



**Report**                    **06.544**  
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**Committee**            **Rural Services and Wairarapa**  
**Authors**               **Laura Watts, Hydrologist**

## **Review of Greater Wellington's hydrological monitoring network**

### **1. Purpose**

To inform the Committee of the completion of a review of Greater Wellington's hydrological monitoring network.

### **2. Significance of the decision**

The matters for decision in this report **do not** trigger the significance policy of the Council or otherwise trigger section 76(3)(b) of the Local Government Act 2002.

### **3. Background to the review**

The Environmental Monitoring and Investigations Department operates a hydrological monitoring network to provide information about water quantity in the Wellington region. The review was of the permanent stations where these variables are measured, specifically:

- Automatic and storage rainfall monitoring stations;
- Climate and soil moisture monitoring stations;
- Automatic river level and flow monitoring stations;
- Automatic lake and wetland level monitoring stations;
- Automatic tide monitoring stations; and
- Automatic and manually dipped groundwater level monitoring sites.

Now that we have one department responsible for hydrological monitoring it is an appropriate time to review the hydrological network. This is the first review to consider the networks operated by the Wellington and Masterton offices together, and the first review that addresses surface water and groundwater at

the same time, therefore ensuring that we have a holistic, regional approach to hydrological monitoring.

It is vital that we review our monitoring networks periodically, to ensure that we are collecting appropriate information to enable us to manage water resources of the region in a sustainable manner, and provide warning of flood hazards. Reviews also ensure that hydrological information is being collected in the most efficient, cost-effective way, and that the network is strategically designed. A strategic hydrological monitoring network has the following aspects:

- Monitoring stations are located at the most appropriate locations so that the intended purpose is achieved;
- Hydrological resources which are considered significant or are particularly sensitive are monitored;
- Future data requirements are anticipated;
- Linkages with other Greater Wellington monitoring programmes (water quality, soil quality, air quality) are achieved; and,
- Single monitoring stations achieve several monitoring objectives wherever possible.

Other attributes that were considered during the review of the network included: spatial coverage of the region, data continuity and quality, and cost-effectiveness of the existing monitoring stations.

#### **4. Network review recommendations**

The review resulted in a considerable number of specific recommendations for changes to, and maintaining, the rainfall, climate, tide, river flow, lake and wetland level and groundwater level monitoring networks. The major network changes recommended by this review relate to ensuring monitoring stations are located in the most strategic locations so that Greater Wellington's environmental monitoring objectives are achieved to a high standard, and so that linkages between the programmes are enhanced. The recommendations were ranked with priorities of low (to be implemented in the 5 – 7 year timeframe), medium (to be implemented in the 2 – 5 year timeframe) or high (to be implemented within the next 2 years).

**High priority was assigned to maintaining the current hydrological monitoring network.**

Most of the other high priority recommendations from the review are shown in the table below. Note that these are not listed in any particular order and have not been ranked in any way. High priority recommendations which require limited or no additional resources (over and above those already committed) are not shown in the table. Recommendations assigned medium or low priority rankings can be found in the full network review report.

High priority recommendation	Monitoring objectives / data purpose:					
	State of Environment	Floodwarning	Significant or sensitive resources	Consent compliance	Farm information reporting	Enhancing linkages with other programmes
New rainfall stations at:						
Upper Waipoua	✓	✓ (Primary)				
Upper Kopuaranga		✓ (Primary)			✓	
Longbush valley (including soil monitoring)	✓	✓ (Primary)			✓	
Mid Ruamahanga valley (including soil monitoring)	✓	✓ (Primary)			✓	
Carterton west (including soil monitoring)		✓			✓	✓ (Primary)
Paekakariki	✓ (Primary)	✓	✓		✓	
Establish a new rainfall station near <i>Iraia</i> , or telemeter <i>Iraia</i>	✓	✓ (Primary)				
Soil moisture and soil temperature at the following locations:						
Otaki (at Sims Road)	✓				✓ (Primary)	✓
Wairarapa plains (2 locations at new rainfall stations, above)	✓	✓			✓ (Primary)	✓
Eastern Wairarapa hills (1 location in addition to Longbush)	✓	✓			✓ (Primary)	✓
Fully-rate <i>Waipoua</i> at <i>Mikimiki</i> or new <i>Waipoua</i> low flow station	✓			✓ (Primary)		✓
Upgrade the streamflow sites <i>Mangatarere</i> at <i>Belvedere Road</i> and <i>Parkvale</i> at <i>Weir</i>	✓			✓ (Primary)		✓
Continuous water quality monitoring at Te Harakeke wetland	✓		✓ (Primary)			✓
Water level monitoring equipment at:						
Boggy Pond wetland	✓		✓ (Primary)			
Mangaroa Swamp	✓		✓ (Primary)			
Lake Pounui	✓		✓ (Primary)			
Carters Reserve wetland	✓		✓ (Primary)			

## 5. Communications

The network review was distributed to relevant departments within Greater Wellington for comment. The full network review is appended for the Committee's interest.

## 6. Recommendations

*It is recommended that the Committee:*

1. **Receive the report; and**
2. **Note the contents.**

Report prepared by:

Report approved by:

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**Attachment 1:** Review of the Greater Wellington hydrological monitoring network