bank.

In the Union St to Leith St reach the left bank has two regions of scouring approximately 5m long to approximately 4m above the bed. Scouring on the right bank of the bend immediately downstream of the ITS building has been reported, water levels have now receded to allow a survey of the extent of this damage. A survey is underway and initial visual assessments indicate the scour could be to a depth of 1.8m and extend approximately 1m under the existing wall. On the left bank material has been deposited on the beach. The existing channel confinement walls and banks performed as expected. Remedial works are required as soon as practicable to stabilise the suspected under scoured wall.

The Leith to Forth St reach experienced loss of riprap walls by scour from their base however overall the flood protection works in this reach performed as expected. The exception was the rapid expansion of the water way and circulating whirlpools which resulted in additional scour. Remedial works required are removal of the riprap from the berm into the channel. The left bank wall is a temporary construction until the Leith St Footbridge becomes widened. Repairs can be via placement of riprap over the scoured area. The right bank wall may require a localised design review to establish a streamline without initiating circular flow patterns.

The Clyde St to Forth St reach suffered no damage, other than debris collecting on left bank balustrade of walkway ascending from Clyde St Bridge. The scheme works performed as expected.

The Water of Leith debris traps performed as intended. The Woodhaugh Street boulder trap collected the bulk of the Leith debris (Figure 26) with the Malvern Street debris trap further upstream collecting a lesser amount of material. As soon as flood waters receded, contractors were engaged to clear the traps. A landslide occurred at the northern end of Malvern Street which partially blocked the channel but did not negatively affect channel capacity during the event. This landslide debris was cleared in the days following the flood.

The Lindsay Creek debris trap caught what little material came down to that point (Figure 27). Numerous sections of Lindsay Creek experienced significant bank erosion, as shown in Figure 28 to Figure 30.

Figure 26. Water of Leith debris trap at Malvern Street (left) and Woodhaugh Street boulder trap (right) during the event, 3 June 2015

Figure 27. Lindsay Creek debris trap at Bethunes Gully during the event, 3 June 2015

Figure 28. Bank erosion undermining a shed alongside Lindsay Creek at Kelvin Road, 4 June 2015

Figure 29. Bank erosion alongside Lindsay Creek at Kelvin Road, 4 June 2015

Figure 30. Bank erosion alongside Lindsay Creek at Norwood Street, 4 June 2015

9. Flooding effects – Kaikorai Stream

A number of flood related issues were observed in the Kaikorai catchment, relating to bank overtopping, bank erosion, and stormwater runoff. Areas particularly affected included:

- The low-lying area near the intersection of Brighton Road and Main South Road (near the SH1 underpass),
- The intersection of Kaikorai Valley Road and Stone Street, as well as much of Kaikorai Valley Road below this point (Figure 31),
- SH1 at Green Island (Figure 32) was closed due to flooding, with north-bound traffic diverted through Green Island.

All these areas were identified as being within the Kaikorai Valley floodplain in the recent ORC report created to help inform the review of the natural hazard provisions of the Dunedin City District Plan.[20]

Figure 31. Examples of surface flooding on Kaikorai Valley Road, midday on 3 June 2015

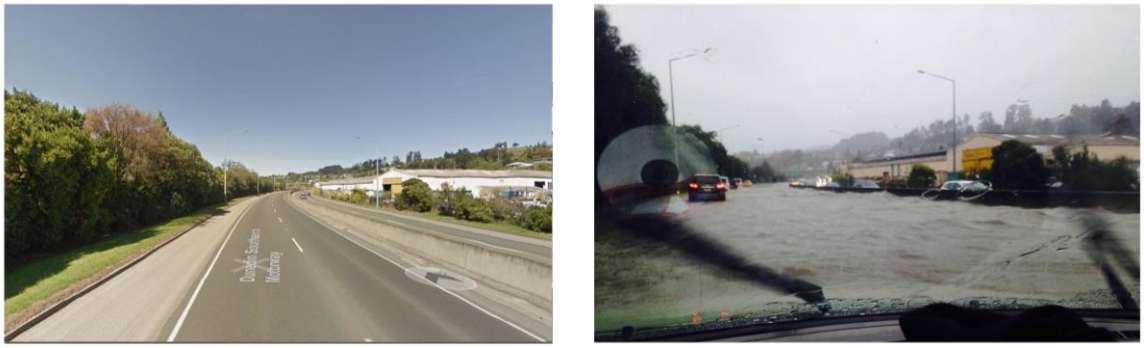

Figure 32. The northbound lane of the Dunedin Southern Motorway, east of the Carnforth Street underpass. Left: normal conditions (Google StreetView), Right: During the peak of flooding at approximately midday on 3 June.

At 12:30pm, a car and tree were reported in Kaikorai Stream, wedged in an NZTA box culvert under SH1 at Burnside (Figure 33), with a tree and other debris further upstream, caught up under a bridge (Figure 34). NZTA's contractor was contacted by ORC operations staff but was unable to remove the blockage in a timely manner because of other priorities. All blockages were removed by ORC staff by 4:35pm.

[20] *Flood hazard of Dunedin's urban streams*, Report No. 2014/0868, Otago Regional Council.

Figure 33. Car and tree lodged in culvert beneath SH1 at Burnside, 3 June 2015

Figure 34. Tree and debris trapped under bridge at Burnside, 3 June 2015

A number of blockages were reported in Abbots Creek. One was a small garden shed that had been sited on top of the creek bank that suffered scouring. The shed collapsed into the channel further exacerbating localised erosion issues. A number of residents of Flower Street phoned to complain about inadequately sized culverts at the Fulton Hogan sand quarry adjacent to Abbots Creek which appears to have caused some localised flooding to those properties. Fulton Hogan is assessing the situation at the request of the affected landowners.

10. Flooding effects – Taieri Plain

The flows of the main waterways which cross the Taieri Plain (Taieri and Waipori Rivers, Silver Stream and Owhiro Stream) were elevated but not exceptionally high, and were usually contained within their banks with only localised overtopping. There were some exceptions to this, and these are described below, along with the areas on the Taieri Plain which were most affected by floodwater.

Ponding and overland flow

As expected during high flows in the Taieri River, water overtopped the river banks and extensively flooded the berm areas and the Taieri River floodway (Figure 35) but no overtopping of the main floodbanks was recorded. The Henley spillway downstream of Otokia operated between approximately 10am on 4 June and 2am on 5 June (Figure 36) resulting in extensive ponding in the Henley floodway as expected in a rainfall event of this type. Much of the land surrounding the settlement of Henley was flooded, particularly at the southern end of the township (Figure 37). The flooding resulted from runoff from the coastal hills not being able to be discharged into the Taieri River due to high water levels and accumulating on low lying areas.

The threshold of operation of the Riverside Spillway was not reached and no water from the Taieri River spilled into the Upper Pond (Figure 38). However, water from other sources resulted in a maximum water depth of approximately 1.2m in the Upper Pond, with a total stored volume of 1.5 million cubic meters (4% of the Upper Pond total capacity). Sources of floodwater included the northern hill catchments (including Mill Creek), internal runoff and the Silver Stream (after it overtopped at the Gordon Road Spillway).

The Silver Stream overtopped at the Gordon Road Spillway, between approximately 4pm and 10pm on 3 June. Figure 39 shows the overtopping locations were mainly at the downstream end of the spillway, and that overtopping was of a considerably smaller scale than during the April 2006 event. The spillway is part of the Lower Taieri Flood Protection Scheme and overtopping is expected during high flows in the Silver Stream. Spilled water from the Silver Stream made its way downslope towards the Upper Pond, and combined with other sources of floodwater, contributed to flooding and ponding in a number of areas.

Extensive flooding was observed upslope (to the northeast) of the Lower Taieri Flood Protection Scheme Cutoff Bank (Figure 40). This ponding was due to runoff from the northern hill catchments, rainfall accumulation and from the Silver Stream overtopping after the brief operation of the Gordon Road Spillway.[21] The extent of ponding behind the Cutoff Bank was less than during the April 2006 flood event due to less overtopping at the spillway and an improved connection between the area behind the Cutoff Bank and the Upper Pond (improvements made by the ORC after the 2006 flood event).

Overtopping of Mill Creek in the vicinity of Dukes Road North caused localised ponding without significant damage.

Debris marks indicate that local surface runoff exceeded the drainage network capacity in the vicinity of Wyllies Crossing and observations indicate that blockage of culverts occurred in this location. Water overtopping from drains combined with water conveyed by swales and overland flow paths causing localised flooding in the area (Figure 41).

Observations made by ORC staff during and after the event confirmed the criticality of the swales and overland flow paths in conveying runoff from the hill catchments and complementing the ORC rural drainage network (e.g. Figure 42).

[21] *'Update to Taieri Plain flood hazard mapping for Dunedin City District Plan'* Report No. 2015/0960. '. Report to ORC Technical Committee, 22 May 2015.

Figure 35. Taieri River berms and floodway looking southwest, downstream of Allanton – 4 June 2015

Figure 36. Henley Spillway (downstream of Otokia) operating – 4 June 2015 11.45am

Extensive ponding was also recorded in the Lower Pond (Figure 43 and Figure 44) due to water overtopping the Owhiro Stream right bank, runoff from the southern hill catchments and rainfall accumulation. Extensive flooding occurred on the flanks of the coastal hills south of the Lower Pond mainly due to runoff from the southern hill catchments and the Owhiro Stream (Figure 44).

Extensive flooding occurred in the vicinity of Quarry Creek, south of Mosgiel. Cemetery Road and the grounds of East Taieri School were flooded. Flooding occurred in Gow and McGlashan Streets (industrial area south of Mosgiel) (Figure 45) as has occurred previously.

The Miller Road Spillway located on the left bank of the upper section of the Contour Channel operated during the event. Spilled water flowed overland and reached the Lee Canal. The Otokia Road Spillway located further downstream on the Contour Channel left bank did not operate. Overtopping of the Contour Channel left bank caused localised inundation between Miller Road

and Dow Road approximately. Localised scouring was also observed in the upper section of the Contour Channel.

A section of low-level floodbank located on the western edge of Lake Waipori (in the vicinity of McPherson Road) and a section of low-level floodbank at the north-western end of Lake Waihola were overtopped causing localised ponding.

Figure 37. Aerial view towards the south of floodwater at Henley – 4 June 2015

Figure 38. Ponding in the Upper Pond, view is towards the northeast – 4 June 2015

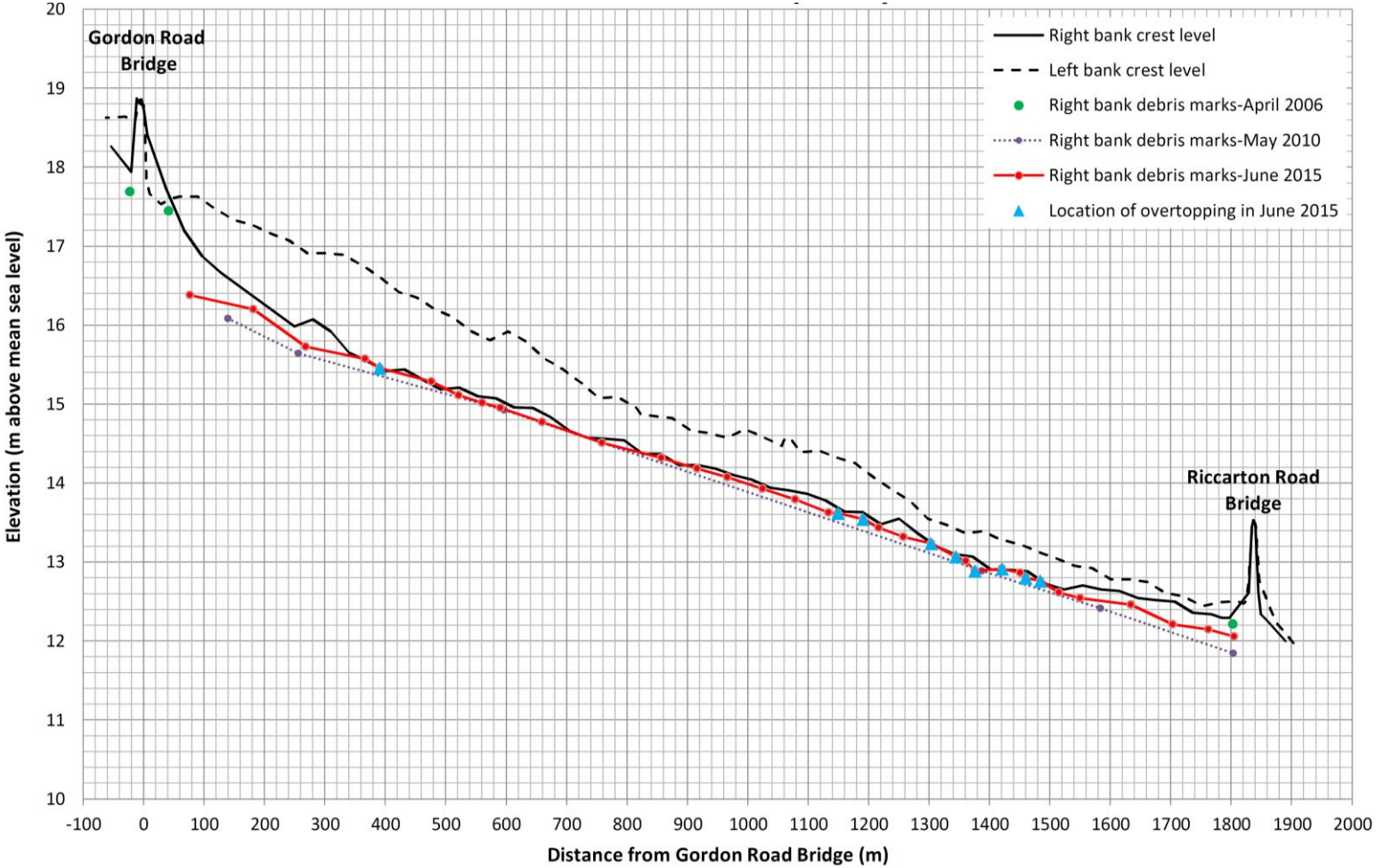

Figure 39. June 2015 maximum water level in the Silver Stream in relation to the top of the left and right floodbanks, between Gordon and Riccarton roads. Flood debris marks collected after the April 2006 flood event are also plotted.

