BEFORE THE TAUPO DISTRICT COUNCIL

IN THE MATTER of The Resource Management Act 1991

AND

IN THE MATTER Proposed Plan Change 34 (Flood Hazard) to the Taupo District Plan

STATEMENT OF EVIDENCE of PETER BRYANT STEEL, CIVIL ENGINEER FOR THE FRIENDS OF LAKE TAUPO

Qualifications and Experience

1. My name is Peter Bryant Steel. I am a Chartered Professional Engineer and a Fellow of Engineers New Zealand. I have the qualifications of Bachelor of Civil Engineering and Bachelor of Commerce and Administration. I have been in professional practice as an Engineer since 1979.

2. In my professional career, I worked for the Beca Group between 1979 and 2008, commencing as a Graduate Engineer and advancing to positions of Principal and Technical Director of Civil Engineering covering work in coastal, port and marine engineering projects, water and wastewater, infrastructure asset management and civil infrastructure development.

3. Between 2008 and 2013 I worked as General Manager Network Engineering at KiwiRail, with responsibility for technical overview of all network infrastructure and engineering activities and the assessment and management of infrastructure risk for the rail network.

4. Between 2013 and 2016 I worked as Managing Director of SMEC New Zealand Ltd, an international consultancy with a substantial business in dam and hydropower engineering. The SMEC New Zealand office operated as one of three international centres of excellence for Dam and Hydro Engineering within SMEC with projects in Australasia, South-east Asia, South Asia and Africa.

5. I have 37 years of experience in civil engineering.

6. My expertise is in areas relating to technical and commercial risk for civil engineering activities and projects. I have applied my expertise in assessing the flood levels proposed for Lake Taupo and the risks associated with these as well as the proposed changed levels resulting from climate change.

Introduction

7. In addressing the potential need for higher flood levels for Lake Taupo, there are a number of key questions relating to a risk focused approach:
   - What is an appropriate assessment of risk of increased rainfall causing flooding, given the state of knowledge of climate change in the Taupo catchment?

- What is an appropriate response and risk allocation to respond to this. How does this compare with existing risk allocation and expected responses to flood events?
- Who is best placed to address any change to the potential changed risk?

8. Currently Lake Taupo is a managed lake, with the primary control for the lake level being the control gates at the discharge from the lake into the Waikato River. Flood events are superimposed on the base level of the lake which is set by the control gates.

9. The Resource Consents for the operation of the issued in 2006 by the Waikato Regional Council to Mighty River Power – now Mercury, have already set down rules and associated levels for flooding on the lake for various return period storms. These rules include a substantial allowance for climate change. This existing flood management framework has been ignored by the documentation supporting this Plan Change. The rules in the Consents are the primary statutory control for lake levels and flooding of the lake.

10. The following table compares the flood levels under the existing Consents with those proposed by the Plan Change:

Average Return Interval	**MRP Consents Conditions**	**Proposed under Taupo District Council Plan Change 34**
Upper Lake Level allowed for control for generation of electricity	**357.25m**	
5 year ARI	**357.25m**	**357.46m**
20 Year ARI	**357.39m**	**357.64m**
100 Year ARI	**357.50m**	**357.79m**
Lake Taupo Compensation Claims Act – compensation level	**357.387m**	

11. The existing consented flood levels include a 12% increase in rainfall as a result of climate change. The Commissioners for the Consents also concluded that the lake level management regime imposed by the Consents would reduce flood risk and occurrence.

12. The technical analysis which has been used to support the flood levels proposed for the Plan Change is excessively conservative and is at odds with the evidence put forward for the Consent Hearings in 2003.

    The conservative assumptions include:

    - There is no provision for mitigation for increases in rainfall resulting from actual and expected increases in plantation forest in the Taupo catchment. The only analysis provided is for removal of forest areas with a change to pasture. This is not supported by current trends and is not allowed by land use controls for the catchment.

- The allowed flood levels will be created by a combination of two or more unrelated events. As an example it is very extremely unlikely that a 1:100 year flood will occur at the same time as a 1:100 year seiche event.

  (NIWA section 4.3.2 and pg 6 Para 2 and Opus 2015 Section 5.2)

13. The highly conservative assumptions are backed up by the NIWA Peer Review. In a statement relating to the acceptability of the technical work undertaken by Opus, NIWA concludes their Executive Summary:

    "If these studies were to be used for major capital works for protection of assets or for denying planning approval to large projects, we suggest that our recommendations regarding alternative frequency analysis methods, dealing with uncertainty, potential compounding of probabilities, and aspects of data collection for hydraulic model calibration, be addressed."

