

9.4 ANNUAL DISTRICT WIDE WATER MONITORING REPORT

Information Only - No Decision Required

Report To:	Environment and Planning Committee
Meeting Date:	26 July 2018
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Report Number:	REP18-07-07

1 Summary

1.1 Tasman District Council runs a dedicated programme designed to record and report on the consumption of ground and surface water across the regions water zones, measure compliance with consent conditions, aid in the implementation of water restrictions and oversee the implementation and compliance of the Reporting of Water Takes Regulations 2010.

1.2 Key findings from this season were:

- The Dry Weather Taskforce convened on seven occasions to impose or continue restrictions under Section 329 of the Resource Management Act 1991. Stage 2 rationing for the Waimea's commenced Monday 18 December and remained until 9 January where it was reduced to stage 1. On 15 January all rationing was removed due to wet weather.
- Consents administered under the water metering project in the 2017-2018 season remain consistent at around 1,464.
- There are 831 active consented water takes. Of those 7% still supply weekly water meter readings via New Zealand Post, 70% are now supplying weekly water meter readings via the web page service provided by Council, 9.8% are supplying weekly water meter readings via email, and 4.5% are filing weekly water meter returns via telemetry. 8.5% supply weekly water meter readings via mobile phone, 0.2% via fax.
- Construction of a new purpose built water metering database was complete and live for the 2017/2018 summer irrigation period. This went smoothly with any minor alterations successfully undertaken as the season progressed. However significant liaison with water users was required assisting in navigating the new interface.
- 1153 meter audits were undertaken during the 1 November 2017 to 1 May 2018 period.
- It is believed dairy shed wash down during the milking season exceeds permitted activity regulations however to date this water use has not been assessed. It is envisaged there will be an impact on the industry with dairy shed water use required to be authorised through Resource Consent. This is a project that will need to be undertaken at some point when resources allow.
- A third party telemetry provider has ceased trading affecting 16 consent holders who contracted their telemetry service to this provider. This means that they are required to

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set up a new telemetry system with a new telemetry provider at their cost. Staff believe a case could be made to bring aspects of the telemetry data management 'in house' to maintain data quality and provide a robust service. This development in relation to the Waimea dam is discussed further in the report, but if there was appetite, a separate report could be provided. There would be development costs and any recovery process would have to be discussed with permit holders.

- 1.3 Overall compliance this water year continues to be good but still requires significant contact between Council staff and consent holders. During the season there were approximately 41 instances where water abstracted exceeded allocation limits.
- 1.4 Implementation of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 continues. There are now a further 219 consented takes under 5 l/s required to install a complying water meter by November 2018 and to be verified as accurate by June 2019. It has been five years since the regulations required all water meters recording water takes over 20 litres per second to be verified as accurate. This legislation imposes the requirement to verify water meter accuracy every five years and therefore all water meters recording water takes over 20 litres per second must now be re-verified with proof of accuracy to be supplied to Council compliance staff.
- 1.5 It is envisaged that monitoring demands will increase considerably with the development of the Waimea Dam project and with the implementation of stricter water rationing triggers throughout the Waimea water use zones. End of water year summaries are in the process of being sent to all consent holders together with graphical representation of their individual water use record and the relevant water management zone. This reporting method was used for the majority of consent holders and appears well received.
- 1.6 The Administration requirements of the water metering programme continues to increase due to the ongoing implementation of the Regulations and plan changes associated with the Waimea Dam project.

2 Draft Resolution

That the Environment and Planning Committee receives the Annual District Wide Water Monitoring Report REP18-07-07 report

ANNUAL DISTRICT WIDE WATER MONITORING REPORT**3 Purpose of the Report**

- 3.1 Tasman District Council runs a dedicated programme designed to monitor and report on ground and surface water consumption across the regions water zones, measure compliance with consent conditions and aid in the implementation of water restrictions. In recent years the programme has expanded to oversee the implementation and compliance of the provisions of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010.
- 3.2 At the end of each water metering season the Compliance Department presents a summary of performance against the various activities managed under the programme and the purpose of this report is to present a summary for the 2017-2018 water year.

