Before Commissioners appointed by The Nelson City Council

IN THE MATTER OF	The Resource Management Act 1991
AND	
IN THE MATTER OF	An application for resource consents by the Nelson Regional Sewerage Business Unit

REPORTING OFFICERS' RESPONSE TO APPLICANT'S CONDITIONS

20 January 2018

Introduction

1. In Memorandum 2 to Participants (15 December 2017) the Independent Commissioners hearing the application by the Nelson Regional Sewerage Business Unit for three discharge permits directed that the applicant was to provide a new set of draft conditions by 20 December 2017, and that the reporting officers were to provide written comment on the draft conditions proffered by the applicant by 20 January 2018. The Independent Commissioners further directed that comments from the reporting officers were to focus on areas of agreement and disagreement with the applicant's draft conditions, and the reasons for any disagreements.

2. This response outlines comment on selected conditions provided by the applicant. Dr Phillips, Ms McArthur and Ms Lojkine have reviewed the conditions and provided input to this response. Dr Fisher is unfortunately on extended sick leave and has therefore been unable to be involved. Conditions are addressed in numerical order. Where no comment is provided on a condition, the reporting officers are in agreement with the applicant in terms of that condition. A tracked change version of the conditions is attached.

Condition 3

3. It is not clear from the current wording of Condition 3 what information is being referred to in relation to 'the level of service for operation of the pump stations set out in the further information provided on 26 August 2016'. We assume that the applicant is referring to the updated Figure 2 that was provided in that further information response.

4. We recommend that the wording of Condition 3 be amended to specifically refer to an attached figure, and that the updated Figure 2 from the further information response be attached to the consent, and have provided amended wording for Condition 3.

Condition 6

5. We recommend a minor amendment to Condition 6 in terms of when the consent holder should provide advice to the three industrial contributors that discharges may re-start, in order to ensure the risk of a discharge is reduced as far as possible.

6. We also recommend that Condition 6 is amended to reference the existing contingency plan for managing the industrial discharges in times of dry weather flow malfunctions or pipeline ruptures, and have provided amended wording for Condition 6.

Condition 7

7. We recommend that tide, wind and rainfall conditions are also recorded for each discharge overflow, and have provided amended wording for Condition 7. This will enable an adequate assessment of effects of any overflow in relation to the modelled effect conditions.

Condition 8

8. We recommend some minor amendments to Condition 8(a) and (c). We consider that an appropriately qualified and experienced ecotoxicologist should be involved in writing the Environmental Monitoring Plan in order to ensure that the WET testing is specified correctly. The reference to 'cultural health indexing' should be changed to 'cultural health monitoring' in Condition 8(c).

9. In relation to the requirement for WET testing, there remains a disagreement between the reporting officers and the applicant about the necessity of conducting a background WET test. The purpose of the background WET testing is not to replace "traditional" macrofaunal community assessments (as suggested in Ms Johnston's supplementary evidence of 19 December 2017). Rather the purpose is to establish the potential ecotoxicity of the discharge (as a whole), which has not been addressed by any of the applicant's evidence.

10. The applicant's evidence uses dissolved copper and BOD as surrogates to infer chronic and acute toxicity, but this approach does not account for discharge components that do not have an established toxicity guideline value (and which are potentially more toxic than the surrogates). In addition, it does not account for the potential effects of combined toxicants within the discharge (which could be additive or synergistic). The background WET test would fill this gap in the applicant's evidence. This background information would then provide an indication of whether or not significant effects are likely following an overflow event, and at what level of dilution effects are negligible (i.e. within the range of control results). On the basis of the results of the background WET test a decision tree should be developed and included in the EMP to outline actions to be undertaken to reduce the effects of the discharge if the background WET test shows toxicity effects are likely to occur. A requirement for a background WET test will therefore allow the applicant to be appropriately and proactively prepared to address any effects of overflow discharges, rather than being in the position of reacting to a toxicity effect or requiring a review of the consent conditions (with its attendant time delays).

11. As there is likely to be some temporal variability in the discharge composition (due to variation in the discharges from the major contributors and in sewage effluent more generally) we suggest that background WET testing be undertaken on a 24 hour composite sample. It will also be necessary to undertake the testing at a time when the three industrial contributors are discharging at typical rates into the NRSBU infrastructure. Post-overflow event WET testing would be necessary to confirm or otherwise the toxicity of an overflow against background WET testing results and to provide a trigger for implementing actions under the decision tree contained in the EMP. In addition, we consider that the background WET testing should be repeated on a 5-yearly basis, as this approach acknowledges the potential variability in discharge composition over time.