14. There are hundreds of private lakefront properties affected by this plan change in addition to the publicly owned assets and properties near the rivers. The aggregate value of the affected private properties alone is in excess of $200 million. These properties comprise a major capital asset require additional, proper analysis to be undertaken as recommended by NIWA. This proper analysis has not been undertaken.

Overview and Basis of Evidence

15. In preparing my submission on this Plan Change and this Evidence, in addition to the Opus Report "Taupo District Flood Hazard Study – Lake Taupo Foreshore" of June 2014, and the Opus Report "Taupo District Flood Hazard Study – Stage 1" of 2008, plus the NIWA Report "Peer Review of Taupo District Flood Hazard Reports" of March 2015, I have drawn on four primary sources of information:
    - The Mighty River Power Waikato River Hydro System Consents which commenced on 12 April 2006 and run until 2041.
    - The Mighty River Power Taupo Waikato Consents Decision Report prepared by the Commissioners for the Consents, dated 29 August 2003.
    - The Evidence of Horace Freestone presented in 2001 at the hearings for the Consents. This is important as it is specifically referred to in the Consent Report, and provides reasoning for the (then) proposed removal of the seasonal lowering of Lake Taupo, and the assumptions relating to Climate Change that were proposed for the Consents.
    - The Report of March 2018 "Lake Taupō Foreshore Monitoring - Five-Yearly Critical Analysis" prepared by Opus for Mercury Energy, which presents information relating to the Review clause in the Consents.

16. These documents show a strongly different view of flood risk and levels to that being presented to this Plan Change. The Consents were supported by technical information prepared by Opus - the same Consultants who have prepared the technical reports supporting this Plan Change and who argued for the reduced flood provisions allowed by the Consents in 2006. Since 2006 Opus have provided reports including the Five Yearly Critical Analysis to show that there is no need for a Consent Review, because the technical basis of the Consents continue to be appropriate.

Lake Taupo is a Controlled Level Hydro Reservoir

17. Since the start of operation of the outlet Control Gates on the Waikato River in 1941, Lake Taupo has been managed as a hydro reservoir for the Waikato hydro dams. With the enlargement and lowering of the outlet channel undertaken in association with the Control Gate construction, the uncontrolled, "gates open" level of the lake has been approximately 1.2 metres lower than the lake level prior to the construction of the control gates This is referred to as the "no-consent" baseline in the Consent Report (references Sections 8.2 to 8.6 and 10.2.1 of the Consent Report and 10.36 of Freestone evidence).

18. If the control gates are held fully open at all times, the lake would never rise to any level above approximately 356.50m, that is around 750mm below the current Maximum Control Level. (Reference 10.38 and Figure 10.11 of the Freestone evidence)

19. The Commissioners for the Consents were clear in their view that all lake levels above the No-Consent Baseline level are as a result of the exercise of the Consents that they granted. This means that the Consents applies at all times and for all levels of Lake Taupo including during flood events.

20. Lake level management provided by the control gates means that, for any recorded or potential flood, if the control gates are opened sufficiently in advance, the lake will not rise to any set flood level.

21. Proactive management of the lake levels to reduce flooding is required by the Consents and has been ignored by the Opus technical studies supporting this Plan Change.

22. As an example, for the 1998 flood the lake rose to 357.493m, which is 106mm above the Compensation level for the lake. I am not aware of the exact flows during the period prior to this flood but if the discharge through the control gates had been increased from the median annual flow to the discharge capacity of 310 cumec for less than three days, the lake level during this flood would not have exceeded the Compensation level.