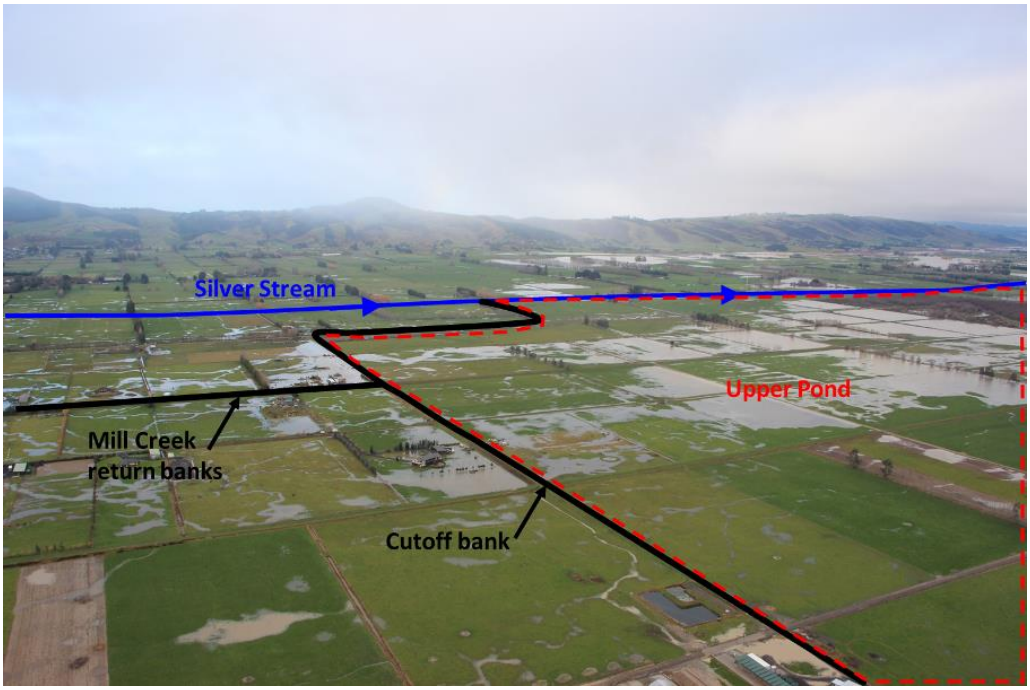

Figure 40. Ponding behind the Cutoff Bank, view is towards the south – 4 June 2015

Figure 41. Debris marks indicative of overland flow and ponding in the vicinity of Wyllies Crossing – 4 June 2015

Figure 42. Example of overland flow path conveying runoff from the hill catchments to an ORC drain between Riccarton Road and Gordon Road – 4 June 2015

Figure 43. Ponding in the Lower Pond, view is towards the southwest – 4 June 2015

Figure 44. Ponding in the Lower Pond (note the overtopping of the Owhiro Stream true right bank) and at the flanks of the coastal hills – 4 June 2015

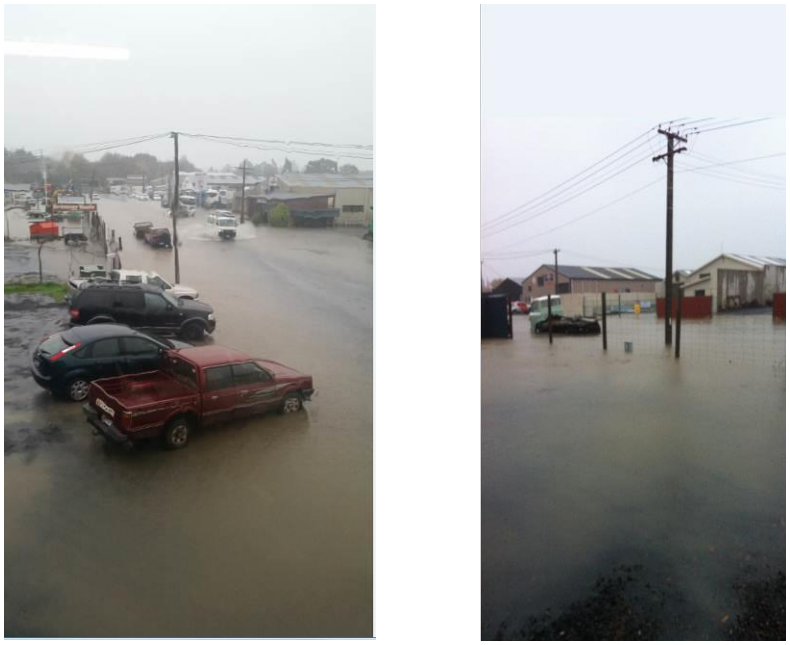

Figure 45. Flooding in Gow (left) and McGlashan (right) Streets, Mosgiel – 3 June 2015 (photos courtesy of PW Engineering and Payne Aluminium)

Taieri Land Drainage Pumping Stations

The *Waipori pump station* achieved the necessary pumping capacity to maintain drain levels and convey floodwater (Figure 46).

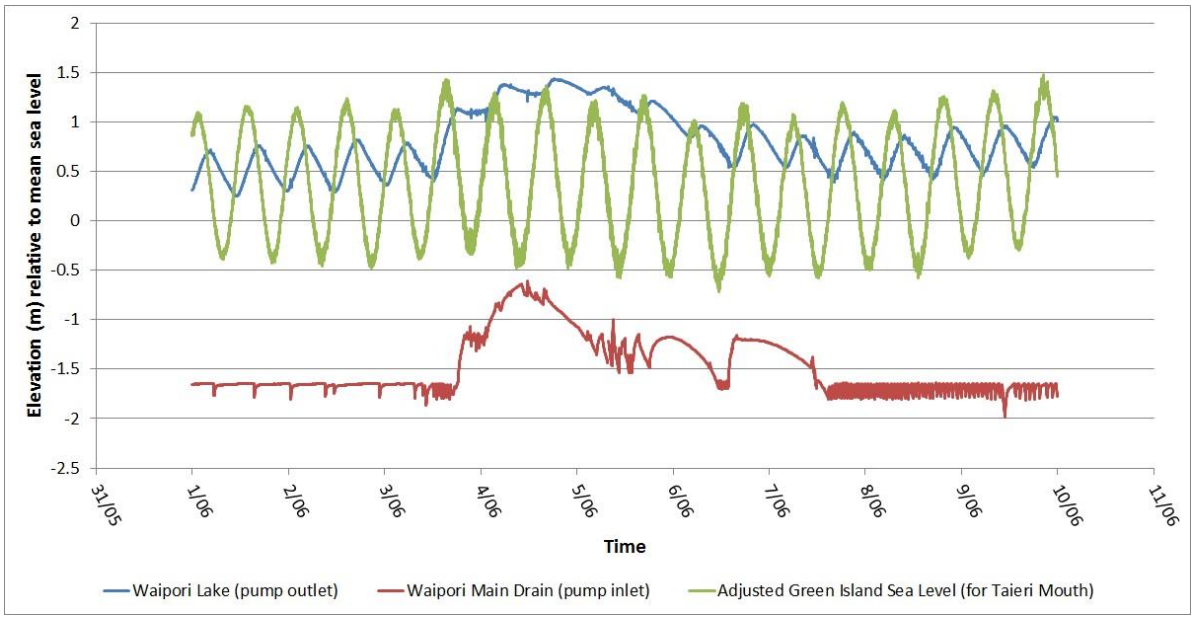

Figure 46. Main drain level at Waipori pump station, level of Lake Waipori and sea level, 1 to 9 June 2015

Landholders indicated their satisfaction that the event had been contained. The flood conditions provided valuable learnings, and an opportunity to refine the control system. It had not been previously possible to commission the pump station with all pumps running simultaneously with a high discharge head. Low voltages were noted in the pump house, tripping all pumps several times, each time requiring a manual reset. As a result of this, the pump station was manned by operations staff and then contractors for the first 24 hours of the event to ensure that the system operated as required. The reasons why the pumps were tripping was diagnosed and corrected by adjustments to the motor control parameters over the two days succeeding the event. The learning from this event will be applied to other pump stations in the future.

The pump at *Scroggs pumping station* generated a swilling action because of the inlet drain shape and flow conditions. This resulted in cavitation and reduced efficiency of the pump. The event resulted in overtopping of the floodbank from the receiving side back into the pump well, hence there was no point running the pump further, it was stood down until the water level declined on the discharge side. Subsequently the pump failed on 6 June due to moisture entering the motor via a chaffed control cable. The pump has been repaired and a number of actions assigned to improve future performance.

Henley pumping station ran continuously without any complications.

Lake Ascog pumping station has 2 pumps; it required one pump to handle the event in the catchment.

Mill Creek pumping station comprises of 2 pumps. Dead poplar trees overhanging the power supply lines to the pump station were scheduled to be removed by Delta at the start of the flood event, resulting in a temporary power outage to the pump station. The consequence of the dead trees being downed into the drains was that a number of branches hampered the pump station operation. As a consequence of the debris being in the drain channel ORC required an excavator for 8 hours to keep the screens clear.

Silver Stream pumping station has three pumps, all operated as required. Water arrived at the station from overland paths, resulting in a significant amount of debris build-up on the screens. An excavator was required on site for 8-9 hours clearing screens, the amount of material removed

equated to ten truck loads. At this time of the year the grass dies and drains have been mowed. A significant amount of the material that blocked screens and culverts resulted from drain mowing.

11. Flooding effects – Tokomairiro catchment and Milton

The rainfall and peak flows in the West and North branches of the Tokomairiro River were high but not exceptional (Figure 3 and Table 4).

The Clutha District Council (CDC) floodbank downstream of SH1 prevented the Tokomairiro River from affecting low-lying properties in the Mill Street area, with some freeboard (Figure 47), and the CDC pump appeared to be assisting in the removal of surface runoff from Milton.

Figure 47. The floodbank (left) and pump station outlet (right) at Milton, downstream of SH1, 3 June 2015

Observations by ORC staff during and after the event indicate that in general the ORC's scheduled drainage network on the Tokomairiro Plain operated well. A number of drains were conveying water at full capacity (with little or no freeboard), while others (such as the upgraded T3 drain above Tokoiti Road) were operating at less than capacity. Other natural 'swale' features mapped for the Milton 2060 Flood Risk Management Strategy were also observed to be carrying floodwater during the event. These features were observed to be conveying rural stormwater flows into the Milton urban area on the eastern side of the township[22], and Figure 48 shows floodwater still ponding in these features at midday on 4 June. This confirms that the additional rural diversion work identified in the Milton 2060 Strategy would further protect the urban area and reduce flooding within the township.

Floodwater affected properties in Milton, as well as a number of roads in the area. Floodwaters again ponded in the naturally low-lying area at the southern end of Ajax Street (Figure 49), and one property in Ajax Street was evacuated, along with one each in Chaucer, Lowery and Johnson streets. All four properties were also evacuated in July 2007. Other residents reported significant amounts of water on their properties, but did not evacuate.

The road from Tokoiti to Toko Mouth was closed for several days following the event due to floodwaters across the road.

[22] J. Witt, CDC, *Pers.comm.* 7 July 2015.

Figure 48. Residual floodwater in swale features, 4 June 2015. The left image shows the area to the east of Milton (looking southwest) and the right image shows the area to the north of Milton (looking northeast), with SH1 visible.

Figure 49. Aerial view of floodwater on Ajax Street (centre) Milton, with Union Street (SH1) to the right, 4 June 2015

12. Flooding effects – Lower Clutha and Pomahaka

The Clutha Delta experienced three significant rain events over the month ending 21 June 2015. The cumulative effect of these events was compounded by high seas and a sand bar which formed at the Koau mouth of the Clutha River, impeding gravity drainage from the catchments.

Over this month, a total of 156mm of rain fell at Nugget Point. The first rain event (30 mm) on 24 May was concentrated over the Groyne Farm area east of Kaka Point Road and resulted in significant inundation of farmland. This water was not able to drain completely before the second, larger event on 3 June (Figure 3). The 3rd event on 12-16 June (10mm) was spread out and less intense but compounded the flooding sustained earlier in the month.

The *Paretai pump station* performed well, the heavy rainfall provided an opportunity to study the new control systems performance while operating under high head and flow conditions (Figure 50). This exercise has resulted in a refinement of the control philosophy. These changes will provide benefits in the future, both for optimising the effectiveness and improving the reliability of the pump station assets.

