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Committee Regulatory Committee
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Status of groundwater and surface water takes in the Wellington Region

1. Purpose

To inform the Regulatory Committee of the status and trends of groundwater and surface water takes within the Wellington Region (the Region) over the last 10 years and related issues and initiatives being taken by Greater Wellington's Environmental Regulation Department (ERD) to manage water resources.

2. Trends in groundwater and surface water

2.1 Overview - total number of water permits and the number of water permits processed

As of October 2009 there are a total of 727 water permits to take water in the Region – 251 for surface water and 476 for groundwater (Table 1). Most of these, 76% are located in the Wairarapa (208 surface water permits and 347 groundwater permits).

Table 1: Total number of water permits to take groundwater and surface water in the Wellington region as of October 2009

Consented water takes	Wellington	Wairarapa	Overall total
Total number of groundwater takes	129	347	476
Total number of surface water takes	43	208	251
Overall total	172	555	727

Since 1999, the total number of takes processed each year by the ERD has remained fairly stable, with the total number of takes processed ranging from as high as 157 in 2001/2002 to as low as 52 in 2004/2005. However, more recently the total number of water permits granted appears to have stabilised with 94 and 93 permits being processed in the 2007/2008 and 2008/2009 processing year respectively.

A total of 979 groundwater and surface water takes have been processed and granted in the Wellington Region over the last 10 years (Table 2). Of these 71% (692 permits) of these permits were groundwater takes, whilst only 29% (287 permits) were surface water takes.

Table 2: Total number of water permits (both groundwater and surface water) processed in the Wellington Region between over the last 10 years (between the 1 July 1999 and 30 June 2009)

Total number of water takes processed	Wellington	Wairarapa	Overall total
Groundwater takes	183	509	692
Surface water takes	72	215	287
Overall total	255	724	979

Approximately 75% of the water permits currently held and processed in the last 10 years are located in the Wairarapa. The majority of these permits are for irrigation purposes. The remaining 25% of water permits are located in the Lower Hutt and Kapiti areas. These permits are for a mix of uses, however the total volume of groundwater allocated in these areas is predominantly for public water supply purposes.

It should be noted that Policy 6.2.7 of the Regional Freshwater Plan for the Wellington Region (RFP) encourages the use of groundwater over surface water resources. This policy is reflected in Table 2 which shows there are over twice the number of groundwater takes granted when compared with surface water takes.

2.2 Allocation of groundwater and surface water

Groundwater

Groundwater resources in the Region are coming under increasing pressure. There are seven groundwater aquifers within the Region that are fully allocated where the amount of groundwater allocated is equivalent or over the annual safe yield. Two of these groundwater aquifers are presently over allocated - the Lower Hutt Groundwater Zone (LHGZ) and the Martinborough Eastern Terraces.

There are also a number of groundwater aquifers that are under stress as they are approaching full allocation i.e. 80% allocated or more. All fully allocated or stressed groundwater aquifers are located in the Wairarapa, except for the Lower Hutt and Waikanae Groundwater Zones. Groundwater allocation in the Hutt Valley (with the exception of the LHGZ) is relatively low, whilst allocation on the Kapiti Coast is starting to increase due to the demand for irrigation.

The level of groundwater allocation for all aquifer systems is shown in **Attachment 1**. Fully allocated or stressed aquifer systems are shown in red and orange respectively.

Surface water

Although more groundwater takes are granted than surface water takes, there is far more water allocated from surface water resources than groundwater resources. This is because the yields of groundwater bores are generally less than the demand required for some activities. For example, municipal water supplies and water races cannot obtain sufficient volumes of water from groundwater (with the exception of the LHGZ, where Greater Wellington Bulk Water takes 92% of this groundwater zones safe yield for municipal water supply).

Surface water resources in the Region are also coming under increasing pressure, with the amount of surface water taken in the Region increasing since 1999. This increase in allocation has arisen predominately from irrigation demand. There are a number of surface water catchments which are considered fully allocated or stressed (i.e. approaching full allocation). These are shown in red and orange in **Attachment 2**.

3. Management of groundwater and surface water takes

Over the last 10 years the approach used by the ERD to manage groundwater and surface water takes has changed in four areas.

