

9.2 ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

Information Only - No Decision Required

Report To:	Environment and Planning Committee
Meeting Date:	28 July 2016
Report Author:	Jim Trembath, Compliance & Investigations Officer
Report Number:	REP16-07-04

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 restrictions under Section 329 of the Resource Management Act 1991.
 - Consents administered under the water metering project in the 2015-2016 season increased from 1,458 to 1,486.
 - 86% of water meter readings are received electronically. Of those 79% are now filing via the web page service provided by Council, 10% are filing via email, and 4.5% are filing via telemetry. Council has introduced the ability to provide meter readings through the use of a mobile phone, although still in its infancy, 6.5% of water meter readings are now being received this way.
 - Construction of a purpose built water metering data base is required to address limitations to the current database together with the projected increase in monitoring and compliance demands as a result of the Regulations and Waimea Dam development.
 - 1055 meters received an audit during the season, up from 642 last season due to the assistance of a second summer student.
- 1.3 Overall compliance this water year continues to be good but requires significant contact between Council staff and consent holders. One Infringement Notice and one abatement notice was issued to one company for pumping Powley Creek dry. Overtakes did occur however no infringements were issued for overtakes this summer as many were the result of

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

missing readings or for first time offenders. Each overtake that did occur was investigated and assessed on a case by case basis with 11 warnings issued and recorded against those water take records. There were four invoices issued for staff time required to physically read water meters (down from 13); these audits were required due to ongoing failure after repeated requests to supply the required water meter readings. Council water use monitoring had a high profile at the start of this season as dry weather patterns resulted in early water restrictions and two students assisted with district wide water meter audits over this period.

- 1.4 Implementation of the Reporting of Water Takes Regulation 2010 continues. There are now a further 319 consented takes 5 l/s or greater required to install a complying water meter by November 2016 and to be verified as accurate by June 2017. To date 51 have confirmed a complying meter and 268 have received a reminder notice regarding the November deadline.
- 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. Further investment in an additional monitoring officer position will be required to meet that need. 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 is well received despite the time and cost involved.
- 1.6 The Administration requirements of the water metering programme continues to increase due to the ongoing implementation of the National Regulations and projects like the Waimea Dam project. As the staged implementation of the regulations progresses the number of affected consent holders grows. Greater numbers are required to submit weekly meter readings and in turn further administration processes are required.

2 Draft Resolution

That the Environment and Planning Committee receives the Annual District-Wide Water Monitoring Report REP16-07-04.

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 Central Government 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 2015-2016 water year.

4 Water Take Compliance

- 4.1 The total number of meters on the database at the end of the 2015-2016 water year is 1,486, an increase from 1,458 last water year. This number of meters comprises the following:

- 1,376 Consented meter takes
- 110 Moutere domestic (permitted activity) metered takes

Of the consented metered takes the following applies:

- 814 were deemed active and required to file weekly returns. These were the consent holders irrigating that season. Up from 766 last water year.
- 137 were deemed non-active and not required to file weekly returns. These were consent holders not irrigating that season
- 425 are on future implementation

Of the permitted activity takes the following applies:

- 94 are deemed active and filing six monthly returns.
- 16 are not being used

Return Method

- 4.2 86% of all meter reading returns are being received electronically including domestic takes. The remainder still provide their information through weekly card returns.
- 4.3 Of the electronic methods this season, webpage returns make up 79% of all returns coming in. Email returns have dropped to 10%, telemetry data remains steady at 4.5% and Council's new mobile app makes up 6.5% of returns.

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

- 4.4 The 14% of weekly returns still made using the pre-paid card posted through the mail or via fax.

Telemetry (Presented by Council Environmental Monitoring Officer Brenda Clapp)

- 4.5 Council now has 34 telemetered water meters provided by five different telemetry hosts, with three of these new in the last year. There have been minimal issues with the data transfer from the telemetry hosts to us, but still a few instances of problems at the water meter end. The problems have caused missing or erroneous data, and have been due to lightning strikes and equipment malfunction. When these sites have not been working, an effort has been made to get the service providers or consent holder to provide manual readings until the problem is fixed.
- 4.6 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.
- 4.7 Telemetry audits continue, with a further five completed this year. These audits involve checking the installed equipment against the Irrigation New Zealand guidelines and NEMS, and the amount of water through the water meter against the telemetry data. Of these five, there were two that did not pass, which I have been working with the consent holder to identify the problem. The rest of the sites will be completed over the next few years.

Compliance Summary

- 4.8 At present 37 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.
 - 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.
- 4.9 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.

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

4.10 The 2015-2016 water year performance is reported as follows:

Missing Readings

- 4.11 Overall performance in respect to returns for active meters was relatively good however there are some qualifications to this.
- 4.12 Weather patterns this season resulted in early restrictions which did not ease until February. With two students out and about auditing, their increased presence and the impact of 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.
- 4.13 Further to this the Compliance Department had adopted a slightly different approach to missing readings based around increased verbal contact and encouragement and an attempt to rely less on punitive enforcement. Unfortunately, this appears not have been effective at all with the result that we experienced the noticeable increase from last season in missing weekly readings.
- 4.14 Part of this problem was the inclusion of a lot of newly metered users who were slow coming to grips with the new obligations. These users absorbed a lot of staff time. There was also a core group of repeat offenders who despite being given every opportunity failed to comply. Given the fact that the increase in staff time spent following up on missing readings didn't prove productive this indicates a firmer enforcement position regarding missing readings (including the use of infringement fines) will be required for next season to re-enforce water user responsibility and obligations. Despite this, 47 formal warnings were issued for repeated instances of failure to furnish water meter readings and two (2) Abatement Notices were issued for failing to supply weekly water meter readings as required.