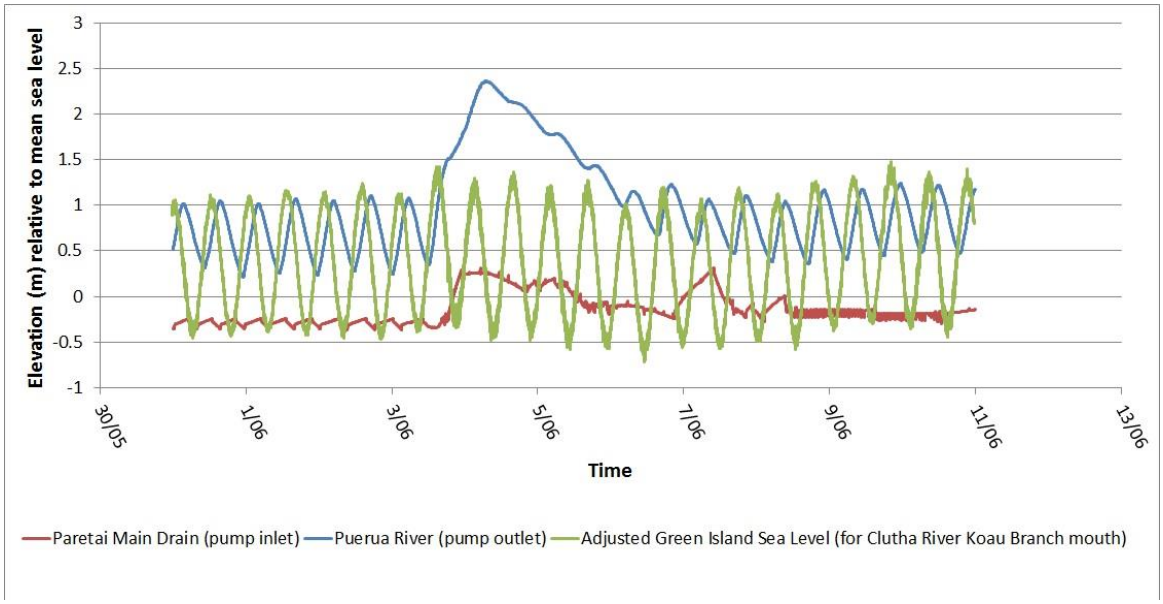

Figure 50. Paretai Pump Station inlet water level, outlet water level (Puerua River) and sea level, 1 to 10 June 2015

Kaitangata pump station maintained the necessary flow capacity for the 3 June event. There was one noteworthy incident where Pump 2 failed to start due to a fault with the high level sensor.

Inch Clutha pump station performed well.

Barnego pump station operated as per the stations setting's and pump capacities. The majority of the water in the catchment was able to exit through the gravity gate as the level of water in the Clutha River declined.

13. Flooding effects – Inland Otago

Rainfall intensities further inland were generally less significant than those in and around Dunedin City (Figure 3), and the Central Otago District Council did not observe any major flooding related issues.[23] One exception was at Blackjacks Creek, 3km south of Roxburgh, where a culvert under SH8 was washed out by flash flooding, closing the road for 2 days (Figure 51). The nearest rain gauge is Moa Flat (17km to the south) where the 56mm of rain recorded was the 10th highest 1-day rainfall on record. This suggests that the flooding in Blackjacks Creek resulted from localised heavy rainfall within the catchment.

Figure 51. Flooding at Blackjacks Creek at SH8, 3 June 2015

14. Landslides

Numerous landslides on hillslopes in the Dunedin City district occurred as a result of the 3 June rainfall event, and an example of one small area on the Otago Peninsula is shown in Figure 52. Staff from ORC and GNS Science completed a program of observations and assessment of landslide activity following this event, as well as collating observations from other agencies. They are currently undertaking further work to compare the level of activity during the June 2015 event with previous heavy rainfall events. A separate report summarises the program of work instigated by ORC in 2012 to improve the understanding of landslide hazard within the Dunedin City district.[24]

[23] T. Andrews, CODC. *Pers.comm.* 6/7/2015

[24] Report 2015/1003. *Updated landslide hazard information for Dunedin City*, Prepared for Technical Committee, Otago Regional Council, 22 July 2015.

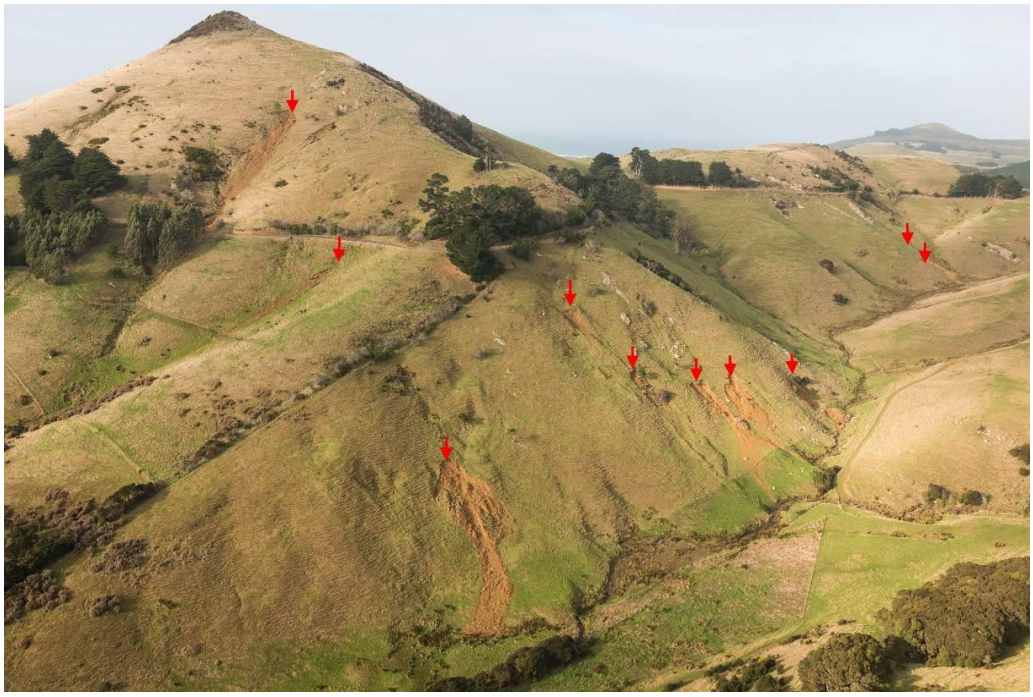

Figure 52. Aerial view of Harbour Cone, with landslide locations marked with red arrows, 16 June 2015

15. Discussion

Generally speaking, the rainfall and its effects had precedent and verified existing knowledge and information to do with flood hazard for Otago. Notwithstanding that, the event enabled the body of knowledge to be extended and information to be refined. For example, 9 flow gaugings were completed over the peak of this relatively brief high-flow event. This included the highest gauged flows on record at the Waitahuna River site (77 cumecs) and the Water of Leith (93 cumecs - just 7 cumecs below its peak flow), and the highest gauged flows in 25 years on the Pomahaka River.

A traditional current meter gauging from the SH87 Bridge at Outram was obtained, and this has helped to corroborate recent flood gaugings using Heli-gauging techniques developed by ORC, using more modern flow measuring technology (as shown in Figure 53).

The Heli-gauging technique also enabled flow gaugings to be conducted on the Tokomairiro River in locations that are normally inaccessible, due to road closures in times of flood. Additional information including photographs and observations of surface flooding was also collected, some of which have been incorporated into this report.

Figure 53. Heli-gauging underway on the Tokomairiro River using a kayak-mounted Acoustic Doppler Current Profiler (ADCP) flow measuring device

Models and information systems developed to support engineering design and land use planning decisions, such as numerical hydraulic models of the Water of Leith and Lindsay Creek and mapping of flood hazard to support Dunedin City's 2GP District Plan review were used by staff during the event to inform decision-making and flood advisories.

Staff responded quickly during an event in which the scale and geographic extent changed rapidly – the event had effects that were wider than Dunedin city and a flooding risk existed in other parts of Otago after rainfall within the city eased. ORC's response to the event benefited from staff making direct observations at strategic locations and providing regular and accurate reports back to the staff responsible for planning, intelligence, operations and communications.

It is noted that ORC's Long Term Plan 2015-2025 has a number of initiatives that will help further reduce or manage risks associated with the type of rainfall that occurred in June. Those include:

1. Completing the Leith Flood Protection Scheme;

2. Continuing to work with Otago's territorial authorities to integrate natural hazard information into District Plans;

3. With Dunedin City Council, developing a natural hazard risk management strategy for South Dunedin;[25]

[25] *South Dunedin Groundwater hazards and Summary*, Report No. 2014/0957, prepared for Otago Regional Council Technical Committee, 15 July 2014

4. Developing a flood forecasting system for the Water of Leith and Lindsay Creek and improving the effectiveness of the forecasting models for the Taieri River and Silver Stream;

5. Investigating options to improve drainage of the upper pond (Lower Taieri Flood Protection Scheme and East Taieri Drainage Scheme);

6. Providing real-time public access to operational information for the Paretai, Kaitangata and Barnego pump stations (Lower Clutha Flood Protection and Drainage Scheme).

16. Recommendations

That this report be received and noted.

Gavin Palmer
Director Engineering, Hazards and Science

Otago Regional Council

REPORT

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Prepared For: Technical Committee
Prepared By: Dean Olsen, Manager Resource Science
Date: 7/7/2015

Subject: **Lindis Catchment: Water Quality Study**

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1. Précis

The Lindis River is a major tributary of the upper Clutha River, with the confluence a short distance upstream of Lake Dunstan. The river is fed by high rainfall (>1 m per annum) in the steep upper catchment, while the lower catchment and the Tarras Basin receive very low levels of rainfall (<450 mm per annum). As a result there is heavy demand for water abstraction in the lower catchment and existing levels of allocation contribute to the lower Lindis River drying in most years.

A water quality report ("Water Quality Study: Lindis River Catchment") has been prepared presenting the results of long-term (State of the Environment or SOE) monitoring at two sites in the Lindis River, intensive water quality monitoring at six additional mainstem sites and two tributary sites in 2013-2014 as well as ecological surveys carried out in 2014-2015 (see Figure 1 for sampling sites).

Water quality in the upper Lindis River is generally very good, but the lower catchment has high concentrations of total nitrogen (TN) and nitrate-nitrite nitrogen (NNN). Long-term increasing trends (2005-2014) in TN and NNN and decreasing trend for dissolved reactive phosphorus (DRP) were detected for the Ardgour Road hydrological site, while a decreasing trend in *E. coli* concentrations was detected at Lindis Peak over the period 2003-2014. TN and NNN concentrations at sites downstream of Archies Flat were markedly higher than at sites upstream. This deterioration in water quality coincides with the location of the major water takes from the Lindis River and is likely to be a result of nitrogen-enriched (relative to surface water) groundwater entering the river. Water quality in the two tributaries sampled in this study (Cluden and Wainui Streams) was generally poorer than most mainstem sites, with relatively high TN, TP and DRP concentrations. Concentrations of NNN and *E. coli* were relatively low in both tributary sites.

Results from the SoE sites and the 2013-2014 survey were compared to the receiving water limits in Schedule 15 of the Regional Plan Water. This showed that all sites were likely to comply with limits for NH_4-N, DRP, *E. coli* and turbidity. The Ardgour Road hydrological site did not comply with the NNN limit and other sites in the lower catchment (Ardgour Road bridge, Ardgour Road hydrological site and SH8) are not likely to comply with the NNN limit at present, although all other sites in the catchment are expected to. Given that 80th percentiles for most of the sites were calculated from only one year of data (the exceptions being the SoE sites at Lindis Peak and Ardgour Road), these results should be interpreted cautiously.

The periphyton community at sites in the upper Lindis catchment (above Lindis Peak) were generally indicative of unenriched conditions, with low chlorophyll *a* concentrations and low cover by long filamentous algae. Much greater periphyton growths were observed at Ardgour

Road Bridge and the Ardgour Road hydrological site, most likely as a result of a combination of more enrichment and/or lower flows at this downstream site

Macroinvertebrate communities collected from the Lindis River at the Ardgour Road hydrological site (2006-2014) have generally been indicative of good water quality and there is no apparent trend in macroinvertebrate metrics. Macroinvertebrate samples collected in October 2014 indicated good to excellent water quality throughout the catchment, while samples collected in February 2015 were consistent with good water quality upstream of Lindis Peak and fair or good water quality downstream. This may reflect a combination of low, stable flows, the presence of the invasive diatom *Didymosphenia geminata* and/or water quality in the lower sites.

Macroinvertebrate communities in Cluden stream indicated good-fair water quality in October 2014, but fair-poor water quality in February 2015. Macroinvertebrate communities in Wainui stream in October 2014 indicated good-fair water quality.

The results of this study will be used to guide future policy decisions and to promote good practice among the community and other stakeholders to maintain and enhance water quality in the Lindis catchment.

