

Flood management in the Taieri and Clutha catchments

Jean-Luc Payan
Manager Natural Hazards

West Taieri 23rd July 2017 afternoon

Otago Regional Council
www.orc.govt.nz

FLOOD HAZARD AWARENESS

Natural Hazards on the Taieri Plains, Otago

Learning to Live with Flooding:
A Flood Risk Management Strategy for the communities of Lakes Wakatipu and Wanaka

Otago Regional Council
QUENTOWN LAKES DISTRICT COUNCIL

SECOND GENERATION PLAN
A NEW DISTRICT PLAN FOR DUNEDIN
WWW.DUNEDIN.COUNCIL.NZ

HazardInfo

Parcel Info
Floodings
Seismic (EQ) Liquefaction
Seismic - Ground Class
Stormsurge Affected Area
Tsunami Affected Area
Photographs

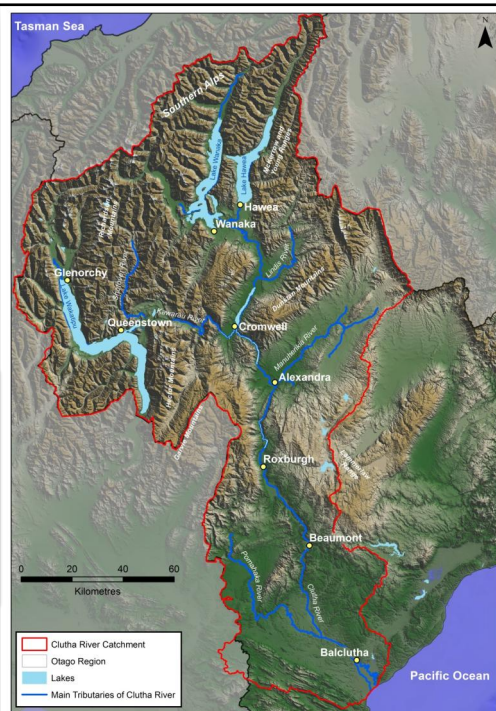
Emergency Management Otago
Get HOME ready Get WORK ready Get SCHOOL ready

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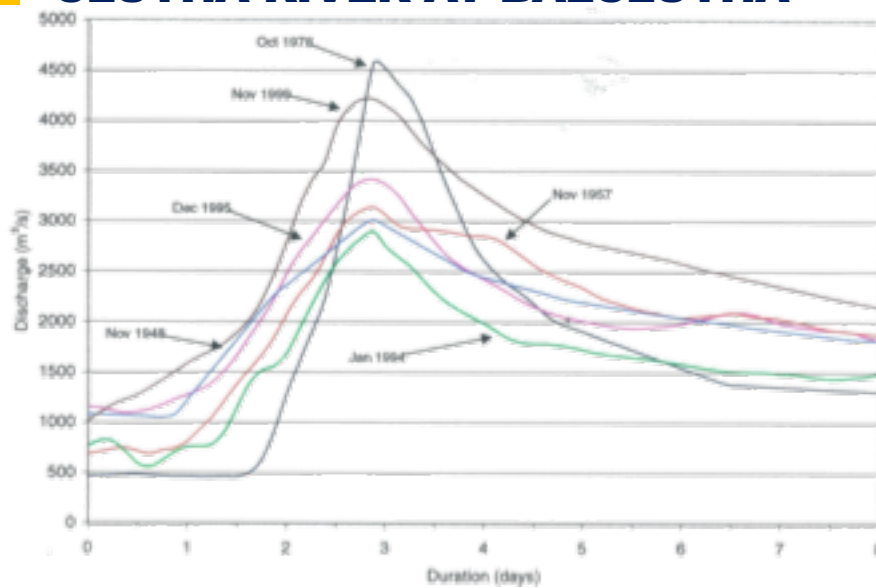
CLUTHA RIVER CATCHMENT

Catchment area:
 $\approx 22,000 \text{ km}^2$

Estimated flood travel time to Balclutha from:	Time
Clyde	19-20 hours
Below Roxburgh	15 hours
Millers Flat	12 hours