23. The Compensation legislation and the original work on setting the control levels for Lake Taupo dates to a time before the introduction of weather satellites which now assist proactive management of the lake level by forecast tracking of severe storms and rainfall events, and which came into regular use in the early 1970s. Evidence of this is provided by the reducing occurrence of Compensation lake levels and reduced exceedances of the Maximum Control Level since 1947 which are summarised below from Table 3.2 of the 2015 Opus Flood study:

Decade	Number of years covered	Compensation Level Exceedances		Maximum Control Level Exceedances	
		Number	Years	Number	Years
1940s	3	1	1949	3	1947, 1948, 1949
1950s	10	3	1953, 1956, 1957	5	1952, 1953, 1956, 1957, 1959
1960s	10	1	1962	7	1962, 1963, 1964, 1965, 1966, 1967, 1968
1970s	10	0	-	2	`1970, 1972
1980s	10	0	-	4	1983, 1985, 1986, 1988
1990s	10	1	1998	2	1996, 1998
2000s	10	0	-	1	2004
2010s	7	0	-	2	2010, 2011

24. During the 1950s, there were three compensation events, reducing to one during the 1960s decade and a single event in the near five decade period since 1970. Similarly, the occurrence of floods exceeding the MCL level of 357.25 have substantially reduced since the 1980s.

25. Further to this, the lake level occurrence graphs shown in Figure 4.4 on Pg 19 of the Five Yearly Critical Analysis Report show a reduction of the occurrence of extreme high and extreme low lake levels since the year 2000.

26. It is clear that Mercury is working well, using the Control Gates to manage the lake levels and proactively avoid flooding as required by the Consents. I also note that the report into Mercury's management of the January 2011 floods states that the gates were opened in advance of the rain event which caused the flood, as expected by the Consents.

27. In future, with ongoing improvement in weather forecasting being provided by research into climate change models and long term weather forecasts, it is reasonable to expect further improvement in forecasting of high rainfall events which will give more warning of flood events and assist proactive flood management for the Taupo catchment, consistent with the expectations of the Commissioners for the Consents.

28. In addition to the Consents, which provides the statutory basis for management of flood levels, there is a further control on lake levels for Taupo in the Lake Taupo Compensation Claims Act 1947 which provides for compensation of affected parties if the lake level exceeds a level of 357.387 m and relieves Taupo District Council from liability for flooding of the lake. This legislation refers simply to "control" of the lake above this level without reference to any cause, so applies to any occurrence of use of the control gates to cause the lake to exceed this level, either for hydro management or for control of flooding in the Waikato River.

Existing Consents and Legislation relating to Flooding of Lake Taupo

29. There have been statutory controls on flood levels in Lake Taupo since 1947 when the Lake Taupo Compensation Claims Act was passed, with maximum/minimum control levels being

developed by the 1960s. The Consents for managing the level of the lake and the discharges into the Waikato were last renewed in 2006 with the following Conditions:

2.1 *The consent holder may at any time operate the Taupo gates to manage the level of Lake Taupo, for the purpose of water storage for hydro electricity generation, between the following control levels:*

- *357.25 masl (maximum control level),and*
- *355.85 masl (minimum control level)*

2.4 *The Taupo gates may not be used to manage the level of Lake Taupo above 357.25 masl primarily for the purpose of generating electricity. If at any time the lake rises above this level, then the Taupo gates shall be operated in such a way so as to return the level of the lake to 357.25 masl as soon as is practicable.*

2.5 *The consent holder shall operate the Taupo gates according to a management regime designed to achieve the following objectives for the level of Lake Taupo:*

- *A less than 20% annual exceedance probability of 357.25 masl (i.e. an average I in 5 year recurrence interval).*
- *A less than 5% annual exceedance probability of 357.39 masl (i.e. an average 1 in 20 year recurrence interval).*
- *A less than 1% annual exceedance probability of 357.50 masl (i.e. an average I in 100 year recurrence interval).*

5.1 *High Flow conditions will be deemed to exist in the Waikato hydro system when one or more of the following occurs:*

- *Lake Taupo levels exceed 357.25 masl;*
- *Waikato River flow is greater than 850 m^3/s at Ngaruawahia;*
- *Catchment and/or river inflows cause or seem likely to cause any of the hydro reservoirs or Lake Taupo to rise above maximum control levels as described in conditions 2.1 and 3.1*

30. Condition 5.1 of the Consents in its reference to “seems likely” requires proactive management of potential flood occurrence in Lake Taupo or elsewhere in the catchment.

31. The Consent Report discusses the Commissioners expectations that floods would be managed under the Consents (Section 10.2.1 Pg 51 para 3);

> *However the management regime discussed in Section 9 above and imposed by Condition 2.5 will force lower lake levels during times when inflows to the lake are expected to raise its level above the maximum control level. It is through this mechanism that we see the incidence of flooding and erosion around the eastern and southern sections of Lake Taupo under the future operating regime to be no worse than under the present operating rules.*

32. My view is that the Consents and the LTCC Act are quite consistent with the operation of a hydro lake, with appropriate provisions for breaches of the consent conditions in the event of excessive flood levels and breach of the LTCC Act. This is in complete contrast with the Plan Change lake levels which present an unmanaged lake regime - not what is intended or being delivered under the Consents.