4 Water Take Compliance

- 4.1 Consents administered under the water metering project in the 2017-2018 season remain consistent at around 1,464.

This number of meters comprises the following:

- 1,464 Consented meter takes
- 112 Moutere domestic (permitted activity) metered takes.

- 4.2 Of the consented metered takes the following applies:

- 831 were deemed active and required to file weekly water meter readings. These were the consent holders irrigating that season.
- 119 were deemed non-active and not required to file weekly returns. These were consent holders not irrigating that season
- 162 are on future implementation. These are authorised through consent but have not yet been exercised.
- 219 are under 5 litres per second and now require meters to be installed
- 21 Are non-consumptive takes.

- 4.3 Of the Moutere domestic takes the following applies:

- 101 are deemed active and filing six monthly returns.
- 11 are not being used.

Return Method

- 4.4 There are 831 active consented water takes. Of those 7% still supply weekly water meter readings via New Zealand Post, 70% are now supplying weekly water meter readings via the web page service provided by Council, 9.8% are supplying weekly water meter readings via email, and 4.5% are filing weekly water meter returns via telemetry. 8.5% supply weekly water meter readings via mobile phone, 0.2% via fax.
- 4.5 Of the electronic methods this season, webpage returns make up 75% of all returns coming in. Email returns have dropped to 11%, telemetry data has increased to 5% and Council's mobile app makes up 9% of returns.

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- 4.6 7.2% of weekly returns are still made using the pre-paid card posted through the mail or via fax.

Telemetry (Presented by Council Water Resources Officer Brenda Clapp)

- 4.7 In the last year, the number of telemetered water meters has increased to 43. Four of the telemetered sites also provide additional data for consent requirements, i.e. water level, conductivity.
- 4.8 The aligning of the telemetered water meter data with other hydrological data collected by the Environmental Monitoring section continues. With pre-season and post-season checks provided by the consent holder, and mid-season meter audits, the data is being archived and quality coded to the National Environmental Monitoring Standards (NEMS), and comments are logged when issues have occurred.
- 4.9 As we have seen in previous years, there have been several issues with bad telemetered data. This has occurred from actual water meter malfunctions sending erroneous data, to power issues causing data to be lost. Occasionally the telemetered data appears okay, but the audits can highlight missing or erratic data. These issues are not uncommon in the world of electronic data collection, but for water metering in Tasman, it is made worse by the occasional poor installation causing the fault, or the long response time of the service providers solving the issues, which increases the poor quality or missing data.
- 4.10 There have been five telemetry service providers in the last year (these service providers are different to those that install and verify the meters, and install the telemetry equipment). At the beginning of June, one of these companies gave a months' notice that they were shutting their service down for good. In the Tasman region, this affected 16 users. Of these users, one has consent conditions requiring telemetry, while the others use the telemetry for convenience of supplying council with weekly readings and/or farm management. We are currently working with the service providers that installed the equipment and the consent holder for the best alternative options.
- 4.11 The implementation of the 'Waimea Dam' or 'no dam' rules will likely increase the requirement of telemetering water meters in the Waimea plains due to tighter water restrictions. With the ongoing problems of erroneous and missing data, combined with the sudden closure of a telemetry service provider and the increase in telemetered water meters, we need to review the process of telemetering water meters to improve the quality of the data. Having more control over the collection of the data will provide the improved quality. Possible solutions could mean that we either tender the telemetering out to one service provider under a tight contract or bring the telemetry management in house.

Compliance Summary

- 4.12 At present 43 water management zones in this district have either a full or partial metering requirement on abstractive takes imposed through the TRMP. For the actively metered zones consent holders are required to furnish weekly usage readings over the water metering period (now 1 July to 30 June). This forms the basis of the compliance monitoring programme and has three primary objectives:
- Ensuring compliance with the obligations imposed in consent conditions and responding to non-compliance accordingly. This is a statutory requirement and underpins all monitoring programmes.