12. On this basis, we recommend amended wording for Condition 8(1), as outlined in the attached.

13. We note that, if WET testing shows the background effluent and subsequent overflows are more, or less toxic than anticipated by the application and subsequent technical advice to the Commissioners, monitoring can be revised consistent with that outcome under Condition 14 to increase or decrease the frequency and effort accordingly. Condition 21 also provides for a review of the consent conditions overall if significant toxicity effects occur as a result of a discharge.

14. We also consider that for any discharge that meets or exceeds the discharge volume thresholds specified, a sample should be tested for soluble carbonaceous BOD_5. As the Commissioners will be aware, it is the BOD_5 in any discharge that may cause lowered dissolved oxygen levels. If sampling shows that the BOD_5 is low, then any low dissolved oxygen levels that are found may be considered to have resulted from a source other than the discharge. Measuring both dissolved oxygen and BOD_5 provides an assessment of the relationship in the

receiving environment following a discharge event. We have therefore recommended amended wording for Condition 8(3) in the attached.

15. Condition 8(5) does not provide sufficient certainty, and differs from Conditions 8(1), (2) and (3) which provide guidance on what the design of the sampling is meant to achieve. We have provided amended wording for Condition 8(5) to address this.

Condition 9

16. We recommend that reference to 'iwi' in Condition 9 is amended to 'those iwi who have received statutory acknowledgement' in order to match Condition 12. We have also recommended a minor wording amendment to ensure that it is the information generated by the EMP that enables iwi to understand effects on their values. As currently written the condition appears to suggest that it is the way in which the information is presented that the author of the EMP is to be satisfied with.

Condition 10

17. We recommend some minor amendments to the wording of Condition 10(2) to recognise that over the term of the consent recreational water quality guidelines may change, and have provided amended wording for Condition 10(2).

Condition 17

18. As noted in the reporting officers' response at the hearing, the current Emergency Procedures Manual is not sufficient. The current manual was a subject of the first request for further information. The two specific questions asked about the manual were as follows:

    - *Please advise where signage is placed following a discharge (i.e. is signage placed at all contact recreation sites? All access points? Only in proximity to the discharge location? How is this determined?)*
    - *Please advise how long signage remains in place and how it is determined that the health risk has passed following a discharge event. The application mentions that Environmental Monitoring undertakes sampling for this purpose. What is the programme of sampling undertaken, how long is sampling undertaken for, and how was the programme of sampling determined? Is there a record from this sampling that could be used to inform a more direct assessment of the pathogenic health risk from discharges, and if so, please provide that record.*

19. In response, the applicant provided further information on 26 August 2016 including a more detailed description of the public health response and risk management, particularly noting the role and tasks undertaken by a dedicated Sewage Spill Team that is established for each incident.

20. Dr Hudson's primary and supplementary evidence also contains recommendations on monitoring the risks to human health following discharge events that should be incorporated into the Emergency Procedures Manual, as should the applicant's offered approach to require the industrial discharges to cease if overflow discharges appear likely in heavy rain events. Mr Molloy's review of the procedures considered both the current Emergency Procedures Manual and the Nelson Marlborough District Health Board HPO procedures and considered that <u>together</u> they were sufficient (emphasis added).

21. We therefore remain of the opinion that the current Emergency Procedures Manual needs to be updated and resubmitted to the consent authority. We have recommended amendments to Condition 17 as attached, reflecting the original conditions recommended in the section 42A report adjusted to recognise the approach now proposed through the development of the Environmental Monitoring Plan.

Condition 19 (now renumbered Condition 21)

22. As effects on both the environment and human health may occur as a result of the discharges, and are addressed in the EMP, we recommend a minor amendment to Condition 21(b) to include reference to human health.

23. We note that the distance of 200 metres for significant toxicity effects contained in what is now Condition 21(b)(ii) has been derived from the work undertaken by Cawthron in relation to the **median** levels of copper likely in the discharge. As noted above in relation to the discussion on WET testing, whether median copper concentration is the most appropriate indicator to represent the greatest risk of toxicity in the discharge is not currently clear, and WET testing may demonstrate that a shorter distance than 200 metres is more appropriate. We have therefore recommended amendments to the wording of Condition 21(b)(ii) to link it back to the results of the WET testing undertaken under Condition 8(1) and Condition 8(2).

24. As overflow discharges as a result of operator error have been occurring at less than three times per year, we consider the trigger for review in Condition 21(c) has been set too high. We have therefore suggested amended wording.