Provisions for Climate Change

33. Estimating the increase of runoff into Lake Taupo resulting from climate change is the most fundamental assumption for determining the need for any flood protection in addition to that provided by the Consents.

34. Both the submissions supporting the 2006 Consents and the submissions supporting the current Plan Change include predictions of climate change generated rainfall increase for the Taupo catchment.

35. For the Consent, climate change was not covered in the Assessment of Environmental Effects. Temperature induced rainfall increase assumptions for the Consents were covered by evidence presented to the Hearings by an Opus Expert Witness, Horace Freestone. The information presented is not detailed but is very clear in its assumptions of the magnitude of climate change assumed for the Consents:

    9.4 *A climate review suggests there could be an increase in rainfall of 12% in the next 35 years. This implies an increase in stream flow.*

    9.5 As well as this, rainfall intensities are expect to increase too, so that a daily rainfall with a return period of 100 years will show a return period change to between 30 and 60 years. That increased rainfall is reflected over the whole flow spectrum.

36. These assumptions of climate change for the Consents can be compared with the assumptions made for the Plan Change and the information provided by the 2018 Five Yearly Critical Analysis Report.

37. The Plan Change estimates of 2014 are for a 7.2 % increase in rainfall runoff into the lake in 30 years by the 2040s and a 16.8% increase in 80 years by the 2090s, which compared with the 2003 estimate of a 12% increase in 35 years by the late 2030s. The latest report, the 2018 Five Yearly Critical Analysis shows that the increased rainfall has not yet occurred.

38. Further to the delay in increased rainfall, the Opus Technical Studies include specific work analysing the relationship of temperature and rainfall for the Tongariro River, and finds that there is no relationship for this catchment ie flows do not increase with increasing temperature. (Opus Lake Taupo Foreshore Report Section 5.2 and NIWA Peer Review Section 4.3.2 Para 5).

39. Uncertainty for climate change temperature induced future rainfall changes for the Taupo catchment is also consistent with general national climate change assessments of higher rainfall in the west and reduced rainfall in the east - what does this mean for Taupo in the centre?

40. While climate change is clearly expected to deliver temperature increases, the Opus work shows that there is no clarity that these will result in rainfall increases for the Taupo catchment and no certainty as to the time it will take for these to become evident.

41. Based on the average temperature increases now assessed, the Freestone forecast of a 12% rainfall increase now relates to a 50 to 60 year increment towards the current forecast of 17% rainfall increase in 80 years.

42. In terms of increased rainfall intensities, Freestone's description of return periods from 100 year events becoming 30 to 60 year events as a result of climate change is consistent with Opus 2008 Table 4.8 lake levels which show current 100 ARI year lake rise events changing to a similar rise for a 50 year ARI event under the 2030s climate change scenario.

Afforestation in the Taupo Catchment

43. The reports supporting the current Plan Change and those supporting the Consents use the same information to consider the effects of afforestation changes in the Taupo catchment. However they use it in diametrically opposed ways. Evidence presented to the Consent Hearings considered afforestation as a mitigation for rainfall increases resulting from climate change. The Plan Change Technical Reports consider the removal of all forest from the Taupo catchment which results in substantial increases of peak inflows to the rivers and Lake.

44. The conclusion made by Mr Freestone in Section 18.11 of his evidence for the Consents is:

    18.11 In a similar vein we studied the likely effect of climate and land use change over the next 35 years and found that water yield would increase with increasing rainfall but would decrease an equivalent amount as a result of increased afforestation. The net result Is no significant change, except of course for reduction in TPD diversion flows.

45. Freestone's view that increased rainfall would be offset by increased afforestation are further developed in his evidence. In Section 9.7 of his evidence states that he anticipates an increase of 8% in the percentage of the Taupo catchment in 35 years, which relates to his assessment of the 12% increase in rainfall being offset by this increase in the forest area. On this basis of Freestone's work, a pro rata increase to reflect a 16.8% rainfall increase would require a 11.2% increase in forestry planting.