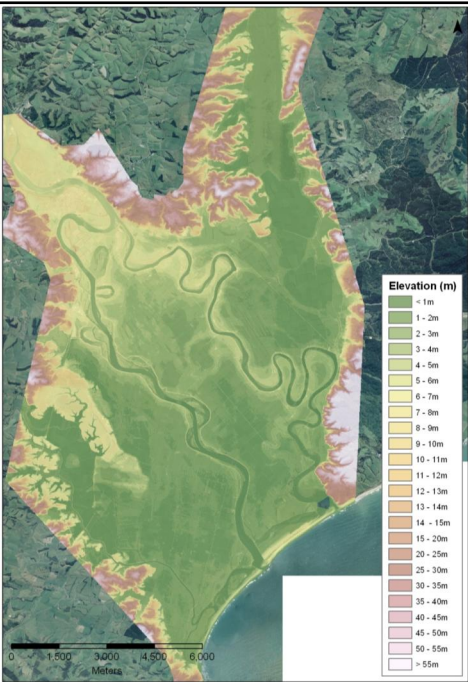


CLUTHA RIVER AT BALCLUTHA



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CLUTHA DELTA TOPOGRAPHY



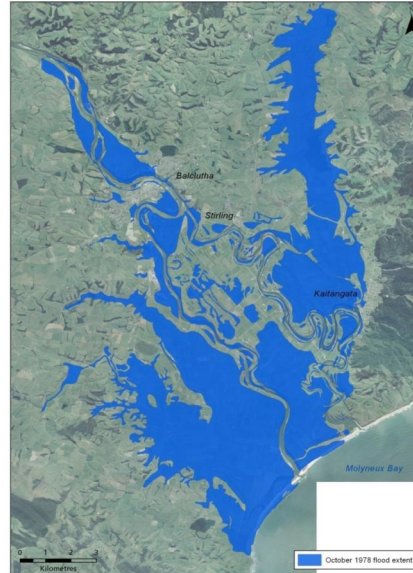
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SEPTEMBER 1878 FLOOD (5600m³/s)



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OCTOBER 1978 FLOOD (4580m³/s)



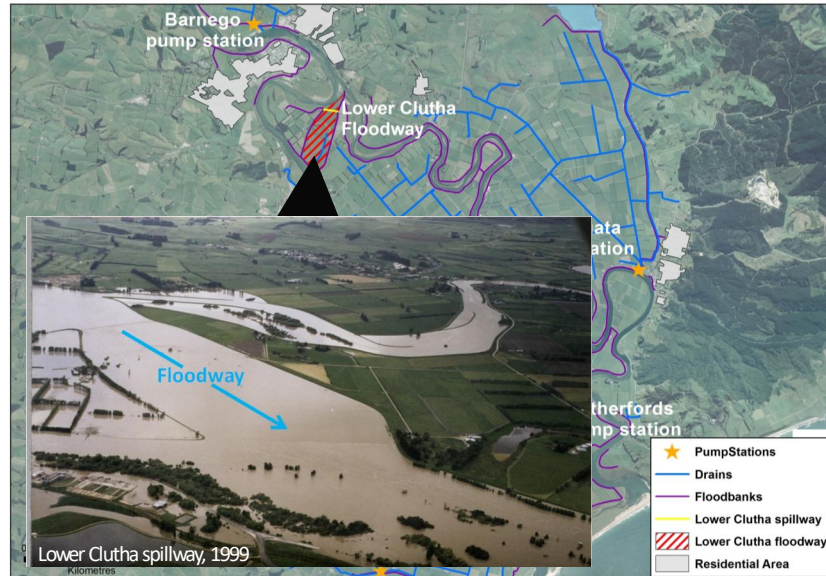
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NOVEMBER 1999 FLOOD (4160m³/s)



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LOWER CLUTHA FLOOD PROTECTION SCHEME



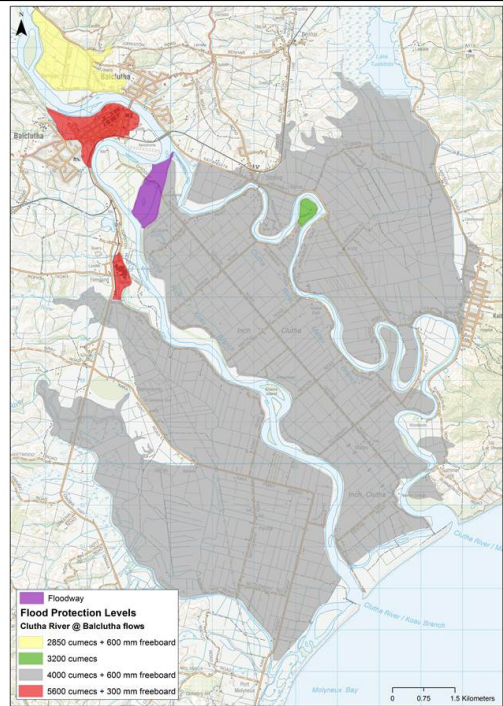
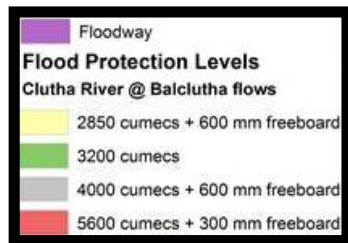
9