Minor corrections

25. We have suggested minor corrections to condition number cross-references in Conditions 11 and 15 to correct what we are assume are drafting errors.

Clarification by Frances Lojkine of legal submissions reply paragraph 12(a)

26. At paragraph 12(a) of the legal submissions reply Mr Maassen states that I confirmed that the assessment criteria in the NRMP are not applicable to the type of aberrational discharge in the application. For the record, this is not correct, and while the Commissioners asked Mr Butler this question, it was not put to me. In my opinion, while the NRMP has been operative for a considerable period of time now, and could therefore be considered to be an 'old' plan, its objectives, policies and assessment criteria apply to all discharges, including those of the type anticipated by the NRSBU application. In my experience the matters listed in the policies and assessment criteria are common matters considered for all discharges, including those that are only intermittent, and my analysis of the NRMP in the section 42A report therefore covered these matters in some detail.

Frances Lojkine	Kate McArthur	Ngaire Phillips
Stantec New Zealand	The Catalyst Group Ltd	Streamlined Environmental

Version 3 – Right of Reply – 19 December 2017

General Conditions:

1. This consent must expire 20 years from the date it commences.

2. This consent authorises discharges that are not deliberate and that arise from one or more of the following causes:

   (a) where flows in excess of the pumping capacity at each pump station occur due to heavy rainfall events; or

   (b) where electrical or mechanical failure results in a failure to pump at any pump station, and only until such time as pumping capacity is restored; or

   (c) where a control system failure or human error causes a discharge, and only until such time as pumping capacity is restored; or

   (d) where accidental rupturing or leakage of any pipework or pipeline fittings occurs, and only until such time as the rupture or leak is repaired.

   Advice note: the above are the foreseeable circumstances under which an aberrational discharge may occur. Other circumstances that result in a discharge to the coastal marine area will be considered emergency events and will be addressed as an emergency work under Section 330 by the consent holder.

3. The consent holder must maintain at least the level of service for operation of the pump stations set out in ~~the further information provided on 26 August 2016~~ Figure 1, which is attached and forms part of this consent.

Infrastructure and Management

4. Discharges from the Airport, Songer and Wakatu pump stations must pass through a screen that has an aperture dimension of not greater than 25 millimetres. Two years after the date of commencement of this consent this requirement also applies to the Saxton pump station.

5. Within two years of the date that this consent commences, the consent holder must install and commission a sampling chamber at the Saxton pump station for the purpose of detecting and sampling wastewater discharges.

6. (a) In the event that during a heavy rain event the wet-well capacity of the Saxton pump station reaches or exceeds 85% capacity, the consent holder must notify the three industrial contributors to the waste stream and require them to immediately cease discharging to the network until such time as they are advised by the consent holder that they may re-start their discharge. The consent holder shall only provide that advice when the risk of a discharge is reasonably assessed to be unlikely and the capacity of the Saxton pump station wet-well has reduced to below 85% capacity again.

   (b) The consent holder shall at all times maintain an up to date contingency plan to manage the discharges from the three industrial contributors in the event of a dry weather discharge or pipeline rupture, such that discharges from these contributors are reduced or cease as appropriate.

Monitoring

7. For each discharge overflow, the following must be monitored and recorded:

   (a) Pump station name or location of leak/rupture;

(b) Start date and time of discharge;

(c) End date and time of discharge;

(d) Estimated or measured peak flow rate during discharge; and

(e) Estimated or measured total volume of discharge.

Tide, wind and rainfall conditions for the duration of each discharge overflow shall also be recorded.

8. Within 6 months of the date of issue of this consent, the consent holder must provide an Environmental Monitoring Plan (EMP) to the Nelson City Council for certification. The EMP must be written by:

(a) an appropriately qualified and experienced marine ecologist for the ecological components, and an appropriately qualified and experienced ecotoxicologist for the WET testing;

(b) an appropriately qualified and experienced environmental health professional specialising in microbial health risk assessment for the microbiological components; and

(c) a person appropriately experienced in tikanga Maori and cultural health ~~indexing~~ monitoring.

In this condition the following definitions apply:

WET means Whole Effluent Toxicity

WET limit test means a WET test using a single receiving environment sample with no artificial dilutions applied

WET dilution test means a WET test using a series of dilutions

DO means dissolved oxygen concentration (expressed as milligrams per litre)

In this consent, where reference is made to "discharge volume thresholds" this shall mean a discharge of at least 300 cubic metres for a discharge not associated with a heavy rain event, and at least 2000 cubic metres for a discharge that is associated with a heavy rain event.