46. The current situation in the catchment and in terms of National and Regional Policies is:
    - Between 2001 and 2012 there was an increase of 2.2% in the area of plantation forest within the Taupo Catchment. (Waikato Regional Council provided figures). WRC were unable to provide information later than 2012.
    - The current Government has significant policy targets and initiatives seeking to expand forest planting.
    - For the Taupo catchment, the imposition of Nitrogen management requirements within the catchment, as a result of Waikato Regional Council Plan Change 5, means that it is not possible to expand and apply fertiliser to new pastoral areas. Forestry is an acceptable and appropriate land use which is consistent with Plan Change 5.

47. I conclude that it is highly likely that forest planting will increase in the time frame of the Consents and beyond as noted by Freestone. This is a substantial mitigation of increased flows, which is ignored by the Plan Change reports.

Seiche

48. Section 7 of the Opus 2014 Lake Taupo Foreshore Report is clear in that seiche is induced lake level variation and is independent of flood occurrence. Lake levels are required to be managed to the Consent level maxima and are subject to the Lake Taupo Compensation Claims Act. Freestone considers seiche in section 10.31 of his Consent evidence, concluding that it is not significant. It is included in the Consented lake levels.

49. As independent occurrences, the combination of a 100 year flood with a 100 year seiche gives a 1 in 10,000 year occurrence, which well beyond the 100 year return period criteria being considered for flooding of Taupo.

Consent Review Provisions

50. The potential for Review of the Consents is relevant to this Plan Change as a review is allowed where information presented in support of the Consents is found to be inaccurate.

51. Review of the Consents would be in accordance with Section 128 of the Resource Management Act. The Consent Conditions provide that reviews are able to be considered at five yearly intervals commencing from 2013. The current year, 2018 is a Review year and at the time of writing of this evidence, there has been no response by the Waikato Regional Council as to the requirement for a review. The Friends of Lake Taupo have submitted that a review is essential, given the differences between the work supporting this Plan Change and that supporting the Consents.

52. The RMA consent review provisions relevant to the Consents allow a review to be initiated in the following circumstances:

> *To deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or*
>
> *If the information made available to the consent authority by the applicant for the consent for the purposes of the application contained inaccuracies which materially influenced the decision made on the application and the effects of the exercise of the consent are such that it is necessary to apply more appropriate conditions.*

53. The 2018 Five Yearly Critical Analysis Report provides information to support the Mercury position that no Consent Review is needed. This Report has a primary focus on shoreline management and erosion, reflecting the significant increase in erosion occurrence and erosion management costs which have been incurred by lakeshore land owners over the past five years. It also includes a review of rainfall and hydrology for the lake catchment which is summarised in its Conclusion:

The inflows to Lake Taupō from 2012-2017 were less than over the proceeding period analysed (2004-2011). Most inflow over this period was lower than over any period from 1980-2017. The maximum inflow over the past five years was 802m³/s, compared with 1024m³/s during the 2004-2011 period.

Despite the past five years being characterised by lower than average inflows, they are not atypical. Inflows have been lower at various other times. These lower than average inflows are reflected in the generally lower lake levels when compared to the previous five years. This period of lower than average inflows is reflected in 'compressed' lake level variation i.e. lower maximum and higher minimum lake levels than the longer-term average. During the previous period analysed (2004-2011), the lake level spent 66% of the time above the long-term median because of higher inflows over that period, compared to only 52% of the time over the past five years.

54. The Planner's Section 42A Report prepared for these Hearings states that it is not possible for Taupo District to require the Waikato Regional Council as a separate authority to take action. However the WRC are responsible for the management of floods in the catchment and the Taupo District Council are responsible for setting flood levels for adjacent land areas. These two responsibilities directly interact with each other. There is a very substantial difference in the flooding provisions in place and being considered by each party, and there is the provision for a Review of the Consents. These differences need to be properly considered and resolved, not ignored.

55. The Commissioners for this Plan Change can request that the WRC review the Consents if they consider that the Consented flood levels are no longer appropriate.

Issues raised by NIWA in Review Report

56. I have not undertaken a detailed technical review of the Opus technical studies. I will highlight a number of issues raised by NIWA as Peer Reviewer for the studies which all reflect conservative assumptions for the work supporting the Plan Change.