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- Ensuring comprehensive usage data is available for the purpose of sound water resource management and policy setting.
- Ensuring ability to provide accurate usage data to central government agencies in meeting national reporting objectives.

4.13 With the introduction of the Reporting of Water Takes Regulations 2010 the duties imposed through this have also been built into the programme as a dedicated project interlocking with the current framework. The monitoring, enforcement and ability to report are integral to the success of implementation in this district and it has equal status to the normal consent monitoring.

Missing Readings

- 4.14 Overall performance in respect to returns for active meters was relatively good.
- 4.15 Weather patterns this season resulted in early restrictions which did not ease until Mid-January with the arrival of the first of two significant cyclones. During that dry period the Waimea zones spent a number of weeks on stage two rationing and movement to stage 3 rationing was considered by the Dry Weather Task Force. Water restrictions were significant to the extent Council was approached by a number of water users looking to secure more water and seeking short term informal (unconsented) short term agreements for allocation sharing.
- 4.16 Staged rationing meant levels of compliance with meter returns was correspondingly good. However, as restrictions eased it was noted there was a marked increase in the occurrence of missing weekly readings across the district. As a result and in recognition from Council comments at last year's annual report presentation, specific audits were undertaken and water users invoiced for those audits. Currently staff are still reviewing missing reading audits and invoicing where the audit was due to a failure to supply weekly water meter readings. This approach acts as a form of punitive response. Also formal letters of warning have been issued in preparation for the use of Infringement fines and Abatement Notices as appropriate next season.
- 4.17 Missing readings continue to be an issue which take staff time. Part of this problem is the staged inclusion of newly metered users who are slow coming to grips with the new obligations. Another aspect is the perceived importance (or lack thereof) of weekly water meter reading supply once rain starts and there are no water restrictions or there is intermittent use due to weather. However missing readings also create problems as once readings are supplied they are entered against a single week and result in the total abstracted volume being registered as an overtake for that week. These may therefore not be genuine overtakes if averaged over the missing period or they may actually be genuine overtakes.

Excessive Water Use

- 4.18 109 instances were recorded where the weekly water limit was breached by about 100 different water users. Of those 109 instances, 37 are not true excess water takes due to circumstances such as allocation sharing or missing weekly water returns distorting calculations. A further 31 excess water takes were within the 5% meter margin of error range of their authorised limit. The remaining 41 were confirmed as illegal excess water

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takes from 23 different water users. Enforcement staff have made contact with each of those water users and investigated the reason for the non-compliance.

- 4.19 All excessive water use situations were investigated and responded to in accordance with Council's enforcement policies. For minor overtakes or if appropriate for the first instance of non-compliance; warnings were used as a means of addressing the non-compliance and gaining future compliance. Past warnings (should they exist) are considered in determining enforcement options for non-compliance.
- 4.20 Telemetered water use data over takes were either due to, or obscured by, system errors or failures.

Water Meter Audit

- 4.21 The 'anytime, anywhere' water meter audit continued throughout this water year. Council performed 1153 audits across 750 water meters over the 2017-2018 irrigation season. 65% of all active meters were audited. 503 audits were second audits due to issues with the consent holder. These included targeted missing reading audits and a particular emphasis was placed on the Waimea zones this season with meters audited twice to ensure water use data was accurate. Meter audits continue to include a reading of the meter dial, ensure integrity of the seal and obtain an updated (digital) photographic record of the meter.

Fictitious Meter Readings

- 4.22 Some reading discrepancies were identified through audit and all were followed up. All of these were the result of human error or laziness and could be amended. None have been confirmed as being manipulated or were a result of fraudulent intent.

Moutere Domestic Metering

- 4.23 The TRMP also requires Moutere domestic (permitted activity) takes to install meters and provide a single reading in April and then in November.
- 4.24 As at 30 June 2018 a total of 112 Moutere domestic bores have been identified and registered on the database. While that is the total registered, 11 are not being used.
- 4.25 In respect to these domestic meters the water use data readings are required April and November each year.

