MEMORANDUM

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| To: | Helen Creagh |  |
| Rotorua Catchments Manager |
| From: | Stephanie Fraser, Penny MacCormick and Natalie Miedema | Date: 13 April 2018 |
| Nutrient Management Officers |
| File Ref: |  |
| Subject: | Practice note on OVERSEER version 6.3.0 data input protocols for Lake Rotorua catchment |



**Memo purpose**

This memo sets out the protocols for selecting OVERSEER® Nutrient Budgets (OVERSEER) data inputs for regulated properties in the Lake Rotorua catchment. It specifically applies to:

* OVERSEER assessments that are required by rules within ‘Plan Change 10: Lake Rotorua Nutrient Management’ which was formally notified on 29 February 2016, and;
* Version 6.3.0 of OVERSEER and the associated OVERSEER® Best Practice Data Input Standards for Version 6.3.0 dated March 2018.

This memo is intended to enable landowners, consultants and BOPRC staff to take a consistent and robust approach to Plan Change 10 OVERSEER assessments. This memo will be updated when further versions of OVERSEER are released.

All versions of this memo will be published on-line at [www.rotorualakes.co.nz](http://www.rotorualakes.co.nz).

**Disclaimer**

The protocols described in this memo are Bay of Plenty Regional Council’s position and do not represent the views of OVERSEER in any way.

**The issue**

The OVERSEER® Best Practice Data Input Standards (the ‘Input Standards’) were first published after version 6 was released in 2012. The Input Standards enabled a much more consistent approach to be taken across New Zealand. However, the quality and availability of input data for individual OVERSEER assessments can vary considerably, in addition to the discretionary judgement of the OVERSEER user. To address this variability, the Input Standards adopted a tiered system of data input recommendations for many inputs i.e. ‘Where there is more than one recommendation given[[1]](#footnote-1), the preferred option is listed as 1’. In addition, a number of input recommendations are described as ‘compulsory for the dairy industry’ and are highlighted by a series of yellow boxes. This reflected that OVERSEER is used for a wide range of regulatory and non-regulatory purposes.

In the regulatory context of the Lake Rotorua catchment, it is important that assessments of property nitrogen (N) losses do not vary unnecessarily with consequent uncertainty for Council and landowners. This requires that OVERSEER user discretion is limited in terms of choices between input recommendations. Further, Council has built up detailed property and catchment GIS data that enables a robust and consistent approach to some input parameters e.g. LIDAR-based slope determination. In some cases, the Council protocol may seem obvious but it is still useful to specify in order to avoid less robust input choices.

It is important to note that **the Council protocols described below are highly consistent with the Input Standards** and are mainly focused on specifying which of the data input recommendation options to apply, or not to apply. The Council protocols only add new input recommendations where they are consistent with Council practices established through the Rule 11 benchmarking process and Plan Change 10 allocation methodology.

A secondary consideration is that proposed rule LR R10 (regarding N trading) makes specific reference to Council publishing ‘protocols’ even though other more substantive rules do not. The key reference in R10 is clause (iv) of the matters that Council reserves control over, being:

*The form of information and documentation to support the OVERSEER® file. This includes data inputs used for the OVERSEER® file and the application of the Lake Rotorua Groundwater Catchment Nitrogen Protocols published by the Regional Council.*

**Bay of Plenty Regional Council Protocols**

These protocols must be read in conjunction with OVERSEER® Best Practice Data Input Standards for Version 6.3.0.