57. The Niwa report "Peer Review of Taupo District Flood Hazard Reports" of March 2015 adopts very soft and uncritical language but identifies a number of issues where NIWA disagree with the assumptions, methods and conclusions used or developed by Opus:
    - Opus's extrapolation of flood frequency distributions is inadequate and needs to be reconsidered. (Page 4 paragraph 3 of NIWA Review Report).
    - Opus's Combinations of 100 year river/stream floods with 100 year lake levels are much rarer than a 100 year event and therefore do not fit the required 1% AEP criteria. (Page 4 Paragraph 4 and Section 4.3.2 Page 24 Para 3 of NIWA Review Report).
    - Hydraulic modelling is compromised by inadequate or absent calibration data. (Page 4 paragraph 5 of NIWA Review Report).
    - Opus's addition of the effective lake levels with climate change and seiche effects at a given return period overestimates the true combined lake level at that return period. (Page 5 Paragraph 6 of NIWA Review Report).

- Opus's approach to estimation has added conservative assumptions at each stage which will have provided a higher level of protection than is appropriate and at a very high level, or very low annual exceedance probability (aep). (Page 6 Paragraph 2 and Section 5 Page 30 Paragraph 1 of NIWA Review Report).

58. Separate to the NIWA comments on combination of 100 year lake level and river flooding events that do not fit the AEP criteria proposed for the Plan Change, I note that the proposed Lake flood levels include the addition of a 100 year seiche to a 100 year flood level. This is completely incorrect for the criteria of a 100 year return period event. Seiche and flood occurrence in Taupo are statistically independent. The simple statistical combination of two such 100 year events is a 10,000 year event, which is completely inconsistent with the Council's intention to protect against 100 year occurrences. This alone reflects the need to adopt lower Lake flood levels than proposed by the Plan Change.

59. The Opus response to the NIWA review report defends the conservative assumptions and states that these are aimed at balancing out some factors that have been under estimated. There is a clear list of overestimated issues. There are no factors that have been under estimated. I consider that the criticism of excessive conservatism is correct.

60. The excessive conservatism based on an assumption of an uncontrolled lake level, combined with the reality that the lake is actively managed means that the proposed flood levels are very excessively conservative and are unacceptably high.

Conclusion

61. The level of Lake Taupo is managed by Mercury and this management extends to all lake water levels. Mercury are delivering well on lake level management in terms of flood avoidance and their report on the January 2011 floods states that they are proactively lowering the lake in advance of forecast flooding. Figure 4.4 of the Five Yearly Critical Analysis also show a reduced occurrence of the highest lake levels since 2000. Legislation and the Consents provide an appropriate framework and incentives to manage and avoid flooding. The Consent Report clearly established that any lake level – including flooding lake levels – is covered by the Consents.

62. The Consents were based on similar climate change information as has been considered for this Plan Change, with a shorter time horizon for this change to that proposed for the Plan Change. Mercury in accepting their consent conditions and working under these has accepted the need to manage lake flood levels that result from climate change.

63. The Five Yearly Critical Analysis Report of 2018 states that there are no issues in relation to flooding of the lake and that the existing Consents continue to be appropriate.

64. If there is a strong view that there are issues relating to flood levels and climate change beyond the expectations of the Consents, then the Consents should be reviewed. The Commissioners

can request that the Waikato Regional Council review the Consents as allowed by the Consent conditions.

65. In any event the Resource Management Act expects integrated management of the environment. Setting of conflicting flood levels and occurrence criteria under the Consent and this Plan Change is not consistent with the RMA and must not be allowed to proceed without a full review of the differences.

66. Sound risk management practice leaves a risk with the party with the best capability to manage the risk. In this case, for flood management in Lake Taupo, the primary means of reducing of flood risk is proactive management of the control gates. The management of the control gates rests with Mercury who have Consents and set limits for flooding until 2041. Other elements of risk management and mitigation are additional afforestation and review of the Consent to adjust lake level management regimes and lake control or flood levels. These are secondary to the Consents and should be considered only after inability to meet the Consents is clearly established.

Recommendations

67. Given this I request that the Commissioners:
    - Amend the flood levels included in the Plan Change to the Consented flood levels, with river backwater levels to reflect the lower flood levels near to the lake which result from these consented flood levels.
    - Recognise the Lake Taupo compensation legislation in flooding management for the margins of Lake Taupo.
    - If the Commissioners do not wish to amend the Plan Change flood levels to be consistent with the Mercury Consented flood levels, the Commissioners should request that Waikato Regional Council review the conditions of the Consents to reflect the changed information presented to support this Plan Change.

Peter Steel

16 October 2018