Excessive Water Use

- 4.15 There were a number of excessive water take encountered this year however genuine overtakes were relatively small in number and many were within the 5% tolerance. A common theme for most recorded overtakes however was simply poor history of providing readings during consumption periods.
- 4.16 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. In summary 11 warnings were issued for excess water abstraction this season.
- 4.17 Telemetered water use data over takes were either due to or obscured by system errors or failures.

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

- 4.18 There was one infringement fine and abatement notice issued this season for a company that abstracted surface water from Powely Creek to the extent that the surface flow ceased below the point of take.

Water Meter Audit

- 4.19 A total of 1055 meters were audited during the water year, up from 642 last water year with the assistance of the second summer student and this proved a positive aspect to the summer programme given the dry conditions. 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. Where a reading discrepancy is found these were followed up.

Fictitious Meter Readings

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

Moutere Domestic Metering

- 4.21 The TRMP also requires Moutere domestic (permitted activity) takes to install meters and provide a single reading in April and then in November.
- 4.22 As at 30 June 2016 a total of 110 Moutere domestic bores have been identified and registered on the database. While that is the total registered, not all have installed the required meters and 16 bore owners remain unmetered due to non-use.
- 4.23 In respect to these domestic meters the water use data readings are required April and November each year. As at 30 June 2016 all readings had been received or obtained during audit for those respective meters.

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.

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

DWTF Meet Date	Effective Date	S329 type	Rationing step	Zones affected
24/11/2015	1/12/2015	Declaration	Step 1	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer,
1/12/2015	7/12/2015	Direction	Step 1	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer,
8/12/2015	14/12/2015	Declaration	Step 2	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer,
			Step 1	Hope Minor Aquifers, Lower Confined Aquifer, Wai-iti Dam Service Zone
None Held	21/12/2015	Direction	Step 2 continues	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer,
			Step 1 continues	Hope Minor Aquifers, Lower Confined Aquifer, Wai-iti Dam Service Zone
22/12/2015	28/12/2015	Declaration	Step 2 continues	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer,
			Step 1 continues	Hope Minor Aquifers, Lower Confined Aquifer, Wai-iti Dam Service Zone
29/12/2015	4/01/2016	Declaration	Step 3	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer,
			Step 2	Hope Minor Aquifers, Lower Confined Aquifer
			Step 1	Wai-iti, Motupiko
			Step 1 continues	Wai-iti Dam Service Zone
None Held	5/01/2016	Direction	Step 1	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer, Hope Minor Aquifers, Lower Confined Aquifer
			Removed	Wai-iti Dam, Motupiko, Wai-iti
None Held	11/01/2016	Direction	Removed All	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer, Hope Minor Aquifers, Lower Confined Aquifer
9/02/2016	15/02/2016	Direction	Stage 1	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer,
18/02/2016	18/02/2016	Direction	Removed	Upper Catchments, Reservoir, Waimea West, Golden Hills, Delta, Unconfined Aquifer, Upper Confined Aquifer,

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

6 Other Administrative Requirements
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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 altered to enhance clarity. For those that find offence with this feedback loop there is an opt out clause and two are currently on this list.
- Electronic records. There are 34 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 processes to manage this form of data continue 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 is currently in the process of constructing 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.

6.2 Water Zone graphs are available on request.

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

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

required to have meters installed, verified as accurate and supply Council with weekly water meter readings.

- 7.2 The current stage of implementation for the regulations is >5 litres/second but <10 litres/second (third of the staged implementation) and applies to 319 water takes. These water takes are to have a water meter installed by 10 November 2016 with the water meters verified as accurate by June 2017.
- 7.3 Of those 319 water takes, 268 have received reminder letter regarding the November 2016 installation deadline.
- 7.4 From the last round of implementation which was 390 water takes within the 10- 20 litres/second bracket, 78 remain on waiting lists or are non-complying and being followed up by staff. The remainder have achieved compliance.

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 districts performance with respect to implementation of the Resource Management (Measurement & Reporting of Water Takes) Regulations 2010. This occurs annually as and when it receives the request. At present this is done through spreadsheets as there is no data share mechanism.
- 8.3 The water management zone data for the 2015-2016 water year that is to be posted on the website in coming weeks are attached in Attachment 1.

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 2016 is as follows.
- 9.2 Budgeted expenditure for the 2015/16 year was \$259,302. Total actual expenditure for the period was \$242,924 with total income for the period of \$298,288. This gave a reported net gain of \$55,364. The net gain was principally due to an increase in metered take revenue

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

along with an increased split into the water account from the annual charge coupled with reduced expenditure over the period.

- 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. Further resourcing will be required to meet this need.

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 was more prominent this year particularly with the new metered users and the small group of well-known recidivists that we encounter each year. As always compliance staff assess each case of non-compliance and where possible place emphasis on education and encouragement to achieve compliance. Unfortunately, this wasn't so successful this season and as a result next season a harder line will be taken early on poor performance.
- 10.3 Overtakes were encountered this season although most were minor and required little enforcement response. Invariably the majority were errors in meter readings or inconsistent returns. Council staff exercise discretion in these cases and worked with the consent holder and no enforcement action was required.
- 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. The recent employment of a Regulatory Administration officer will also assist at times of high demand in this programme.
- 10.6 The expanding water programme and regulations is having a significant impact on Council database requirements. The demand to capture meter verification data, year round monitoring, and greater reporting requirements means the old database has reached the

ANNUAL DISTRICT-WIDE WATER MONITORING REPORT

end of its useful life. Compliance staff in conjunction with IT Services have now developed a new database which is due to go live at the start of the 2016-17 season.

10.7 The Waimea Community Dam and plan change proposals remain prominent with its potential impacts on the water metering programme. 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 continues.

10.9 The Tasman District Council appears to be positioned well 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