LOWER CLUTHA FLOOD PROTECTION SCHEME



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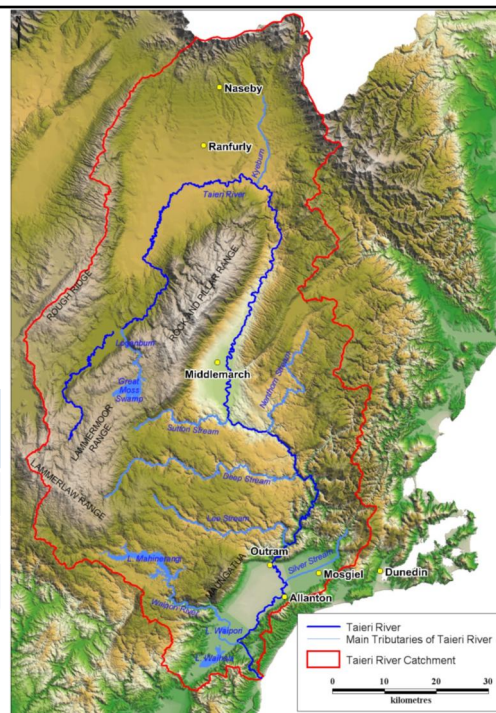
LOWER CLUTHA FLOOD PROTECTION SCHEME



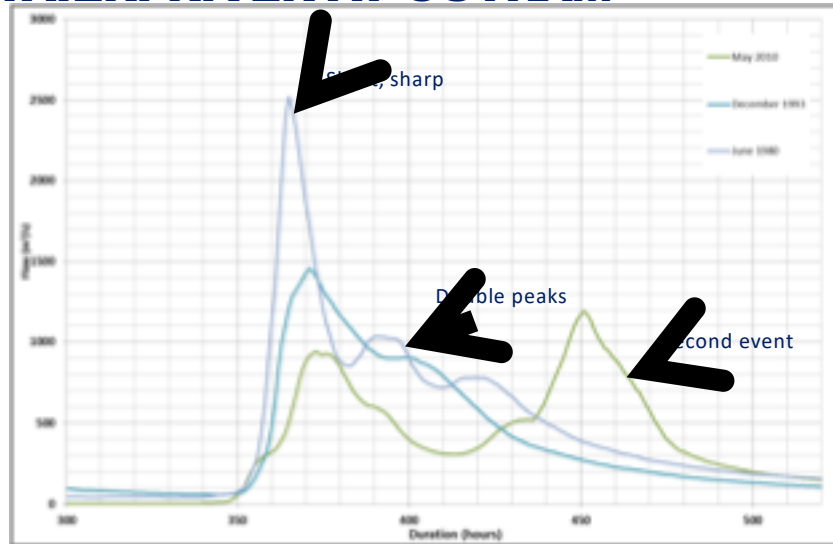
TAIERI RIVER CATCHMENT

Catchment area:
 $\approx 5,600 \text{ km}^2$

Estimated Flood Travel Time to Outram from:	Time
Canadian Flat	96 hours
Waipiata	25 hours
Sutton	9 hours