5 Water Rationing and the Dry Weather Task Force

- 5.1 Due to the prevailing dry weather patterns occurring in the district over the summer the Dry Weather Taskforce was required to convene on seven occasions to consider and impose restrictions under Section 329 of the Resource Management Act 1991.
- 5.2 The following is a timeline of the meetings and rationing stages as they were imposed over this period.

DWTF Meet Date	Effective Date	S329 type	Rationing step	Zones affected
05/12/2017	11/12/2017	Declaration	Step 1	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Upper Confined Aquifer,

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12/12/2017	18/12/2017	Declaration	Step 2	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Upper Confined Aquifer,
			Step 1	Hope Minor Aquifers, Lower Confined Aquifer,
19/12/2017	25/12/2017	Direction	Step 2 continues	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Upper Confined Aquifer,
			Step 1	Hope Minor Aquifers, Lower Confined Aquifer, Wai-iti & Wai-iti Dam Service Zone.
27/12/2017	01/01/2018	Declaration	Step 2 continues	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Upper Confined Aquifer,
			Step 1 continues	Hope Minor Aquifers, Lower Confined Aquifer, Wai-iti Dam Service Zone.
03/01/2018	9/01/2018	Declaration	Step 2 continues	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Upper Confined Aquifer,
			Step 1 Continues	Hope Minor Aquifers, Lower Confined Aquifer, Wai-iti & Wai-iti Dam Service Zone
			Domestic water use Restriction	Moutere Eastern, Moutere Coastal, Moutere Surface, Moutere Southern and Moutere Western.
09/01/2018	15/01/2018	Direction	Step 1	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Upper Confined Aquifer,
			Step 1 Continues	Hope Minor Aquifers, Lower Confined Aquifer, Wai-iti & Wai-iti Dam Service Zone
			Domestic water use Restriction	Moutere Eastern, Moutere Coastal, Moutere Surface, Moutere Southern and Moutere Western.
15/01/2018	15/01/2018	Direction	Removed All	Restrictions removed

6 Other Administrative Requirements

6.1 In addition to the ongoing collection, monitoring and reporting of water use data during the season other critical water monitoring administrative tasks placing high demand on staff time and resources include:

- Pre-summer season set up. Considerable staff time is dedicated to preparation for the upcoming summer. This is typically reviewing and uploading new consents and renewals, database and data integrity audits, alerts to water users of the pending start and contacting those not using water for confirmation that the non-use situation remains.
- End of water year reporting. This is an important feedback mechanism to water users and forms an integral part of the overall reporting process. While this occupies a considerable amount of staff time and receives occasional complaint from particular users, it is considered to be well worth the effort and is typically well received by the users. The reporting consists of a summary letter, graph of the individual and wider zone usage, commentary on consent condition performance together with any identified deficiencies. This water year the graphs were generated in the new WCM database and altered to enhance clarity.

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- Electronic records. There are 43 consents now supplying readings via telemetry. The supply of electronic data in this format is likely to increase as a result of the Regulations. Council process managing this form of data continues to develop to meet this change. (Refer to telemetry comments for further comment). It is important to note there is still a requirement for active staff involvement with telemetered sites to maintain the integrity of information received.
- NCS database changes. The rapid changes occurring in the management and reporting of water use has meant the demand for increased database functionality. The implementation of the Regulations and their reporting requirements has certainly compounded this. Council has constructed a new water monitoring database. Efficiency with reporting and mail out merging for multiple consent information to single holders is a priority to reduce staff time on certain aspects of the water metering programme. The new database reporting function has highlighted other areas of information storage that require development.