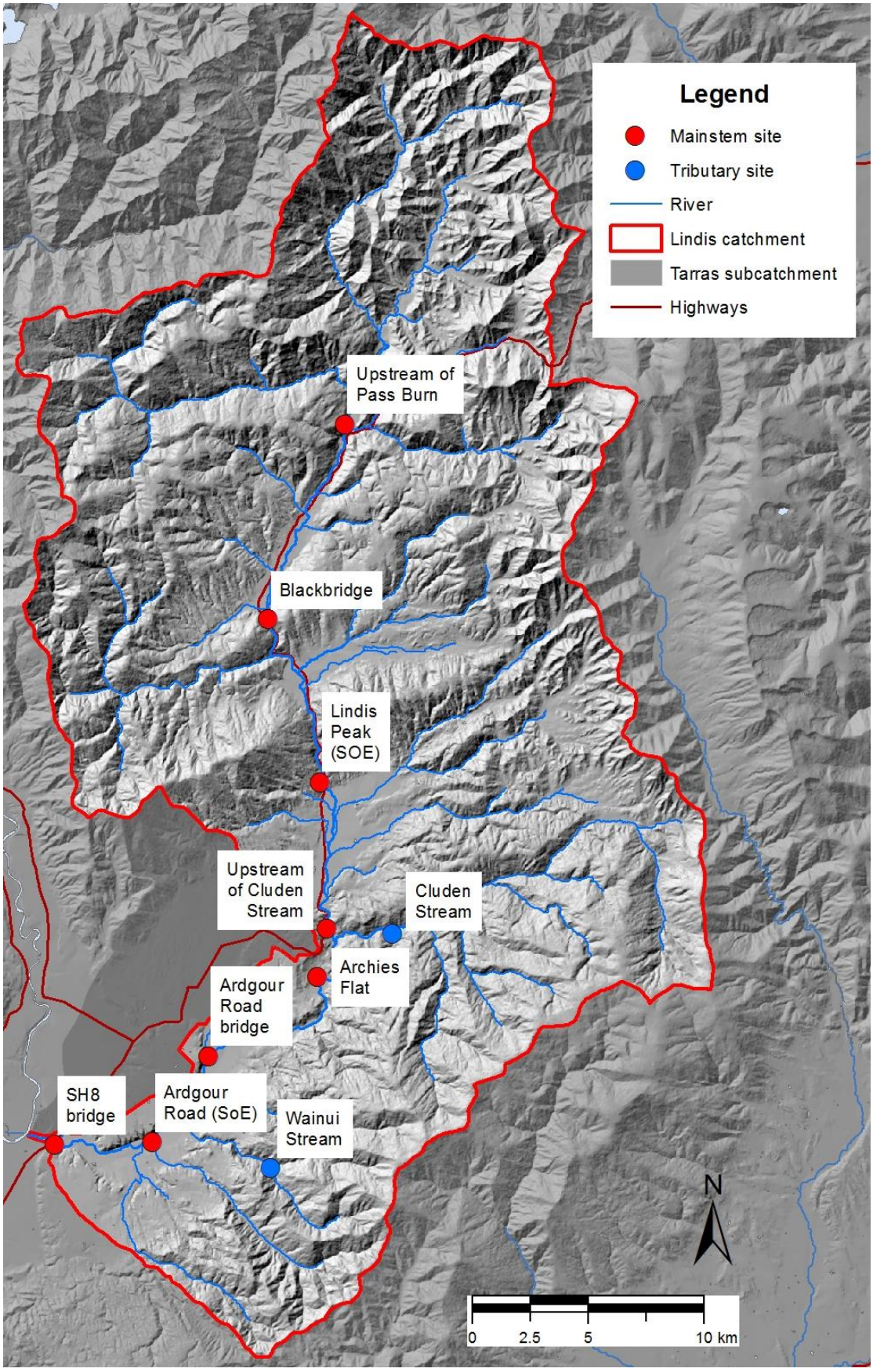

Figure 1 **Lindis catcment showing water quality monitoring sites. The Lindis Peak and Ardgour Road sites are also hydrological monitoring sites.**

2. Recommendation

That this report and the technical report "Water Quality Study: Lindis River Catchment" are received and noted.

Gavin Palmer
Director Engineering, Hazards and Science

Otago Regional Council

REPORT

Document Id: A806130

Report Number: 2015/1026
Prepared For: Technical Committee
Prepared By: Matt Dale – Water Resource Scientist
Date: 7/7/2015

Subject: **The effects of the 24 hour voluntary irrigation shutdown on flows in the Taieri River**

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1. Précis

The start of the 2014/15 irrigation season was one of the driest on record for the middle and upper reaches of the Taieri catchment, with very little rainfall occurring between October and December. The severity of the dry period is shown in Figure 1 where a Standardised Precipitation Index (SPI) map has been created for the Otago Region, showing that much of the Maniototo and Strath Taieri area was either "Severely Dry" or "Extremely Dry", with a return period of over 1 in 50 years around Ranfurly and Middlemarch.

Following an extended period of low flows in the Taieri catchment resulting from this lack of rain, the community agreed to a 24 hour voluntary irrigation shutdown to observe the effects on flows in the Taieri River and its tributaries, and to give the community a better understanding of how the system behaves with travel times, attenuation as well as how much water was available in the system. The shutdown ran from 12 pm on 15 January and finished at 12 pm on 16 January 2015.

A report "The effects of the 24 hour voluntary irrigation shutdown on flows in the Taieri River: 15th–16th January 2015" has been prepared to present the information on the hydrology of the main stem of the Taieri River and tributaries as well as on the ground observations gathered during the 24 hour shutdown.

Flows were monitored at six recorders in the Taieri catchment during the shutdown period; five in the main stem (Canadian Flat, Waipiata, Tiroiti, Sutton, and Outram) and one in the Kye Burn at Scotts Lane. In addition, flow gaugings were undertaken at 19 sites (14 tributaries, 5 main stem) in the Strath Taieri and Maniototo.

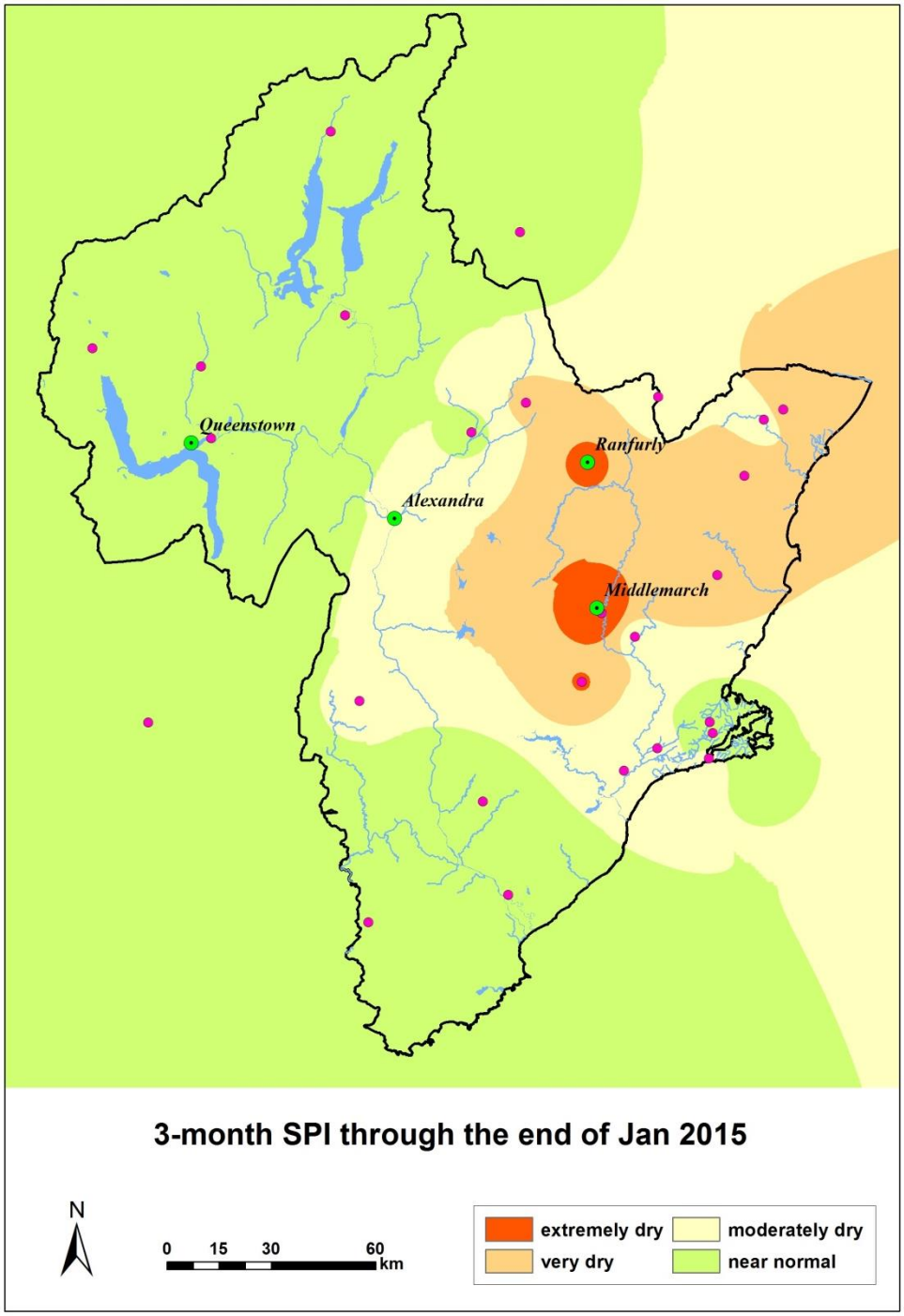

Figure 1 **Standardised Precipitation Index for the three month period ending January 2015**

The voluntary shutdown returned 130 l/s to the main stem of the Taieri River upstream of Waipiata, while an additional 60 l/s was gained between Waipiata and Tiroiti. This was sufficient to bring flows above the minimum flows specified in the Regional Plan: Water at both Waipiata and Tiroiti. The short-term nature of the shutdown meant that the pulse of water released by this event did not reach the Sutton flow recorder due to abstraction over the subsequent days. It was also clear that the shutdown did not result in the resumption of surface flows in the middle reaches of the Sow Burn and Swin

Burn, however it is unclear if a longer period of shutdown would result in the resumption of surface flows at these sites.

By observing the pulse of flow moving down the catchment, as well as smaller flow events over January/February 2015, it has been possible to estimate the travel time between the major flow sites in the Taieri during times of low flows (Table 1). This information can be used to inform the timing and duration of water management mechanisms such as community-led rostering.

Table 1 Calculated travel time between flow sites in the mid and upper-Taieri

	Travel time (h)			
Site	**Waipiata**	**Tiroiti**	**Sutton**	**Outram**
Canadian Flat	**96**	**106**	**133**	**152**
Waipiata		**9.5**	**37**	**56**
Kye Burn at Scott's Lane		**15**	**42**	**61**
Tiroiti			**27**	**46**
Sutton				**19**

Observations on 16 January showed evidence of fish stranding in the Swin Burn and Sow Burn, and those fish remaining in refuge pools were showing signs of thermal stress. Significant algal growth was observed in the Swin Burn, Kye Burn, Little Kye Burn, Pig Burn, Sow Burn and the main stem of the Taieri River at Kokonga and Tiroiti. Photographs of tributaries and the mainstem that were taken during the 24 hour shutdown period are also presented in the report.

2. Recommendation

That this report and the technical report "The effects of the 24 hour voluntary irrigation shutdown on flows in the Taieri River: 15th–16th January 2015" are received and noted.

Gavin Palmer
Director Engineering, Hazards and Science

Otago Regional Council

REPORT

Document Id: A799765

Report No: 2015/0999
Prepared For: Technical Committee
Prepared By: Gavin Palmer, Director Engineering, Hazards and Science
Date: 9 July 2015

Subject: Director's Report on progress

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1. Sendai Framework for Disaster Risk Reduction

New Zealand's progress with implementing the Sendai Framework for Disaster Risk Reduction 2015-2030 (refer appendix 1) was the subject of a stocktake at the New Zealand Symposium on Disaster Risk Reduction in Wellington that I attended on 15 June. The framework was adopted by 187 United Nations member States, including New Zealand, at the Third UN World Conference on Disaster Reduction in Sendai, Japan in March[1]. Approximately 50 speakers including representatives of the Department of Prime Minister and Cabinet, Treasury, Insurance Council, insurers, Crown Research Institutes and Red Cross outlined initiatives that address the framework's four priorities. Basil Chamberlain, Chief Executive of Taranaki Regional Council, spoke of the important role local government plays in risk reduction and used the LGNZ think-piece on natural hazards as an example of sector collaboration. The framework will be useful for benchmarking ORC's own work on risk reduction.

2. Weather radar for Otago

MetService announced in June that they have additional funding to build a new weather radar in a yet to be determined location, to help improve rainfall measurement and forecasting in Otago. Weather radar are purpose-built to detect precipitation, in particular to determine the precipitation type (e.g. solid or liquid, thunderstorm activity), and the speed and direction of movement of that precipitation. They have a range of 300 kilometres; scans are completed every 7.5 minutes and are available to the user about 2 minutes after scan time. Data from the radar can be combined with local rainfall observations during storm events to determine actual accumulated precipitation across a wide area. Typical monthly uptime for the New Zealand weather radar network is >99%. Members of the public can view radar data via www.metservice.com and, in more detail, via MetConnect, a user-pays website which the ORC has access to.