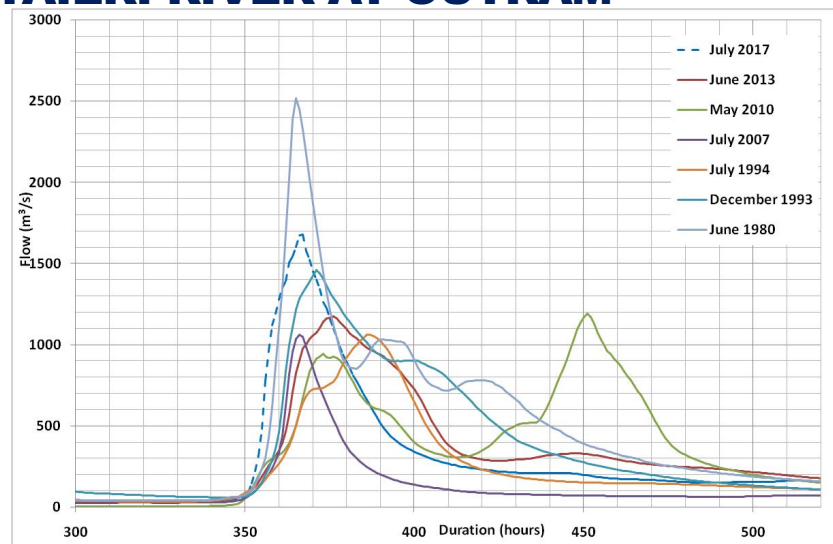


TAIERI RIVER AT OUTRAM



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TAIERI RIVER AT OUTRAM

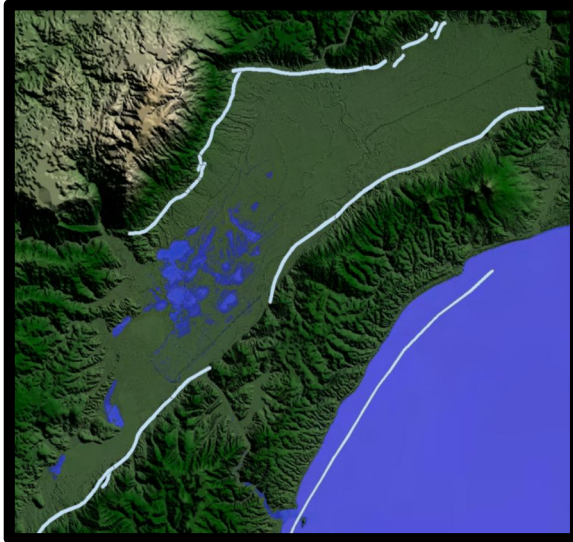


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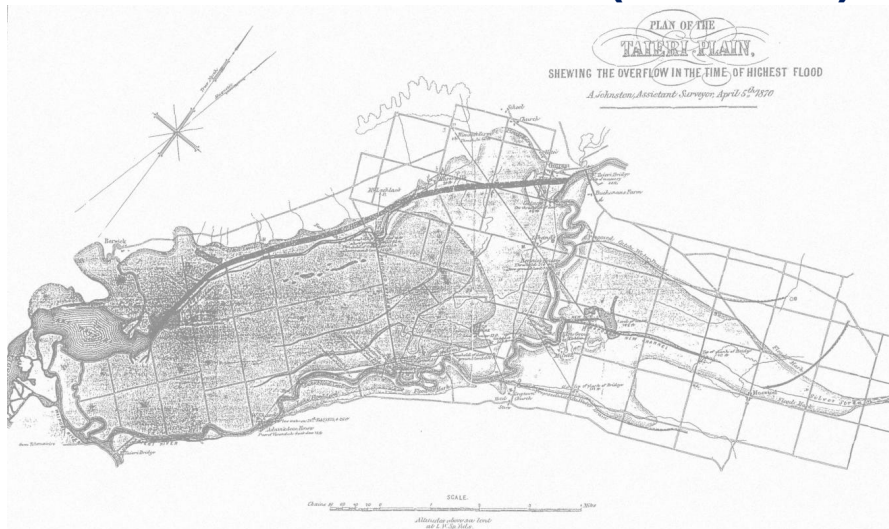
TAIERI PLAIN TOPOGRAPHY

Dr. David Munro, politician and speaker of the House of Representatives (1844):