The EMP must contain the following:

(1) (a) A methodology for obtaining background DO, temperature, salinity, pH, electrical conductivity, and turbidity within 200 metres of the four pump stations to detect the early morning DO concentration minima in maximum wet and dry weather conditions;

(b) A methodology and requirement for a background WET limit and dilution test of a 24 hour composite sample of raw effluent during dry weather and wet weather conditions. Based on the results of the background WET testing a 'decision tree' outlining actions to be undertaken to address and/or reduce effects of the discharge in the event of evidence of significant toxicity (i.e. statistically significant from control results derived from the most toxic test result) shall be developed and included in the EMP;

(c) A requirement for background WET testing to be repeated on a 5-yearly basis from the commencement date of this consent, or in the event of an overflow, 5 years from the date of the overflow event.

(2) For any discharge that meets or exceeds a discharge volume threshold, a requirement for both a WET dilution test of raw effluent

from the sample chamber, and at least three WET limit tests of receiving environment water at the time of the next high tide when sampling is practicable and compliant with the consent holder's health and safety policy. The sampling shall be of a design that allows for determination of the spatial and temporal extent of any plume-related eco-toxic effects.

(3) For any discharge that meets or exceeds a discharge volume threshold, a requirement for measurement of DO, soluble carbonaceous BOD_5, temperature, salinity, pH, electrical conductivity and turbidity at the time of the next high tide when sampling is practicable and compliant with the consent holder's health and safety policy. The sampling shall be of a design that allows for determination of the spatial and temporal extent of plume related water quality effects and an assessment of the soluble carbonaceous BOD_5/dissolved oxygen relationship in the receiving environment.

(4) A framework for observing and recording characteristics of aberrational discharges, including but not limited to plume extent and conspicuous gross solids.

(5) That a response sampling programme involving collection of samples from not less than 5 locations to quantify enterococci and faecal coliform concentrations be undertaken following any aberrational discharge that meets or exceeds a discharge volume threshold. Design criteria to guide the location of monitoring sites (including be reference to the Emergency Procedures Manual specified in Condition 17) shall also be included, that allows for determination of the spatial and temporal extent of any plume-related increase in risks to human health.

(6) A protocol for assessment of effects on cultural health.

9. The EMP must be prepared in consultation with iwi so that the author(s) is satisfied the information generated by the EMP ~~is in a form that~~ enables iwi who have received statutory acknowledgement to understand the impacts of the discharge on the values of interest to iwi, and only to the extent that it is within the scope set out in Condition 8.

10. The EMP will be certified if it provides for the following outcomes:

(1) Provides information relating to the spatial and temporal extents of potential short-term ecological effects of aberrational discharges

(2) An adequate method for the assessment and reporting of human health effects to provide a reasonable indication of the extent of spatial and temporal effects on over a period of at least 3 days, except that testing may cease earlier if monitoring demonstrates enterococci concentrations are less than the lower threshold value for Category C (201 enterococci per 100mL) defined in the Ministry for the Environment/Ministry of Health Recreational Water Quality Guidelines (2003) for recreational contact (or a similar threshold if this is determined through the EMP or a change in the national guidelines on microbial contaminants in recreational waters).

(3) Provides an understanding of any cultural health effects arising from the discharge.

11. Before the certification in Condition ~~8~~10, the draft EMP must be reviewed for comment by a suitably qualified professional at the consent holder's cost and approved by the consent authority as to whether or not the EMP will achieve the outcomes required by Condition ~~8~~10.

12. Once certified, the consent holder must provide the EMP to those iwi who have received statutory acknowledgement[1].

13. The EMP must be implemented by an appropriately qualified and experienced science provider.

14. The EMP may be amended from time to time to change the monitoring requirements. However, before being implemented under Condition 13, the amended EMP must be provided to the Nelson City Council's Compliance Manager for re-certification under the requirements of Condition 8, and must be re-circulated to iwi (Condition 12).

Compliance and Monitoring Reporting

15. Within three months of the completion of background monitoring, and annually thereafter, a Compliance and Monitoring Report must be prepared by a suitably qualified professional, and submitted to the Nelson City Council's Regulatory Manager. Each report must cover the preceding 12-month period and must address the following matters associated with the exercise of the consent:

    (a) a record of discharges, including but not limited to the matters required to be recorded by Condition 7, that occurred during the period;

    (b) a record of any failures of the consent holder's pipework that result in a discharge to the environment;

    (c) the causes of these discharges and, where relevant, any work undertaken to avoid future similar occurrences;

    (d) the results of the monitoring undertaken under Condition ~~13~~ 8 and appropriate analysis of those results; and

    (e) recommendations for improvement of the EMP.