A weather radar sited closer to Dunedin would have assisted during the June 3 rainfall event by providing, in near-real time:

a) the ability to monitor the spatial extent of the rainfall,
b) indications of current rainfall intensity and likely short-term variations in this;
c) the ability to anticipate major short-term changes in (a) and (b).

[1] http://www.unisdr.org/archive/44892

The rain band approaching on the morning of 3 June would have been plainly obvious. Because the beams of both the Invercargill and Rakaia radars are at reasonably high altitude over most of Otago they are incapable of detecting precipitation in the lower part of the atmosphere (Figure 1).

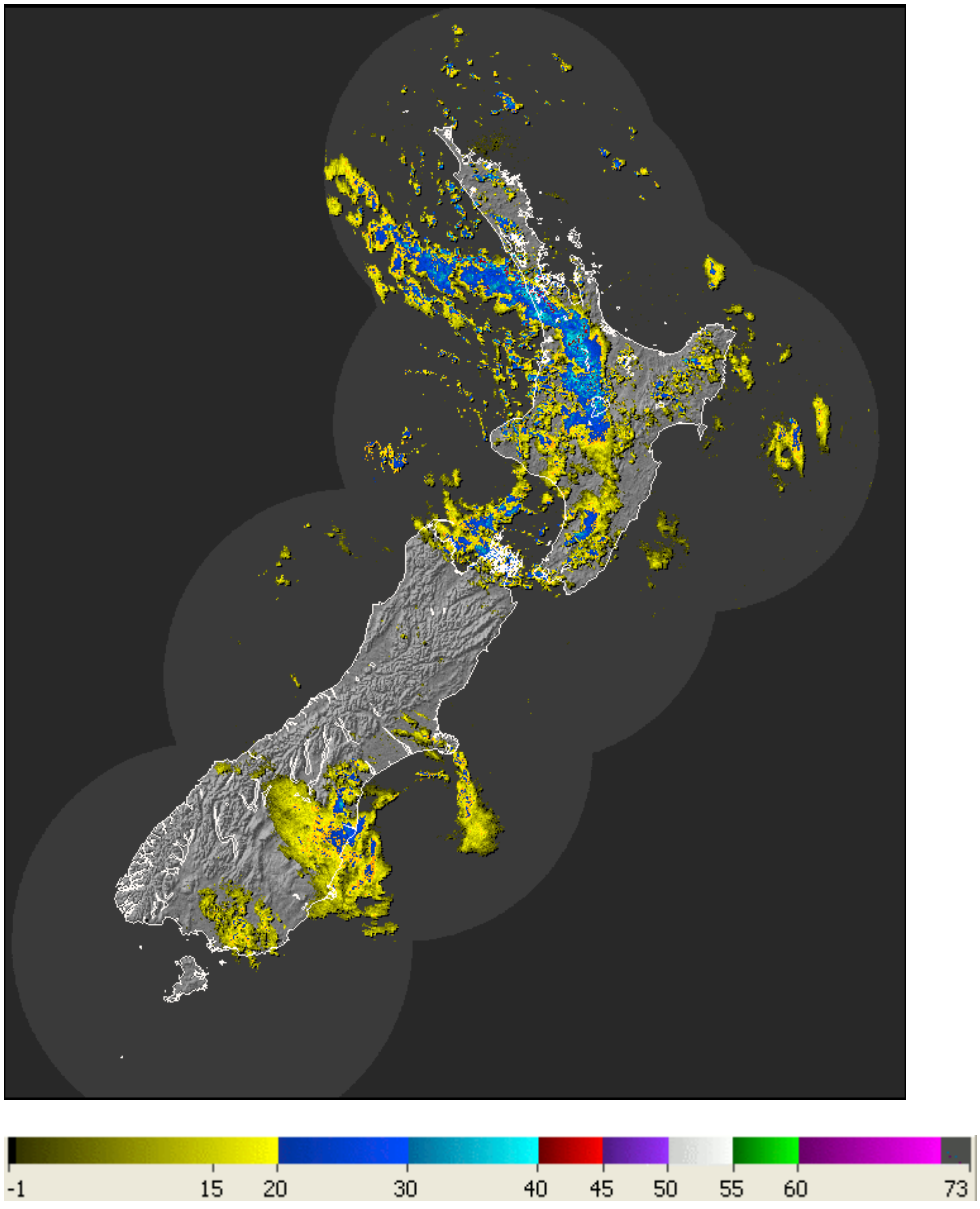


Figure 1 Precipitation measured by MetService weather radar at 1530hrs on 3 June 2015 (Composite image courtesy of Meteorological Service of New Zealand Ltd)

With regard to detection of precipitation, siting of the radar is important. The combination of Otago's complex terrain and the radar's range of 300 km mean that no site will provide perfect coverage of all of Otago. MetService has indicated it intends calling on ORC's knowledge of flood risk as part of the process of determining the best location of the new radar.

3. Waipori floodbank seismic investigations

Assessment of the seismic risk to the Waipori floodbank is continuing. The floodbank mitigates the risk of Lake Waipori causing flooding of approximately 3100 hectares of West Taieri. That land is lower than current mean sea level and therefore has a risk of being flooded regardless of the flow in the Taieri or Waipori Rivers. Subsurface investigations involving cone penetrometer testing of the 11 km long floodbank at nominal 250 metre spacings have been completed (Photograph 1) and the data is currently being assessed. The report on the investigation will be completed next month and will inform decisions on how to manage the seismic-related flooding risk for West Taieri.

Photograph 1 Cone penetrometer testing of the Waipori floodbank (Lower Taieri Flood Protection Scheme) in June 2015

4. Recommendation

That this report is noted.

Gavin Palmer
Director Engineering, Hazards and Science

Otago Regional Council

Appendix 1

Sendai Framework for Disaster Risk Reduction 2015-2030

Expected Outcome

The **substantial reduction of disaster risk and losses** in lives, livelihoods and health, and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

Goal

Prevent new and **reduce existing disaster risk** through economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that **prevent and reduce hazard exposure and vulnerability**, **increase preparedness for response and recovery, and strengthen resilience.**

Targets

1. Substantially reduce **disaster mortality** in the decade 2020-2030 compared to the period 2005-2015
2. Substantially reduce the number of **affected people** in the decade 2020-2030 compared to the period 2005-2015
3. Reduce direct disaster **economic loss** in relation to GDP by 2030
4. Substantially reduce disaster **damage to critical infrastructure and disruption of basic services** by 2030
5. Substantially increase **national and local disaster risk reduction strategies** by 2020
6. Substantially enhance **international cooperation** to developing countries by 2030
7. Substantially increase the availability of and access to multi-hazard **early warning systems and disaster risk information** by 2030

Priorities for Action

Priority 1. Understanding disaster risk

Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be leveraged for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to and recovery from disasters.

Priority 2. Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is important for effective and efficient management of disaster risk. Clear vision, plans, guidance and coordination within and across sectors, as well as participation of relevant stakeholders, are needed. Strengthening disaster risk governance for prevention, mitigation, preparedness, response, recovery and rehabilitation is therefore necessary and fosters collaboration and partnership across institutions for the implementation of disaster risk reduction and sustainable development.

Priority 3. Investing in DRR for resilience

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment. These can be drivers of innovation, growth and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation.

Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

The steady growth of disaster risk, including the increase of people and assets exposure, indicates the need to further strengthen disaster preparedness for response, integrate disaster risk reduction in response preparedness and ensure that capacities are in place for effective response and recovery at all levels. Disasters have demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of a disaster, is a critical opportunity to "Build Back Better", making nations and communities resilient to disasters.

Role of Stakeholders

While States have the overall responsibility for reducing disaster risk, it is a **shared responsibility** between Governments and relevant stakeholders. In particular, non-State stakeholders play an important role as enablers in providing support to States in the implementation of this Framework at local, national, regional and global levels. Their **commitment, goodwill, knowledge, experience and resources will be required**. This includes:

Civil society, volunteers, organised voluntary work organisations and community-based organisations

Women, children and youth, persons with disabilities and their organisations, older persons, indigenous peoples, and migrants

Academia, scientific and research entities and networks

Business, professional associations and private sector financial institutions, including financial regulators and accounting bodies

Media

OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Communications Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 22 July 2015 following the Technical Committee meeting

Membership:

Cr Trevor Kempton (Chairperson)
Cr Graeme Bell (Deputy Chairperson**)**
Cr Doug Brown
Cr Louise Croot MNZM
Cr Michael Deaker
Cr Gerrard Eckhoff
Cr Gary Kelliher
Cr Sam Neill
Cr Gretchen Robertson
Cr Bryan Scott
Cr David Shepherd
Cr Stephen Woodhead

Apologies:

Leave of absence: **Cr Gerrard Eckhoff**

In attendance:

Please note that there is an embargo on agenda items until 8.30 am on Monday 20 July.

CONFIRMATION OF AGENDA

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 3 June 2015, having been circulated, for adoption

Matters arising from minutes

FOR NOTING

Item 1
2015/1000 **Stakeholder Engagement Report.** DSE, 03/07/15

Reporting on community, stakeholder and staff engagement activities carried out by Stakeholder Engagement directorate staff since the last meeting.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Communications Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 3 June 2015 commencing at 12.20 pm

Present:	**Cr Trevor Kempton** (Chairperson) **Cr Graeme Bell (**Deputy Chairperson**)** **Cr Doug Brown** **Cr Michael Deaker** **Cr Gerrard Eckhoff** **Cr Gary Kelliher** **Cr Sam Neill** **Cr Gretchen Robertson** **Cr Bryan Scott** **Cr David Shepherd** **Cr Stephen Woodhead**
Leave of absence:	**Cr Louise Croot**
In attendance:	**Peter Bodeker** **Wayne Scott** **Jane Leahy** **Fraser McRae** **Gavin Palmer** **Janet Favel**

CONFIRMATION OF AGENDA

Cr Kelliher requested the opportunity to talk about Mr John Anderson from Central Otago, who had passed away recently.

MINUTES

The minutes of the meeting held on 22 April 2015, having been circulated, were adopted on the motion of Crs Bell and Shepherd.

Matters arising from minutes

There were no matters arising from the minutes.

FOR NOTING

Item 1
2015/0925 **Stakeholder Engagement Report.** DSE, 11/5/15

The report described community, stakeholder and staff engagement activities carried out by Stakeholder Engagement directorate staff since the last meeting.

Rural Water Quality Implementation Strategy - The meeting was concerned about use of the term 'behavioural change', which it was considered could be seen as manipulative. Council's role was, on the basis of scientific information, to reach a certain conclusion, set up frameworks, and reinforce them with dis/incentives. This could result in change of behaviour.

Rural Water Quality Implementation delivery – It was noted that instead of visiting all farms in Otago, the focus would be on farms in the Waiwera and Manukerikia catchments, based on their higher risk, and a series of drop-in sessions would be held across Otago. Mrs Leahy commented that this work was on track to be completed by the end of June. She advised that the drop-in sessions were going well, with attendances of about 30 people at each.

Cr Eckhoff moved
Cr Bell seconded

That the report be noted.

Motion carried

Cr Kelliher noted that Mr John Anderson of Central Otago had recently passed away. Mr Anderson's career in water management throughout Central Otago had included working under contract for irrigation companies, and managing the Manuherikia River. The irrigation schemes he had managed were in a very sound state. He had also invented a water measurement device. Cr Kelliher suggested that a letter be sent to Mr Anderson's family on behalf of Councillors expressing sympathy for their loss and acknowledging the valuable work he had done for the community.

The meeting closed at 12.48 pm.

Chairperson

Otago Regional Council

REPORT

Document Id: A799812

Report Number: 2015/1000
Prepared For: Communications Committee
Prepared By: Director Stakeholder Engagement
Date: 3 July 2015

Subject: **Communications Committee – Report July 2015**

This report records stakeholder engagement activity between 12 May and 30 June.

1. Water Quality

Community Liaison Education (CLE) staff have completed the target of visiting all parts of Otago to ensure landholders are aware of their obligations under the rural Water Plan. These activities are summarised in the table, below, with more detail following.

Table: Number of people visited or attending events

420 farms visited	**200** attended drop-ins	**150** at events	**Other**
▪ Waiwera, Lawrence, Upper Pomahaka, Manuherikia areas ▪ Information packs handed out	▪ Held in Lawrence, Balclutha, Tapanui, Clinton, Outram, Alexandra, Tarras, Ranfurly, Oamaru	▪ Beef & Lamb land environment planning ▪ Upper Pomahaka Farmers Water Care group ▪ Waipahi Farmers Water Care group ▪ Kakanui Water Allocation sub-committee ▪ AgFirst farming expo ▪ Farm Business management students ▪ Landcare Kakanui Community Catchment project	▪ 50 staff trained in 6A ▪ External OVERSEER ® group met ▪ Dairy working group initiated ▪ Waitaki Irrigators Collective & North Otago Irrigation Company ▪ Combined AgResearch & Environment Southland meeting ▪ Invermay Deer focus farm meeting ▪ Rural professionals meeting

Farm visits

These visits were mostly to properties that had not already been visited by other council staff in the course of their compliance or science monitoring. Most houses visited received one or more packs on the rural water quality plan from staff, an overview of the Otago water quality plan, and the opportunity to ask any questions. They were also invited to a follow-up drop-in event in their area. Of the 420 homes visited, 168 were home. Environmental Monitoring Officers (EMOs) and science staff have continued distributing information packs during their routine farm visits.