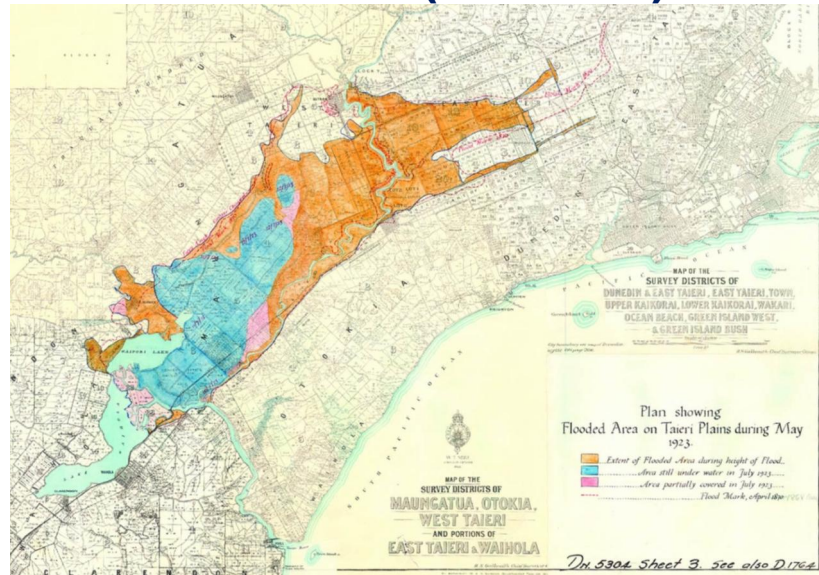
“the two lower thirds can hardly be called ‘terra firma’, being in fact, an immense grass – tree swamp, through which canals of black sluggish water wind ... interspersed with stagnant lagoons ... its level is not above that of the sea”



FEBRUARY 1868 FLOOD (2200m³/s)

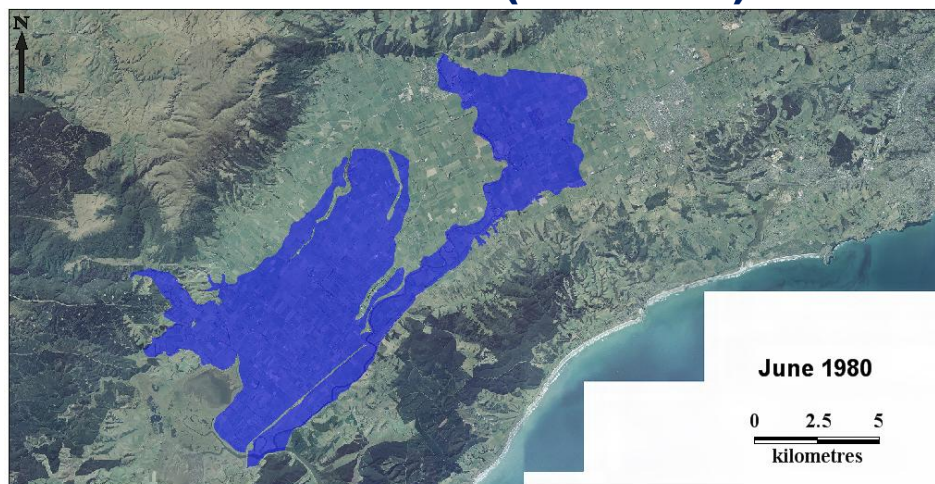


MAY 1923 FLOOD (1750m³/s)



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JUNE 1980 FLOOD (2500m³/s)



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JUNE 1980 FLOOD (2500m³/s)



Taieri Plain, June 1980

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JUNE 1980 FLOOD (2500m³/s)



Outram Bridge, June 1980

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JULY 2017 FLOOD (1700m³/s)



Outram Bridge, July 2017

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JULY 2017 FLOOD (1700m³/s)



Henley floodway July 2017

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LOWER TAIERI FLOOD PROTECTION SCHEME



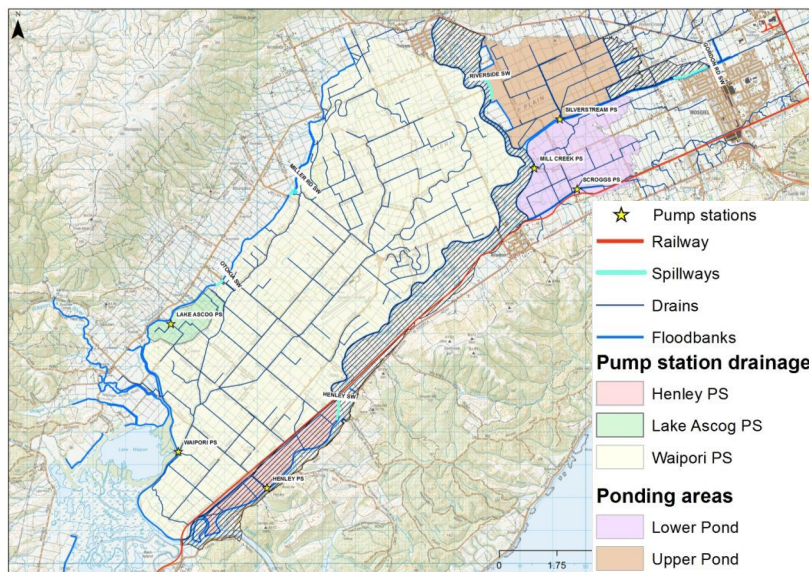
Floodbank construction, early 1900s



Floodbank construction, January 1987

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LOWER TAIERI FLOOD PROTECTION SCHEME