6.2 Water Zone graphs are available on request.

7 Resource Management (Measurements & Reporting of Water Takes) Regulations 2010

- 7.1 Overall administration requirements of the water metering programme continue to increase due to the ongoing implementation of the National Regulations. As the staged implementation of the regulations progress greater numbers of affected water users are required to have meters installed, verified as accurate and supply Council with weekly water meter readings. Re-verification of meters recording water takes of 20 litres per second or greater is required
- 7.2 The current stage of implementation for the regulations is >5 litres/second and applies to 219 water takes. These water takes are to have a water meter installed by 10 November 2018 with the water meters verified as accurate by June 2019.
- 7.3 Consented water takes of 20 litres per second or above are now required to have the existing water meter re-verified as accurate.

8 Policy / Legal Requirements / Plan

- 8.1 One of the main objectives of the water metering programme is to provide Council, resource users and the community, data on the consumptive use of water in the individual management zones and the compliance behaviour of the users. This data provides information on the volumes, pattern of use, return rates and the stages and effects of rationing in the individual zone. Presentation of this information in an annual summary report is an essential part in Council meeting this requirement. Graphical representation of each water management zone and the report is also provided on the Council's website www.tasman.govt.nz for public viewing.
- 8.2 Council also has an obligation to report to the Ministry for the Environment (MfE) on the district's performance with respect to implementation of the Resource Management (Measurement & Reporting of Water Takes) Regulations 2010. This occurs annually as and

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when it receives the request. At present this is done through spreadsheets as there is no data share mechanism.

9 Consideration of Financial or Budgetary Implications

- 9.1 A summary of the Compliance Monitoring Water income/costs for the 12 month period ending 30 June 2018 is as follows.
- 9.2 Budgeted expenditure for the 2017/18 year was \$244,170. Total actual expenditure for the period was \$223,484 with total income for the period of \$231,853. This gave a reported year end surplus of \$8,370.
- 9.3 The programme was 64% water user funded this year. The target remains for this activity to be 100% user funded.
- 9.4 It is envisaged that compliance demands will increase considerably with the implementation of rules associated with the Waimea Community Dam plan change.

10 Conclusion

- 10.1 Water user compliance requires a significant Council administrative and field effort. Significant interaction between consent holders and Council staff is required to achieve consistent compliance every season.
- 10.2 Non-compliance with meter returns continues. This was the first season where targeted audits were undertaken and invoices for staff time were issued. As always compliance staff assess each case of non-compliance and where possible place emphasis on education and encouragement to achieve compliance.
- 10.3 Overtakes were encountered this season with staff taking a firmer more formal response which include formal written warnings, Infringement Fines and Abatement Notices. The new database has improved record keeping and as a result greater water user accountability. Invariably the majority were errors in meter readings or inconsistent returns. Council staff exercise discretion in these cases and worked with the consent holder.
- 10.4 Use of the mobile phone application is growing and the application appears to be working well. There are a number of consent holders who, for various reasons, lack the ability to utilise electronic technology to provide returns. As a result, the old paper system still remains, however every effort will be made to move users to electronic reporting when that option becomes available to them. This will save some cost to Council in time and resources.
- 10.5 Maintaining this momentum for future seasons as ongoing success relies on sufficient staff resources due to the high degree of customer contact. The new Water Metering & Resources Environmental Monitoring Officer position fills an important technical role alleviating some technical data management pressures with the Regulations.
- 10.6 The expanding water programme and regulations had a significant impact on Council database requirements. The new database was implemented smoothly as the season developed the database functionality was fine-tuned and this is ongoing as the season

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transitioned from receiving and processing information to analysing and reporting on that information.

- 10.7 The Waimea Community Dam and plan change proposals remain prominent with its potential impacts on the water metering programme whichever course of action finally results. The Compliance Department continues to work on its strategies for the future implementation of this proposal.
- 10.8 Telemetry (especially considered as a monitoring tool for the Waimea catchment) is a growing monitoring method, however, as it stands does not provide a “silver bullet” to monitoring water use. Issues with technology and third party providers continue.
- 10.9 The Tasman District Council appears to be positioned well against MFE recommendations as a result of a Council monitoring review in comparison to other councils with regard to monitoring water consumption throughout the District together with the implementation of the Central Government Measurement and Reporting of Water Take Regulations.

11 Attachments

Nil