Drop-in sessions

These were arranged to provide landholders across Otago with an opportunity to find out more about their responsibilities and have questions answered. The style of the sessions was flexible depending on the number of people attending - generally small groups joined a staff member and/or a councillor to work through answers to questions questions.

This work largely completes the task of creating high awareness of the rural water quality plan. Our focus is now on detailed planning around moving landholders from being aware, but not necessarily active, to taking action.

External events

We have continued to support landholders by working with third parties - attending their events and responding to questions.

Events that we have spoken at include;

- **Beef and Lamb** level two land and environment plan (LEP) at Mt Burke station, Wanaka on 29 May. We provided clarity on the leaching rate rules within 6A, particularly with regard to the alpine lakes catchment which has a 15kg/ha leaching rate. Twenty people attended.

- **Upper Pomahaka Farmers Water Care Group** on 8 June. A recap of 6A, and an overview of the water quality in the Pomahaka was discussed by CLE staff, while DairyNZ spoke about the WCG's own network of Schedule 15 water quality sampling regime. Local farmers presented AgResearch's winter grazing management trial results. Seventy-five people attended.

- **Waipahi Farmers Water Care Group** on 15 June. ORC CLE staff recapped 6A, gave an overview of the water quality in the Pomahaka, as well as a summary of the group's own network of Schedule 15 water quality sampling sites. Thirty people attended.

- **Kakanui Water Allocation Sub-Committee** (WAC) and the **Kakanui Ratepayers and Improvement Society** (KRAIS) and other stakeholders following the irrigation season on 17 June. Eleven people attended including: Kakanui Water Allocation Committee members Lyndon Strang, Roger Fox, and James McNally; ORC Councillor Doug Brown, James White (ORC), Simon Stevenson (ORC); Rosemary Lucas (DoC); Russell Walker

(KRAIS Chairman), Lucianne White (KRAIS Secretary); Kyle Nelson (Te Runanga o Moeraki); Nicola Holmes (Kakanui Community Landcare Project).

- **AgFirst** farming expo in Alexandra on 26 June. Provided clarity around the rules in 6A regarding leaching rates and submitting overseer data/reports. Fifteen people attended.

- **Diploma of Farm Business Management** course in Clinton on 30 June about the role of central and local government, and their relationship to farm businesses.

- **Landcare Kakanui Community Catchment Project** riparian planting field day at Waiareka Dairy Farm (Craigmore Farm) on 19 May. Approximately 40 people attended including ORC Councillor Doug Brown.

Other

Other stakeholder work has included the following;

- **6A training** for 50 ORC staff, which completes this phase of training of all staff in the rural water quality strategy with the objective of achieving a consistent understanding of our approach, and providing staff with enough knowledge to be ambassadors for our water quality work.

- **External OVERSEER** group met to provide clarity on questions raised by land managers and rural professionals with the objective of ensuring consistent messages from all.

- **AgResearch, Environment Southland and ORC** regular meeting to discuss latest research on sheep impacts on water quality, ORC's farm forestry forum, and the results of the 6A awareness survey.

- **Waitaki Irrigators Collective and North Otago Irrigation Company** MOU meetings.

- **Invermay Deer** focus. This will be a five year programme run by AgResearch with involvement from Deer Industry NZ, Otago Deer Farmers Association, ORC, and NZ Landcare Trust. First field day will be held in August.

- **Federated Farmers, DairyNZ, and Fonterra** met with ORC and proposed the formation of a 'Dairy Working Group' that could provide support and influence to farms identified as being at risk of breaching effluent rules.

- **Rural professionals** met to discuss supporting farmers in North Otago. The meeting was organised by the Otago Rural Support Trust, Federated Farmers, Beef + Lamb NZ and DairyNZ to highlight the support networks available in

North Otago; explain how support can be accessed by and for farmers; and discuss how to identify farmers who may need support.

- The development of a draft recommendation for an **External Stakeholder group**, which will be amended and presented at the next council meeting.

- **Abacus Bio** meeting to explore how we might work together to establish a 'community of capability,' for water quality expertise.

- The next **Waterlines** publication is well underway.

2. Water Quantity

The goal tree and tactics developed for rural water quality has included water quantity.

3. Land, Biodiversity and Biosecurity

Work is in progress for the publication of a plant pest awareness brochure on Old man's beard (*Clematis vitalba*).

4. Air Quality

Nothing to report.

5. Hazard and Risk Mitigation

The New Zealand ShakeOut 2015 event is scheduled for October and our communications team is taking a lead in arranging communications for this across Otago.

Two ORC articles were published in the June edition of Impact, the Civil Defence newsletter. One was on ORC manager natural hazards Michael Goldsmith's visit to Indonesia and the other was about a surge in public interest in earthquakes and the science behind them

6. Regional Land Transport

Nothing to report.

7. Statutory Responsibilities

We completed publication of the draft Regional Policy Statement, which is open for consultation.

Work is in progress for the fees and charges brochure and the separate rates brochure. Customer Services staff will be handling the bulk of all fees and charges and rates enquiries so are developing the resources to support this, such as frequently asked questions and training materials.

8. Customers and Stakeholders

Internal engagement

We are preparing the recruitment and selection process for an internal training position, whose role will include the needs assessment and then development of a suite of internal ORC modules. These modules will be targeted at supporting how we work, make decisions, and treat each other - in short, the sort of culture we want to grow in ORC.

9. Media Communications

Media activity

Over the period we had 142 print media mentions and six broadcast media mentions. Stories covered included rates increases, flooding in Dunedin, high water levels in Lake Wakatipu, Gypsy Day, Lake Dunstan weed, flood scheme costs, Central Otago air quality, snow, wilding pines, and the delay of a proposed stakeholder consultation group..

Nine media releases were issued – topics covered included changes to southern bus routes, the Long Term Plan, water quality drop-in sessions, lake water levels, heavy rainfall updates, the Regional Policy Statement, the Wanaka earthquake, and general earthquake awareness to tie in with this and interest in a report on the Alpine Fault.

Three letters to the editor were responded to over the period. Two were regarding changes to southern bus routes and one was regarding Gold Card bus travel.

Social media

There were 69 posts on Facebook – as at 30 June the ORC Facebook page had 859 likes. Topics included disruptions to Dunedin bus services, the Long Term Plan, earthquake preparedness, water quality drop-in sessions, lake levels, Gypsy Week, bus timetables, and job vacancies.

We sent out 139 Tweets or retweets on topics similar to those featured in media releases and on Facebook – our Twitter account had 408 followers as of June 30.

During the week from 1 June to 7 June, our Facebook page had its highest ever increase in the number of new ‘likes’ – 658 – taking the total number of likes from 172 to 824.

This period coincided with the Dunedin floods. Our Facebook page's total 'reach' for the week – (the total number of people who saw a post) was 25,309 (up from 185 the previous week). The number of people who 'engaged' with our page – ie the number of people who clicked, liked, commented, or shared our posts was 2976 (up from 12 the previous week).

Web development and traffic summary

Updates are made daily to the ORC website. Altogether 135 changes were made during this period.

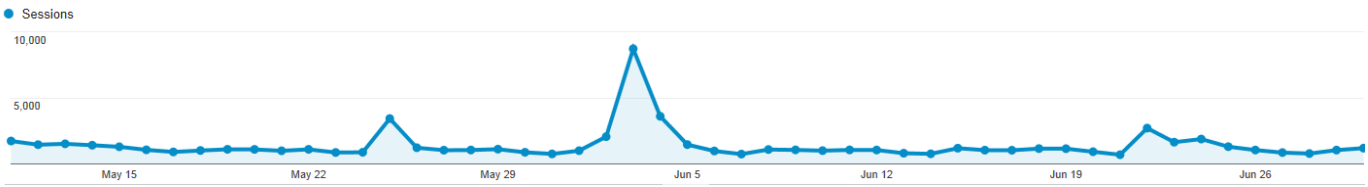
Some important updates made during this period include:

- The Long Term Plan page has been updated to include the adopted Long Term Plan 2015-2025 and the Summary of submissions and decisions made documents.

- The new 2015 Bus timetable has been updated on the website, this includes new maps, timetables and information on the changes to Southern routes.

- The LAWA website has now expanded to include real-time data on river flow, groundwater and rainfall levels. This required a large number of data-import to get this ready for launch.

- With the RPS under review we have set up a social media campaign to try and get people engaged in the RPS and to click through to our website to read the RPS page. Currently we have had 476 views of the RPS page.



Visits to the ORC website

During this period we have had a number of weather events happen – these were the snow-day on 26tMay, flooding on 3d June and severe frost/sleet on 22-23d June.

These events have resulted in a spike of people visiting our website as shown below:

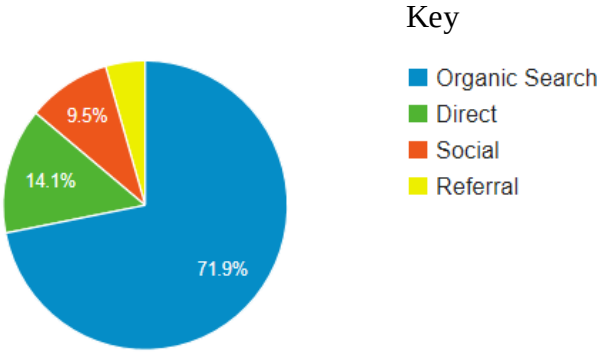
The largest spike shows us that there were 8,690 visits our website on the day of the flooding, compared to our average daily visit of approximately 1000 people.

The top documents which have been downloaded during this period have been: 2014 bus timetable (4,801 downloads), 2015 bus timetable (298 downloads), RPS document (272 downloads) and water quality rules (138 downloads).

Below is some more data about the visits to our website during this period:

Sessions	Users	Pageviews	Pages / Session	Avg. Session Duration
70,019	37,800	190,892	2.73	00:02:33

This graph below shows us how people are getting to our website and indicates a heavy reliance on an organic search. As our social media presence grows we are expecting more people to link to the website from those channels.



Organic Search: Google, Bing.

Direct: Typing website address directly into browser.

Social: They have clicked on a link to our website from social media.

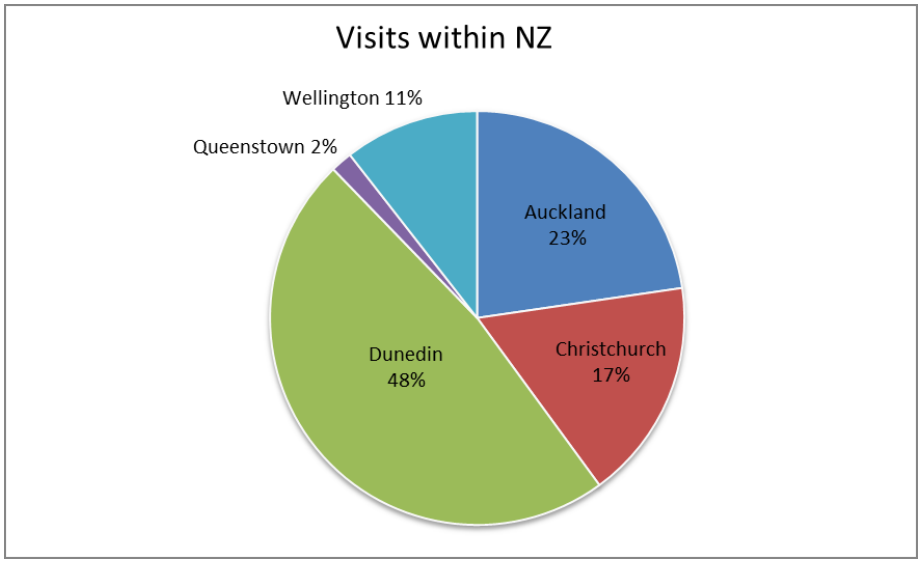
Referral: They have clicked on a link to our website from another website.

The devices used to view our website have changed quite dramatically in the mobile device range if we compare this time period to the same time period last year. This supports our move towards making information compatible for all devices.