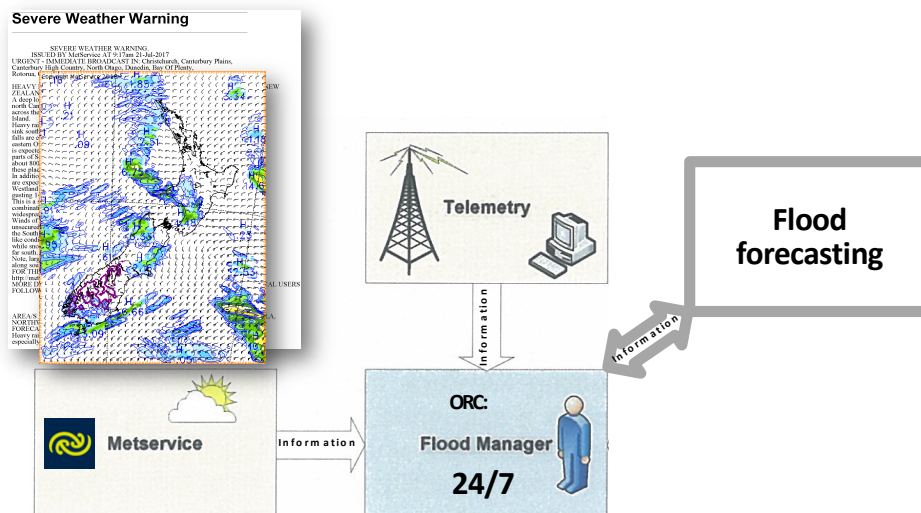
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LOWER TAIERI FLOOD PROTECTION SCHEME



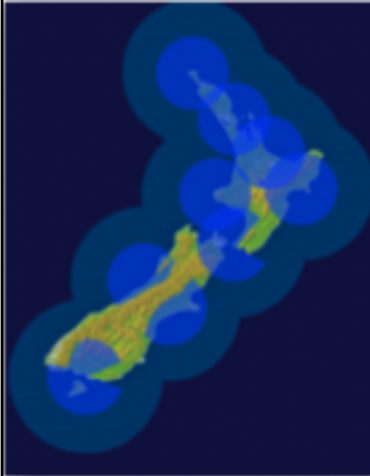
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FLOOD MANAGEMENT AND WARNING



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WEATHER RADAR



This is a picture of MetService's Bay of Plenty Radar being installed.

Dome

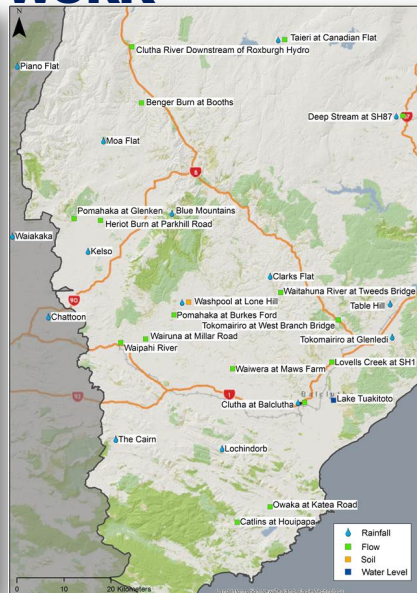
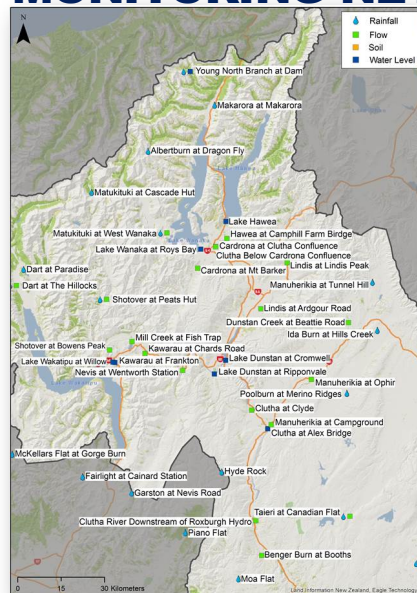
Dish