| **Section** | **Input** | **BOPRC protocol** |
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| 1.2 | Location  | Use Central Plateau. |
| 1.3 | Blocks in separate catchments | Ignore final phrase of the Recommendation i.e. ignore ‘…however, if blocks are in separate catchments they should be treated as separate nutrient budgets’. This is not applicable for the Rotorua catchment, however creating a block that more or less coincides with the catchment boundary is often useful. |
| 1.3 | Grazed tree blocks | Where grazed trees exist on the property, a specific pastoral block should be identified to allow for different management practices and lower pasture productivity. No reference is made to grazed tree blocks in the Input Standards but they are an existing block type in many properties in the Rotorua catchment. Note that scattered gorse with stock access should be treated similarly to a grazed tree block.  |
| 1.3 | Gorse blocks | Blocks with dense gorse and no practical stock access should be entered as ‘Trees and scrub’ and native.  |
| 1.3 (this also relates to 1.10) | Wetland blocks | Where a fenced wetland exists on the property, BOPRC protocols align with the Input Standards requiring that this is entered as a ‘riparian’ block, and BOPRC recommends that it is identified as a wetland in the block name.Where a wetland is unfenced, this should be entered as a pasture block with an appropriately reduced level of ‘relative productivity’, consistent with Section 1.6 of the Input Standards and this memo. |
| 1.3 | House blocks | House blocks should be entered for ALL properties where there is a house, not just those <20 ha. If there is more than one house on the property, the areas of each house and garden/section can be summed, and entered into OVERSEER as a single "house" block.This approach is consistent with the Input Standards where ‘…specific Regional Council guidelines require a different approach’. |
| 1.3 | Effective area | BOPRC does not require raceways and lanes to be blocked out separately i.e. raceways and lanes can be part of adjoining blocks. |
| 1.6 | Relative productivity  | Where recommendation 2 applies in terms of relative productivity differences between blocks, ensure this approach is also applied to blocks of "grazed trees". |
| 1.6 | Animal distribution between blocks | Do not use the Dairy Industry recommendation to select ‘Same as ratio of total animal intake’ . |
| 1.10(this also relates to 1.3) | Wetlands | Where a wetland is unfenced, this should be entered as a pasture block with an appropriately reduced level of ‘relative productivity’, consistent with Section 1.3 of the Input Standards and this memo.  |
| 2.1.1 | How would you like to enter your stock numbers? | Enter stock numbers using the monthly stock number table. |
| 2.1.3 | Mob detail entry parameters | For ‘Notes regarding entering animal weights’, do not use the Dairy Industry recommendation.  |
| 2.2 | Production, Dairy | Follow the Input Standards, leaving milk volume yield and milk fat yield as default values. |
| 4.1 | Block data, topography | Do not use the slope definitions in the table as it has implicit rounding at each slope category threshold e.g. it is unclear what category a 7.5° slope should be. Slope for each block is calculated geospatially from the farm block map developed with Council and the landowner’s Land Use Advisor i.e. Council will provide the block slope data for the farm block map. Slope categories include: Flat = 0 - 7.99°; Rolling = 8 - 15.99°; Easy Hill = 16 - 25.99°; Steep Hill = > 26°Where one OVERSEER block comprises of several geographically separate part-blocks, slope is calculated based on the average slope of all of the part blocks. |
| 4.1 | Distance from coast | In Rotorua the prevailing wind direction is split between the north east and the south west. Consider north east to be the prevailing wind direction and measure the ‘distance from coast’ from the Bay of Plenty coastline. The distance from the coast is typically between 30-60 km for properties within the Lake Rotorua catchment. |
| 4.1 | Fodder crop block-specific | If the block does not have a fodder crop rotating through it follow the OVERSEER Data Input Standards i.e. leave the “Cultivated in last 5 years” box unchecked.  |
| 4.1 | House block-specific | Do not ‘enter the average number of people on the property…’. Use Council’s "House block" requirements, summarised as follows:* For number of people on property a standard occupancy of 3 people per dwelling is used.
* Cultivated area: a standard area of 100 m2 cultivated land per dwelling is used. This is then calculated as a percentage of the house block; e.g. for a house block that is 1000 m2 (or 0.1 ha), the percentage of the block that is cultivated = 100m2/1000m2 = 10%.
* For a 'house block' that comprises multiple self-contained dwellings, the number of people and area of cultivated land needs to be multiplied by the number of houses in the block.
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| 4.2 | Climate, Daily rainfall pattern settings | Follow Recommendation 1 by selecting the ‘1450-2900 mm, Low’ option for the 'Daily rainfall pattern setting', even if the property’s annual rainfall is (slightly) lower than 1450 mm.Do not use ‘…farmers knowledge of daily rainfall pattern setting’ |
| 4.2 | Climate station | Enter the latitude and longitude for each OVERSEER block based on the GIS-calculated mid-point for each block. For consistency this method is used for all farm systems in the Lake Rotorua catchment. Where one OVERSEER block comprises of several geographically separate areas, the latitude and longitude for the block is calculated based on the centre of these areas (part-blocks), with a forcing mechanism in place to ensure the central point occurs inside one of the blocks.For OVERSEER files that form the basis of consent applications, Council will provide the latitude and longitude for each block once a farm map has been supplied.Do not use the recommendation to ‘use latitude and longitude from the farm dairy…’ |
| 4.2 | Climate Data, Precipitation (Mean Annual Rainfall) | Follow Recommendation 1 i.e. use the climate station tool. For blocks that don't have the climate station option e.g. for "House" and "Trees and Scrub" blocks, the rainfall can be calculated by entering the latitude and longitude into a dummy pastoral block. |
| 4.2 | PET seasonal variation | Select "Low" for the Lake Rotorua catchment. |
| 4.3 | Soil description | Council uses soil data generated by Landcare Research and provided via S-map. Where the S-map on-line tool does not include soil moisture data for soils within the Rotorua catchment, Council has this data available and can provide it for each block. |
| 4.3 | Soil series, order, group or soil moisture values | Recommendation 1 is appropriate in the rare cases where a farm-specific soil produced by a trained soil pedologist is available. Otherwise, use Recommendation 2 whereby soil moisture values are obtained from S-map. Do not use ‘soil order’ characteristics.The dominant soil type (referred to as sibling name) for each OVERSEER block is calculated geospatially. The soil type and associated soil moisture data can be provided through the Advice and Support service, or where a farm block map has been supplied. |
| 4.7 | Susceptibility to pugging or treading damage | Select ‘rare’ for all soils defined as well-drained in S-map. Do not use the Dairy Industry recommendation to ‘Select “Occasionally” for all soil types’. |
| 4.16 and Appendix 7 | Specify crop type / product yield | Select ‘typical yield’ for crops unless there is supporting evidence for an alternative yield amount. Note that the Input Standards provide detailed guidance on crop input parameters in Appendix 7. |

1. From the Preface of OVERSEER® Best Practice Data Input Standards for Version 6.3.0 [↑](#footnote-ref-1)