16. The report required by Condition 15 must be provided to iwi identified in condition 12 and shall also be uploaded to the consent holder's website.

Emergency Procedures Manual

17. ~~The consent holder must provide the current Emergency Procedures Manual that was provided with the resource consent application, and any update or replacement thereof, (the Manual) to the consent authority upon request.~~ Within six months of the commencement of this consent the consent holder shall update the current Emergency Procedures Manual, to set out procedures that will be followed for all discharges specified under Condition 2 from the consent holder's reticulation and pump stations to the coastal marine area. The Manual shall include, but not be limited to, the following matters:

    (a) identification and notification requirements for the Nelson Medical Officer of Health and parties potentially affected by discharges, including a full list of iwi representatives and contacts;

    (b) identification of the procedures that will be followed for events that may result in discharges occurring. This shall include, but not necessarily be limited to:

        (i) procedures that will be followed during power outages and pipeline breakages, particularly in relation to contingency measures for the three industrial contributors;

[1] s41 Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu and Te Ātiawa o Te Waka-a-Māui Claims Settlement Act 2014, s25 Ngāti Toa Rangatira Claims Settlement Act 2014 and s38 Ngāti Apa kit e Rā Tō, Ngāti Kuia, and Rangitāne o Wairau Claims Settlement Act 2014.

(ii) monitoring site locations and signage locations determined in accordance with the criteria included in the EMP to manage the risks to human health.

18. The consent holder must ensure that the contractors and staff responsible for the operation of the pump stations and reticulation understand and implement the procedures in the Manual relating to aberrational discharges.

19. The Manual referred to in Condition 17 shall be reviewed annually in consultation with the Public Health Service (Health Protection Officer).

20. A copy of the most recent Manual shall be provided to the Nelson City Council's Regulatory Manager and the Medical Officer of Health on its updating under Condition 17, and on 31 August each year.

Review of Consent

~~19~~21. The Council may, in accordance with section 128 of the Act, serve notice on the consent holder of its intention to review the conditions of this consent 12 months after the date of commencement of this consent and annually thereafter during the month of March, for any of the following purposes:

(a) to provide for synergies with other monitoring programmes that may be undertaken in the Waimea Inlet; or

(b) to deal with any adverse effects on the environment or on human health that may arise from the exercise of this consent beyond that anticipated by the application and demonstrated by the monitoring required by the EMP. In particular, the following effects on the coastal marine area or taxa in the coastal marine area reasonable attributable to a discharge(s) under this consent:

(i) eutrophication of the substrate; and/or

(ii) evidence of significant toxicity (i.e. statistically significant from control results derived from the most toxic test result) beyond 200 metres from a point of discharge as a result of one or more discharges (or such shorter distance as may be derived as a result of the WET testing required by Conditions 8(1) and 8(2)); or

(c) the incidence of operator error causing discharges exceeding ~~three~~ one occasion~~s~~ per year over a 3 year period.

(d) to require the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

Advice Note:

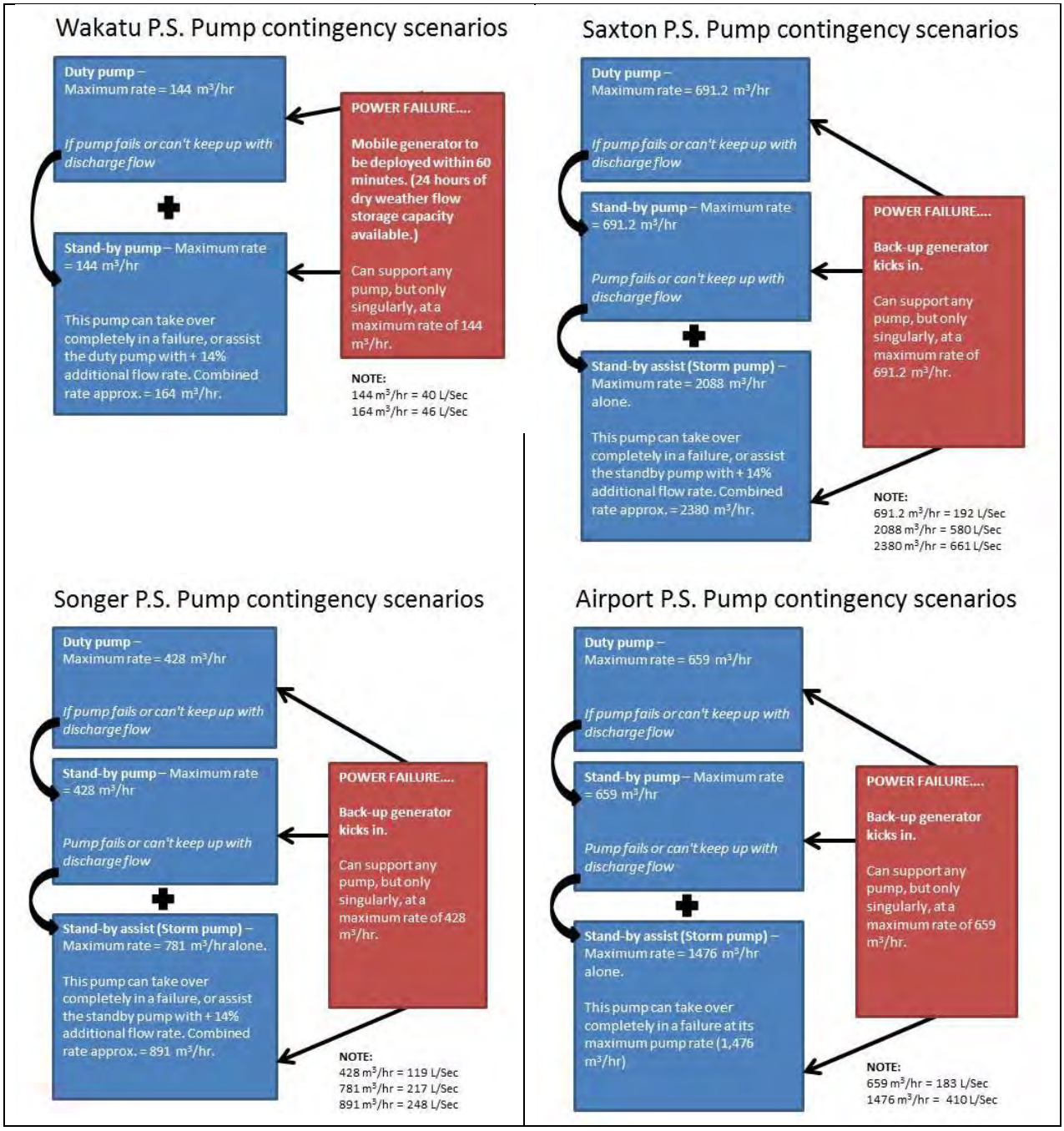
1. The Council may, in accordance with Section 128 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions at any time for the following purposes:

(a) to provide for compliance with rules relating to minimum standards of water quality in any regional plan that has been made operative since the commencement of these consents; or

(b) to provide for compliance with any relevant national environmental standards that have been made; or

(c) where there are inaccuracies in the information made available with the application that materially influenced the decision on the application and where the effects of the exercise of these consents are such that it is necessary to apply more appropriate conditions.

Figure 1: Level of service for operation of pump stations



Conditions for Discharge of Odour to Air

1. This consent shall expire 20 years from the date on which it commences.
2. This consent must only be exercised when discharges of untreated sewage under consents RM165114 and/or RM165115 are occurring.
3. Should the discharge of untreated sewage under consents RM165114 and/or RM165115 result in a discharge of offensive or objectionable odour, the consent holder must undertake clean-up measures as identified in the application dated 15 April 2016 as reasonably practicable to reduce the odorous effects of the discharge.
4. The Council may, in accordance with section 128 of the Act, serve notice on the consent holder of its intention to review the conditions of this consent 12 months after the date of commencement of this consent and annually thereafter during the month of March for any one or more of the following purposes:

   (a) to deal with any adverse effects on the environment that may arise from the exercise of this consent and which it is appropriate to deal with at a later stage; or

   (b) to require the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

Advice Note:

1. The Council may, in accordance with Section 128 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions at any time for the following purposes:

   (a) to provide for compliance with rules relating to minimum standards of water quality in any regional plan that has been made operative since the commencement of these consents; or

   (b) to provide for compliance with any relevant national environmental standards that have been made; or

   (c) where there are inaccuracies in the information made available with the application that materially influenced the decision on the application and where the effects of the exercise of these consents are such that it is necessary to apply more appropriate conditions.