Towers

Images and photos: MetService

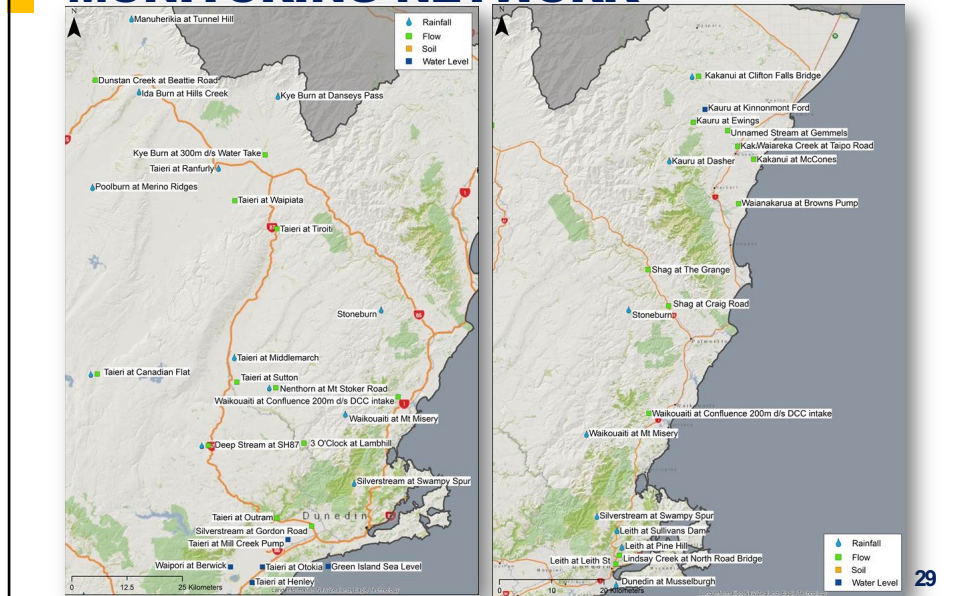
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MONITORING NETWORK