Moratoriums in stressed groundwater aquifers

In response to concerns regarding declining groundwater levels in some groundwater aquifers which were not fully allocated, moratoriums were placed on 3 groundwater aquifer systems (Parkvale, Martinborough Eastern terraces and Lower Valley/Kahutara). This resulted in a change to the Regional Freshwater Plan which made the taking of groundwater over and above existing allocation levels a non-complying activity.

Water meters

To enable the effective management and monitoring of groundwater and surface water takes, the ERD has progressively required water meters to be installed on groundwater and surface water takes. This commenced with focussing on fully allocated or stressed groundwater aquifers or surface water catchments. Now, all new and replacement applications for groundwater and surface water takes require water meters to be installed. In time all water takes will have water meters, which is a requirement of the proposed National Environmental Standard for Water Meters.

Keeping water use records

As the requirement for water metering is relatively new, actual groundwater and surface water use is poorly known. In most instances permit holders, by way of consent conditions, are now required to submit records of daily, weekly, or monthly water use. In the Wairarapa water meters are typically read before and after an irrigation season to give a bulk value. In special circumstances the ERD may require a data logger and a telemetry system to be installed on particular takes, such as a large take in stressed or sensitive aquifer/catchment. The monitoring undertaken will enable Greater Wellington to better understand the water resource and ensure the take will not have an adverse effect on the environment. In the long term, data loggers/telemetry is the preferred method of keeping water use records, as manual records can be inaccurate, inconsistent (for example, water meter read at a different time each day) or infrequent.

Waiting list in fully allocated aquifers/catchments

In response to the number of fully allocated aquifers/catchments increasing in the past 10 years, a waiting list for potential resource consent applications has been set up in the Wairarapa. The purpose of the waiting list is to advise potential applicants to formally submit a resource consent application if water becomes available for allocation either by existing permit holders surrendering consents, or any changes to allocation limits in the Regional Freshwater Plan.

4. Other initiatives being used in the processing of ground water and surface water permits

To help assess groundwater and surface water takes, the ERD has implemented series of common expiry dates for all groundwater zones and surface water catchments in the Wairarapa. Therefore, rather than assess each replacement application as they are submitted, it is more cost effective and efficient to process all the applications together (referred to as 'batch processing'). An advantage of batch processing the water takes means all of the environmental effects of the takes can be assessed for a particular zone/catchment. These common expiry dates for all groundwater zones and surface water catchments are currently being developed for the Western side of the Region. These should be completed by December 2009.

The ERD is currently working on standardising and reviewing conditions for bore consents and groundwater and surface water takes. These standardised conditions will ensure consistency between both sides of the Region and will ensure the water records received are more consistent between different permit holders and are in a useable format.

5. Key issues looking forward

There is currently a lack of accurate information on actual water use. Most previous estimates of agricultural water use have relied on the amounts allocated through resource consent applications; however, these estimates may not be an accurate measure of actual water use. The data we have indicates that around 20% - 50% of the allocated volume is actually being used – a finding consistent with other regional councils. This discrepancy arises partly because irrigators typically apply for the amount of water they estimate they might need to get them through prolonged dry spells, which only occur infrequently. Consequently, unused but allocated water is effectively locked up for the duration of the resource consent. Although this lends a margin of safety, it can prevent water being allocated to any new groundwater users. Therefore, looking forward we require more water use information to ensure we make efficient water allocation decisions.

Due to the lack of accurate monitoring information in regards to actual water use, we are unable to accurately assess the amount of water flowing in a stream or through an aquifer system. This has consequences in that our groundwater models (that are used to determine safe yields) are difficult to accurately calibrate which can affect the accuracy of the modelling outputs. Some funding has been set aside (via the Long Term Community Council Plan – LTCCP) to develop a central database system where the actual water use data received by the ERD can be stored. This database would make it easier for the ERD and EMI to query and actually use the data that is collected.

In the near future the ERD will provide input on the new Natural Resource Management Plan including participating in a review of the Regional Freshwater Plan (RFP) as part of this process. This work will also involve significant input from the science team with the final development of the Wairarapa Groundwater Model and surface water allocation plans.

6. Communication

No further public communication is necessary for this report.

7. Recommendations


That the Committee:

1. **Receives** the report.
2. **Notes** the content of the report.

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Attachment 1: Status of Groundwater Takes – October 2009
Attachment 2: Status of Surface Water Takes – October 2009