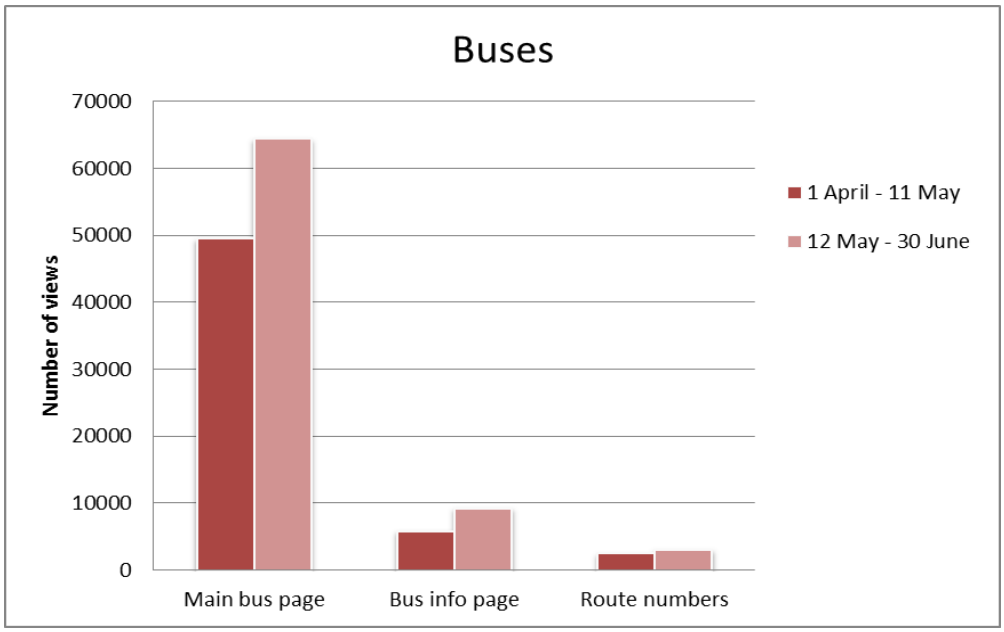
Desktop/laptop (current period): 33,532 visits
Desktop/laptop (2014): 28,641

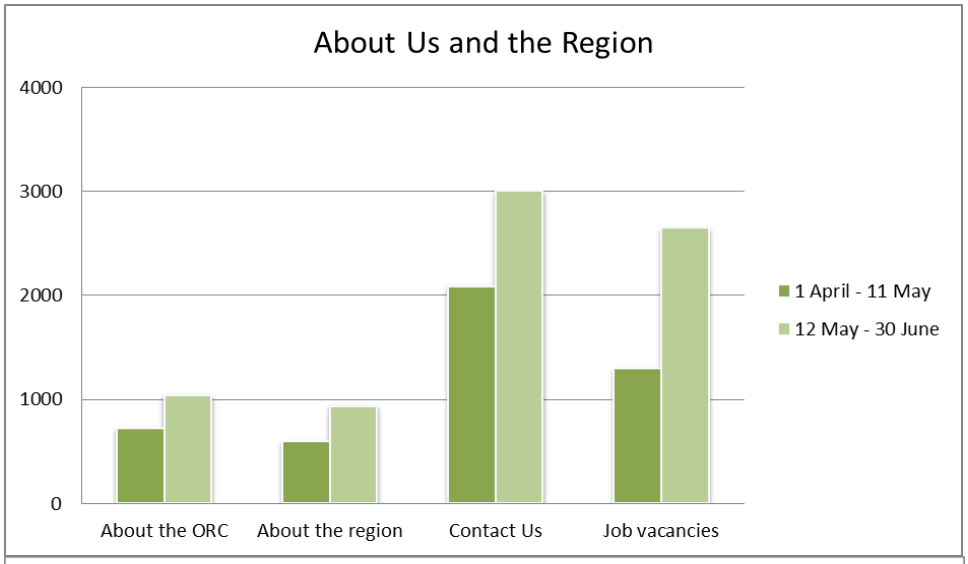
Mobile/tablet (current period): 36,487 visits
Mobile/table (2014): 19,774

During this period there were 66,054 visits to the ORC website from New Zealand, 1,369 from Australia, and 534 from the United States.



Analysis of webpages viewed




About Us and the Region
4000
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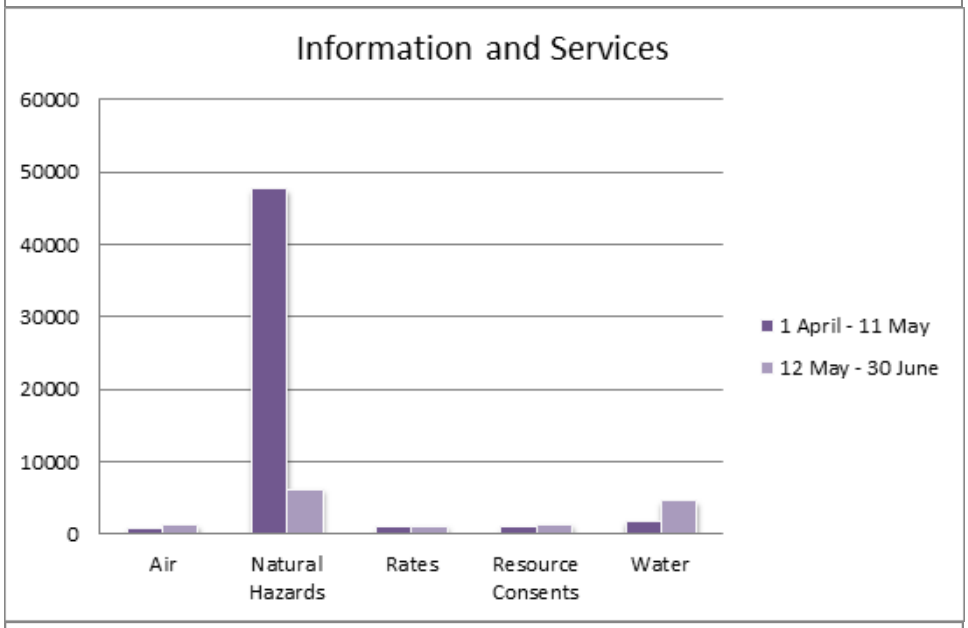
About the ORC
About the region
Contact Us
Job vacancies
1 April - 11 May
12 May - 30 June


Information and Services
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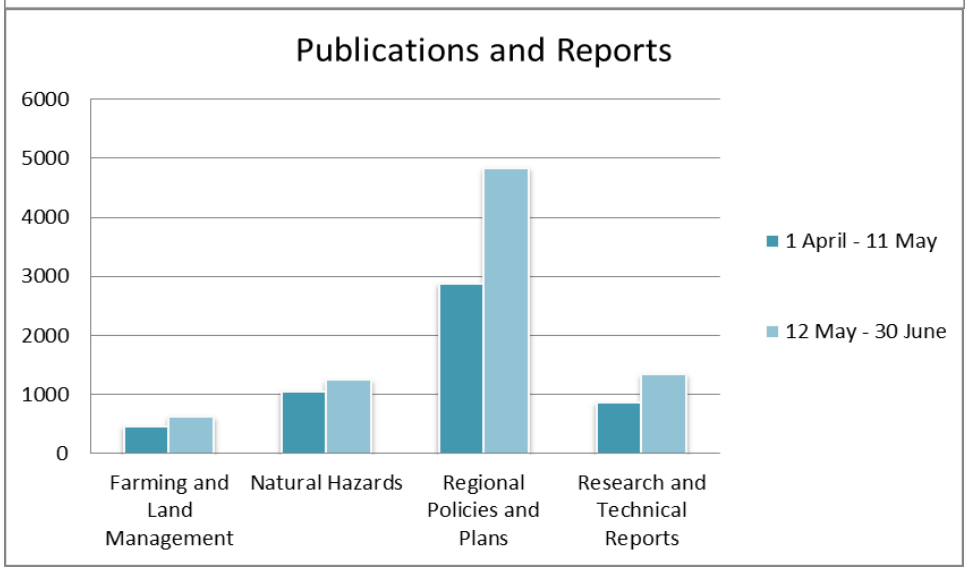
Air
Natural Hazards
Rates
Resource Consents
Water
1 April - 11 May
12 May - 30 June


Publications and Reports
6000
5000
4000
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2000
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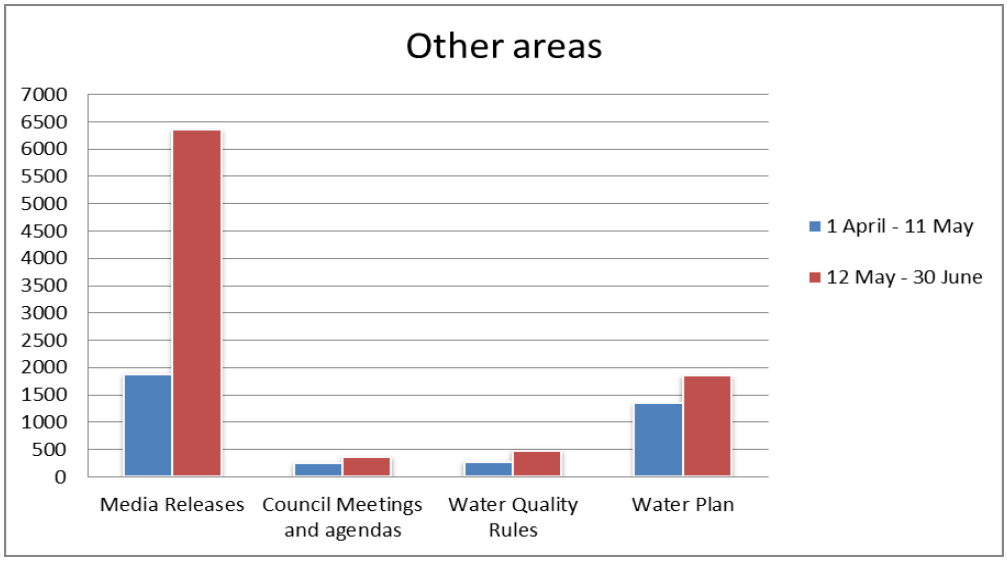
Farming and Land Management
Natural Hazards
Regional Policies and Plans
Research and Technical Reports
1 April - 11 May
12 May - 30 June



10. Recommendation

That this report is noted.

Jane Leahy
Director Stakeholder Engagement

OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Policy Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 22 July 2015 following the Communications Committee meeting

Present: **Cr Gretchen Robertson** (Chairperson)
Cr Michael Deaker (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Gerrard Eckhoff
Cr Gary Kelliher
Cr Trevor Kempton
Cr Sam Neill
Cr Bryan Scott
Cr David Shepherd
Cr Stephen Woodhead

Apologies:

Leave of absence: **Cr Gerrard Eckhoff**

In attendance:

Please note that there is an embargo on agenda items until 8.30 am on Monday 20 July.

CONFIRMATION OF AGENDA

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 3 June 2015, having been circulated, for adoption.

Matters arising from minutes

Otago Regional Council

PART A – RECOMMENDATIONS

Item 1
2015/0843 **Notification of Proposed Plan Change 5A (Lindis: Integrated water management).** DPPRM, 2/7/15

The report recommends the notification of the Proposed Plan Change 5A (Lindis: Integrated water management) to the Regional Plan: Water for Otago (Water Plan). Circulated with the report are: Attachment 1 - Overview of written comments on the Consultation Draft of Proposed Plan Change 5A; Attachment 2 - Proposed Plan Change 5A, with Lindis and Bendigo/Tarras maps; Attachment 3 – Section 32 Evaluation Report; Attachment 4 – Guide for preparing a resource consent application to take surface water, including a replacing a deemed permit.

Item 2
2015/1031 **Proposed National Environmental Standard for Plantation Forestry.** DPPRM, 8/7/15

The report presents the Proposed National Environmental Standard for Plantation Forestry and recommends that Council prepare a submission that supports greater national consistency for managing the effects of activities to achieve good environmental, economic and community outcomes, but opposes the proposed standard.

PART B - FOR NOTING

Item 3
2015/1015 **Director's Report on Progress.** DPPRM, 10/7/15

The report gives an overview of significant activities undertaken by the Policy section since the last meeting of the Policy Committee.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Policy Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 3 June 2015 commencing at 12.50 pm

Present:	**Cr Gretchen Robertson** (Chairperson) **Cr Michael Deaker** (Deputy Chairperson) **Cr Graeme Bell** **Cr Doug Brown** **Cr Gerrard Eckhoff** **Cr Gary Kelliher** **Cr Trevor Kempton** **Cr Sam Neill** **Cr Bryan Scott** **Cr David Shepherd** **Cr Stephen Woodhead**
Leave of absence:	**Cr Louise Croot**
In attendance:	**Peter Bodeker** **Wayne Scott** **Jane Leahy** **Fraser McRae** **Gavin Palmer** **Janet Favel**

CONFIRMATION OF AGENDA

There were no changes to the agenda.

MINUTES

The minutes of the meeting held on 22 April 2015, having been circulated, were adopted on the motion of Crs Shepherd and Deaker.

Matters arising from minutes

FOR NOTING

Item 1
2015/0953 **Director's Report on Progress.** DPPRM, 22/5/15

The report gave an overview of significant activities undertaken by the Policy section.

The meeting commended the work by staff in completing and promulgating the RPS.

Cr Robertson moved
Cr Scott seconded

That the report be noted.

Motion carried

The meeting closed at 12.52 pm.

Chairperson

Otago Regional Council

REPORT

Document Id: A756318

Report Number: 2015/0843
Prepared For: Policy Committee
Prepared By: Tom De Pelsemaeker, Senior Policy Analyst
Date: 2 July 2015

Subject: **Notification of Proposed Plan Change 5A (Lindis: Integrated water management)**

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1. Précis

This report recommends the notification of the Proposed Plan Change 5A (Lindis: Integrated water management) to the Regional Plan: Water for Otago (Water Plan). The proposed plan change seeks to:

- Set a management regime (allocation limits and minimum flow) for surface water and connected groundwater in the Lindis catchment;
- Set maximum allocation limits and take restrictions for specified aquifers within the Bendigo-Tarras Basin (Ardour Valley, Bendigo, and Lower Tarras aquifers);
- Map the minimum flow catchment boundaries and monitoring site associated with the Lindis River in the B-series of the Water Plan maps; and
- Map the boundaries of the Lower Tarras, Ardgour Valley, Bendigo and Lindis Alluvial Ribbon aquifers in the C-series of the Water Plan maps.

2. Background

The development of Plan Change 5A (Lindis: Integrated water management) follows a series of six community workshops held at Tarras between February 2009 and April 2015.