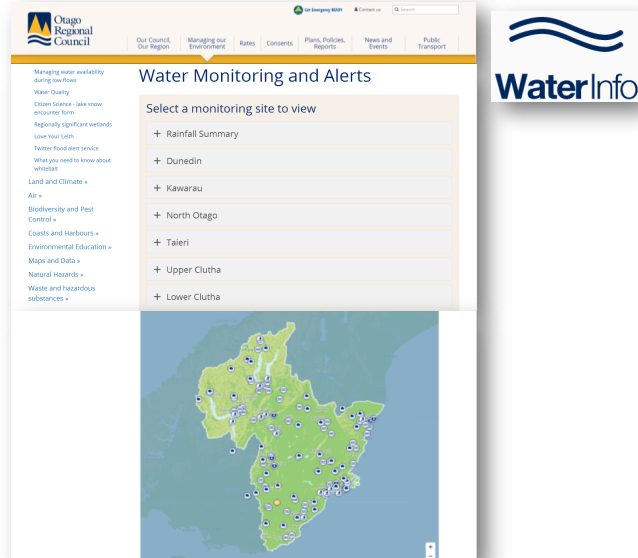


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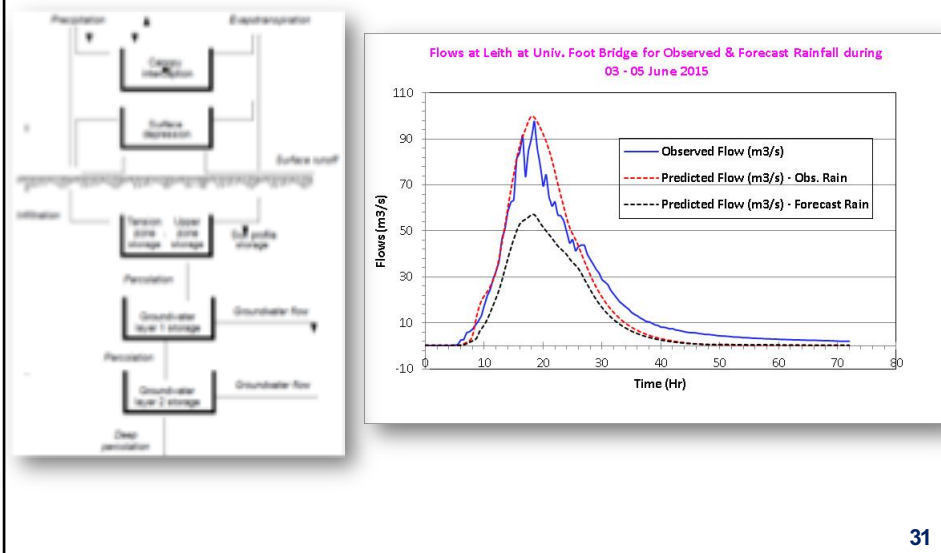
MONITORING NETWORK



MONITORING NETWORK

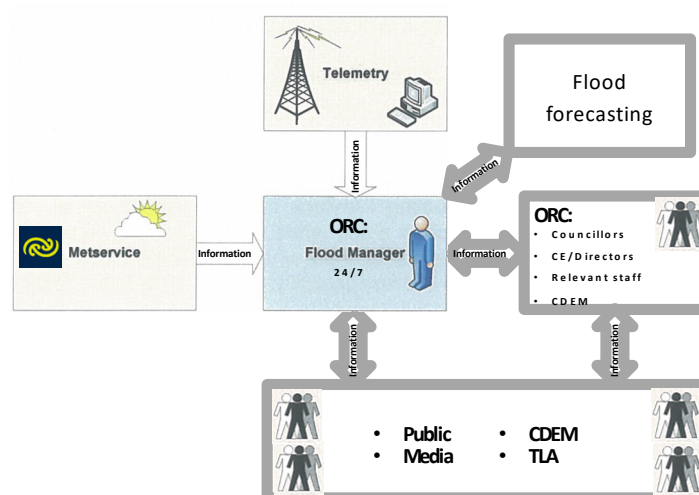


FLOOD FORECASTING MODELS



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FLOOD MANAGEMENT AND WARNING



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FLOOD MANAGEMENT AND WARNING



Flood Advisory

June 3 2015 12.30pm

Heavy rainfall in Dunedin

Heavy rainfall is expected to continue around Dunedin city until early Thursday morning. In particular the Water of Leith, Lindsay Creek, and Silver Stream catchments are likely to be affected.

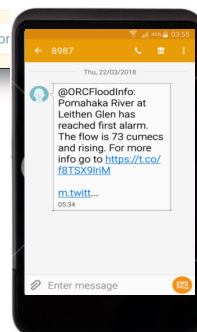
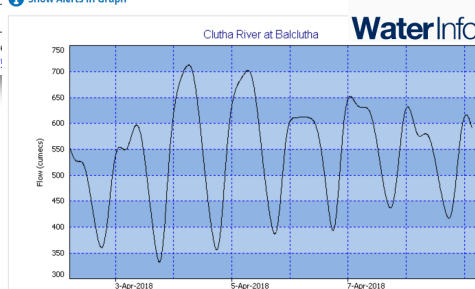
The Water of Leith runoff and ponding is expected to continue until early Thursday morning.

ORC will continue to monitor the situation and will provide further advice as it becomes available.

For more information you can receive Alerts page at: [Alerts page at: https://www.otago.govt.nz/alerts](#)

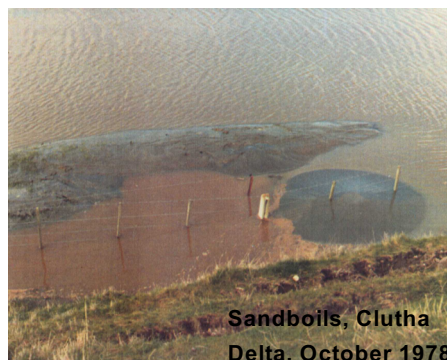
Last 7 days flow in cumecs

[Show Alerts in Graph](#)



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FLOOD MANAGEMENT AND WARNING



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FLOOD MANAGEMENT AND WARNING



Heli-gauging flood flows
July 2017



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THANK YOU



Water of Leith



Water of Leith, June 2015



Dunedin Airport, June 1980

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