After the fifth community workshop in April 2014, a Consultation Draft of the proposed plan change was released for comment under Clause 3, Schedule 1 of the Resource Management Act 1991 (RMA) (ORC Report 2014/0764).

3. Comments overview

Twenty-four individuals and organisations provided written comments on the Consultation Draft. The written comments, attached as Attachment 1, expressed a wide range of views and are summarised below.

Those in favour of a lower minimum flow stated that the management regime proposal included in the Consultation Draft was based on outdated information and would have a significant bearing on the local and regional economy.

Others advocating for a higher minimum flow argued that the Consultation Draft proposal did not give effect to the National Policy Statement for Freshwater Management 2014 and would not result in a meaningful improvement to instream, cultural, recreational and natural character values associated with the river.

Other comments that were made on the Consultation Draft included:

- the need for more robust information,
- the need for amendments to the catchment and aquifer boundaries,
- the need to postpone the plan change process until after the replacement of all deemed permits with resource consents.

4. Further investigations and consultation

Following the receipt of feedback on the 2014 Consultation Draft, additional investigations were completed:

- In the period 2012/2014 ORC carried out a hydrological study of the Lindis River catchment. This study was completed in mid-2014, and as a result of this study, the river's mean annual low flow (MALF) was revised to 1,864 litres/per second (l/s), which is higher than the previous estimate of 1,600 l/s.

- In response to the feedback on the Consultation Draft, Council engaged BERL and OPUS in December 2014 to undertake a study on the economic impacts of various minimum flow scenarios. The economic analysis study showed that the dry environmental conditions in the Lindis catchment have a greater impact on the availability of water for irrigation, and therefore on the local and wider economy irrigation, than a minimum flow restriction. The study also showed that the impacts of a minimum flow restriction would be relatively small in an average year and could be offset by the use of more efficient irrigation systems.

- In late 2014, ORC commissioned NIWA to review the scientific investigations undertaken by ORC. The review showed that the ecological, hydrological and morphological information was robust, but that the choice of minimum flow and allocation could be further refined by quantifying the surface water losses to groundwater and an assessment of a flushing regime.

- In January 2015, ORC staff undertook further monitoring to quantify the rate of surface flow losses to groundwater. The monitoring showed that flow losses between the Ardgour Rd monitoring site and the Clutha confluence were around 550 l/s, rather than the previous estimate of 440 l/s measured in 2007/2008. The increase in the rate of flow losses to groundwater is likely to be caused by a combination of changes to the groundwater level and changes to the bed armouring and permeability of the river.

In the months April to June 2015, ORC staff regularly met with representatives of the local farming community to discuss outstanding concerns and provide greater clarity around the implementation of the proposed minimum flow, the replacement of deemed permits with resource consents issued under the RMA, and the ability of the Water Plan to accommodate the need for a transitional period.

In June 2015, a separate plan change appeal relating to the Cromwell Terrace Aquifer was resolved. This introduced restrictions over the winter months to groundwater takes for irrigation. The Bendigo and Lower Tarras aquifers are similarly connected to the Clutha River/Mata-Au, and warrant similar provisions to sustain hydro-electric power generation values.

5. Proposal

The proposal has been amended, taking into consideration the comments that were received on the Consultation Draft, further discussions with the stakeholders and research undertaken since the release of this document. The proposed amendments:

1. Set the minimum flow for the period 1 October – 31 May at 750 l/s;

2. Exclude the Tarras Creek sub-catchment from the Lindis River catchment; and

3. Restrict the taking of groundwater from the Bendigo and Lower Tarras aquifers for the purpose of irrigation between 1 May and 31 August.

An overview of the proposed minimum flows and allocation limits for various water bodies in the Lindis catchment and the Bendigo-Tarras Basin is shown in the two tables following.

Surface water management regime:
Lindis catchment (excluding Tarras) & alluvial aquifer

Primary allocation limit	1,000 l/s
Primary allocation minimum flow	750 l/s (October to May) 1,600 l/s (June to September)
Supplementary allocation blocks	500 l/s
Supplementary allocation minimum flow	2,200 l/s (May to November) 1st block 1,600 l/s (December to April) 1st block 2,700 l/s (May to November) 2nd block 2,100 l/s (December to April) 2nd block
Lindis Alluvial Ribbon Aquifer, including the Lower Lindis Alluvial Fan Zone.	Managed as surface water, above

Groundwater management regime:
Ardgour Valley, Bendigo & Lower Tarras

Aquifer	**Maximum Allocation Limit**	**Irrigation Take Restriction**
Ardgour Valley	0.19 Mm^3/yr	Not applicable
Bendigo	29.00 Mm^3/yr	No groundwater is taken for the purpose of irrigation between 1 May to 31 August
Lower Tarras	18.80 Mm^3/yr	No groundwater is taken for the purpose of irrigation between 1 May to 31 August

The proposed plan change, which is attached as Attachment 2, should have immediate legal effect from notification, in accordance with Section 86B(3) of the RMA.

6. Section 32 Evaluation Report

Before a plan change is notified, the Council must evaluate the alternatives, benefits and costs, as required by Section 32 of the RMA. Proposed Plan Change 5A (Lindis: Integrated water management) is the preferred approach to achieve the sustainable management of water allocation in the catchment. The Section 32 Evaluation Report is attached as Attachment 3.

All material referenced in the Section 32 Evaluation Report will be made available online, along with a Guide to 'Preparing a resource consent application to take surface water, including replacing a deemed permit', which was requested by the local farming community, and is attached as Attachment 4.

7. Next steps

The timeline below sets out the next steps in the plan change process:

Action	**Date**
Council approve public notification of Proposed Plan Change 5A (Lindis: Integrated water management)	Wednesday 5 August 2015
Public notification of proposed plan change	Saturday 8 August 2015
Submissions close	Friday 4 September 2015
Public notification of decisions requested and call for further submissions	September 2015
Further submissions close	October 2015
Hold hearings	November 2015
Council decision	Early 2016

8. Recommendations

1. That Proposed Plan Change 5A (Lindis: Integrated water management) and its accompanying Section 32 Evaluation Report be approved for notification in accordance with Clause 5, Schedule 1 of the RMA.
2. That Proposed Plan Change 5A (Lindis: Integrated water management) be publicly notified on Saturday 8 August 2015.
3. That Proposed Plan Change 5A (Lindis: Integrated water management) will have immediate legal effect upon notification.

Fraser McRae
Director Policy, Planning and Resource Management

REPORT

Document Id: A806521

Report Number: 2015/1031
Prepared For: Policy Committee
Prepared By: Manager Policy, Dale Meredith
Date: 8 July 2015

Subject: **Proposed National Environmental Standard for Plantation Forestry**

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1. Précis

This report presents the Proposed National Environmental Standard for Plantation Forestry (Proposed NESPF) and recommends Otago Regional Council prepare a submission that supports greater national consistency for managing the effects of activities to achieve good environmental, economic and community outcomes, but opposes the proposed standard.

2. Background

The Proposed NESPF has been released for consultation by the Ministries for the Environment and Primary Industries. Submissions close on 11 August 2015.

The proposal is promoted as providing a nationally consistent approach to plantation forestry that is responsive to local environments. It identifies two key regulatory issues: uncertainty and inconsistency. If implemented, the NESPF would replace existing regional and district plan rules for managing plantation forestry and its effects.

A series of public meetings and hui are being held as part of the consultation, with the nearest public meeting being held at Telford on Tuesday 28 July 2015, and the forestry hui at Invercargill on the same day.

In 2011, Council submitted on the precursor to this proposal. In that submission, Council considered that proposal was fundamentally flawed, being counter to the effects and activity-neutral basis of the Resource Management Act 1991 (RMA), and requested that it be withdrawn.

3. Implications for Otago

This proposal attempts to address some of the concerns raised by Council, for example by:

- enabling some situations where local provisions could be more stringent, including for areas of outstanding landscape;
- dismissing the permitted baseline impact, by considering the NES as being equivalent to a resource consent, and therefore not included in permitted baseline assessments;
- using fish spawning indicators to reduce impacts on aquatic ecosystems;
- introducing a wilding conifer calculator to address concerns of wilding species spread;
- recognising the impact of forestry on water yield within a catchment.

Notwithstanding, this proposal still retains many of the fundamental flaws and introduces some new issues, including:

- Persisting in duplicating the requirement for land use controls on plantation forestry for both regional and city/district councils;
- Persisting in not addressing the actual effects of forestry activities on the environment. Rather, modelling approaches (erosion susceptibility; fish spawning indicator) and the use of forestry management plans are preferred;
- Persisting in use of permitted activity standards that lack certainty and may be ultra vires. This includes the use of forestry management plans as part of a permitted activity approach, when there is no indication by whom or how these are approved;
- Failing to address persistent adverse effects of forestry activities on the environment, such as for non-migratory galaxiids and on shallow lakes and estuaries;
- Failing to address monitoring issues effectively;
- Failing to recognise the additional costs forced onto regional councils to monitor forest management plans (up to four times annually);
- Failing to identify how councils can take compliance action against breaches of the proposal, including when the forest management plan practices generate adverse environmental effects;
- Failing to address reasonably foreseeable situations. For example, forest management plans do not have to address extreme weather conditions (which are not defined), councils (and community) must accept any environmental damage resulting from such events;
- Failing to demonstrate that the proposed standards satisfy the requirements of the RMA regarding avoidance of gross effects;
- Failing to clarify how 'out of scope' matters will relate to plantation forestry. For example, effects that arise from forestry activities on natural hazards, water yield and infrastructure are not addressed, resulting in uncertainty for plan administration.

A submission is being prepared which recognises the benefits of having a more consistent, effects-based approach to environmental management across New Zealand, and will develop the issues for Otago in more detail. It is likely that it will recommend withdrawal of this proposal.

4. Recommendations

(1) That Council prepare a submission on the Proposed National Environmental Standard for Plantation Forestry.

(2) That Councillors and staff finalise a Council submission

Fraser McRae
Director Policy, Planning and Resource Management

Otago Regional Council

REPORT

Document Id: A803650

Report Number: 2015/1015
Prepared For: Policy Committee
Prepared By: Director Policy, Planning and Resource Management
Date: 10 July 2015

Subject: **Directors Report on Progress**

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1. Policy Responses

1.1 Responses: National Policies, Strategies and Plans

In the seven week period ending 10 July 2015, the following were received:

Agency	Number Received	Details
Department of Internal Affairs	1	Fire Services Review
Ministry for the Environment/Ministry Primary Industries	1	National Environmental Standard: Plantation Forestry Consultation Document

The following responses were made over the seven week period:

Proposal	Response Type	Issues
Statistics New Zealand	Submission	Advocate for data collection of importance to informing local government strategy, policy and plans.

A submission is being drafted on the Proposed NES for Plantation Forestry. A separate report to this Committee presents the main issues.

1.2 Responses: Territorial Authority and Regional Authority Plan Changes and Resource Consent Applications

In the seven weeks ending 10 July 2015, the following were received:

Agency	Number Received	Document
Queenstown Lakes District Council	3	Consent applications
Dunedin City Council	1	Consent applications

1.3 Appeal: Clutha District Council Proposed Plan Change 28 (Natural Hazards)

Council has appealed Clutha District Council's (CDC) decision on Proposed Plan Change 28 (Natural Hazards) relating to provisions for dwellings and buildings that accommodate people in Area 4B: Tokomairiro Plain floodway corridors.

Mediation was held with other parties to the appeal on 29 May 2015. Agreement was reached with Clutha District Council to classify residential structures within critical areas of the floodway corridors as discretionary activities. Options resulting from that site meeting are being considered by the land owner concerned. An update on all parties' positions is due back to the Environment Court on 17 July 2015

2. ORC: Policy, Plans and Strategies

2.1 Review of Regional Policy Statement

The Proposed Regional Policy Statement for Otago was publicly notified on Saturday 23 May 2015. To date, 29 submissions have been received.

Submissions close on Friday 24 July 2015.

2.2 Appeals on proposed plan changes

Proposed Plan Change 4B (Groundwater Allocation)
An appeal from Oceana Gold Limited was received on Proposed Plan Change 4B (Groundwater allocation). Oceana Gold sought to have mine pit dewatering excluded from the definition of consumptive takes of groundwater.

This appeal has now been resolved, and signed by the Environment Court. The resolution enables allocation from hardrock formations. A separate report to Council will be presented to make this plan change operative.

Proposed Plan Change 4C (Groundwater Management: Cromwell Terrace Aquifer)
An appeal from Contact Energy Ltd was received on Proposed Plan Change 4C (Groundwater management: Cromwell Terrace Aquifer). Contact Energy sought to restrict irrigation takes from the aquifer over winter and some part of autumn and spring, as well as when Lake Hawea is low and inflows into the upper Clutha catchment are low.

This appeal has now been resolved, and signed by the Environment Court. The resolution constrains takes for winter irrigation. A separate report to Council will be presented to make this plan change operative.

As a result of this appeal, Proposed Plan Change 5A (Lindis: Integrated water management) is proposed to be amended, adding additional controls to takes from groundwater connected to the Clutha River/Mata-Au, restricting irrigation takes between May and August. This will affect the Bendigo and Lower Tarras Aquifers.

3. Recommendation

That this report is noted.

Fraser McRae
Director Policy Planning and Resource Management