

**BEFORE A HEARINGS PANEL OF THE GREATER WELLINGTON REGIONAL
COUNCIL**

UNDER the Resource Management Act 1991 (“the Act”)
IN THE MATTER OF resource consent applications to Greater
Wellington Regional Council pursuant to section
88 of the Act to discharge contaminants to land,
air and water
BY South Wairarapa District Council
FOR the proposed staged upgrade and operation of
the Martinborough Wastewater Treatment Plant

**BRIEF OF EVIDENCE OF KERRY MICHAEL GEANGE ON BEHALF OF SOUTH
WAIRARAPA DISTRICT COUNCIL**

PLANNING AND RESOURCE MANAGEMENT

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**EVIDENCE OF KERRY MICHAEL GEANGE ON BEHALF OF SOUTH WAIRARAPA
DISTRICT COUNCIL**

1. My full name is Kerry Michael Geange. I hold a Bachelor of Resource and Environmental Planning degree (with Honours) from Massey University (1997).

Experience

2. I have been practicing in planning and planning related roles since 1997, primarily in New Zealand but also in the UK. Since 2007 I have been the Director and Principal Planner at Geange Consulting, a specialist planning and resource management consultancy, based in the Wairarapa and operating nationally. Prior to this, I was the Central Region Planning and Environmental Science Group Manager for MWH New Zealand Limited ("MWH"), based in Wellington. I also held the role of the New Zealand Technical Co-ordinator for Planning and was on the Regional Management Team working closely with engineers and local government specialists.
3. I have, over my career, advised as a consultant planner to various national and regional network utility operators, central and local government, corporate clients, community organisations, and individuals. I have been involved in numerous resource consent applications, including involvement in the preparation and management of consent applications and assessments of environmental effects for various projects, and with policy and plan development processes on a wide variety of projects throughout New Zealand. This includes a number of projects involving municipal infrastructure. I have also assessed and provided evidence and recommendations on a range of resource consent applications on behalf of district councils, and also advised the Ministry for the Environment on the development of national rural landuse planning guidance. I have prepared expert evidence for

the Environment Court, including most recently in relation to non-complying subdivision and development in a rural environment.

4. I have also gained a good understanding of local government infrastructure operations, having managed professional services contracts for significant local government infrastructure, including a large Hastings District infrastructure services contract while with MWH. I also managed a significant (c. \$50 million) transportation programme in central London within the Mayor of London's Congestion Charging Scheme.

Background

5. This evidence is presented in respect of South Wairarapa District Council's ("SWDC") application for resource consents to enable the ongoing operation, maintenance and upgrade of the Martinborough wastewater treatment plant ("MWWTP Project" or "the Project").
6. I was engaged in 2012 to provide consent application advice for the Project, including the joint preparation of the application and associated documentation along with various experts and advising on the consent process. Since early 2013, I have been the principal planning advisor to the Council across all three WWTP applications, being Martinborough, Featherston, and Greytown.
7. I have visited the site on multiple occasions for the purposes of this consent project. I have walked the site itself, the discharge channel and river discharge point, and have visited the surrounding area including the proposed land discharge sites and adjoining areas. I am familiar with the locality, having worked on a number of landuse and discharge consents in the area over the last eight years.
8. I have read the briefs of all the expert witnesses and the Council officers which I will cross-refer to where applicable. My conclusions on resource management matters draw in part on this evidence as required.

Code of Conduct

9. I confirm I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2011 & 2014. I have complied with the Code of Conduct in preparing this evidence and I agree to comply with the Code while giving oral evidence before the hearing panel. Except where I state that I am relying on the evidence of another person, this written evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

SCOPE OF EVIDENCE

10. The primary focus of my evidence is on the statutory planning requirements and planning related matters, including policies and objectives of the relevant planning documents. An overall assessment of effects is also provided in the context of the proposal and its discretionary activity status. Specific matters addressed in this evidence are:
- (a) Planning Context
 - (b) Consent and Application Background
 - (c) Statutory Provisions & Context
 - (d) Assessment of Effects
 - (e) Issues raised by submitters
 - (f) Regulatory Context - RMA

- (g) Duration of Consent
- (h) Section 42A Report
- (i) Recommended Conditions of Consent
- (j) Conclusions

PLANNING CONTEXT - OVERVIEW

11. The two sites and their surrounding environment are comprehensively described within the AEE.¹ The receiving environment has also been described in the evidence of Ms Beecroft and Dr Coffey.
12. The following key points are noted by way of background and context:
 - (a) The existing MWWTP is located on a 3.47ha site owned by the SWDC approximately 1km to the northwest of the Martinborough township (refer AEE Figure 7 & 9). The land is generally of even flat contour surrounded by farmland, predominantly used for productive rural use, lifestyle purposes and viticulture. The Ruamahanga River runs immediately to the north of the plant (see AEE Figure 10). The nearest dwelling is approximately 330m away from the boundary of the proposed new land treatment area (refer AEE Figure 12).
 - (b) The existing system is a typical 1960's two-pond municipal wastewater treatment system that discharges across land via a short unlined discharge channel directly to the Ruamahanga River. The existing plant and its treatment performance is fully described in the AEE and in further detail in the evidence of Mr Kevan Brian.

¹ Refer in particular section 2 (Existing Scheme Description); and 4 (Environmental Context).

- (c) The second site is the SWDC owned 'Pain Farm', upon which the long term discharge and land treatment of treated effluent is proposed. Pain Farm is an 84ha block located to the south of the Martinborough township and approximately 2.0km straight line distance southwest of the MWWTP, which is bounded by agricultural landuse, primarily cropping and sheep and beef units, with vineyard and rural-lifestyle development to the south across Ferry Road. Pain Farm is currently leased out by SWDC and used for dairy runoff grazing. A closed landfill and transfer station site occupies approximately 5.3ha of the site and is delineated by shelterbelts on all four sides. The nearest dwelling to Pain Farm is some 600m to the south, with the urban fringe being approximately 800m north of the site boundary.
- (d) The land-use patterns in the wider vicinity are dominated by primary production activities consisting mainly of viticulture & sheep, beef and dairy farming, with dairying becoming more prevalent on the plains within the catchment.
- (e) Both the MWWTP and Pain Farm sites are located on historic river terraces on the southern bank of the Ruamahanga River. These river terraces are relatively flat through this area, expanding out across the plains within the valley.
- (f) Pain Farm sits around 22-25m above mean sea level and is elevated above the present Ruamahanga River flood plain, thus mitigating the risk of flooding at the site. The site is gently rolling with a fall towards the north-west. Along the north-western boundary a permanently flowing stream runs to the west towards the Ruamahanga River. A number of ephemeral watercourses run across the Site towards the stream (refer AEE Figure 13). Soils at Pain Farm are characterised into two types:

- i. Silty loam topsoil underlain by silt loams and clays, with gravelly soils from about 85cm on the flats near the stream; and,
 - ii. Similar to the above with lenses of silty gravels and strong mottling throughout, and a pan 35-50cm below the surface.
 - (g) Following site investigations LEI classified the soils at the MWWTP Adjacent site as “well-draining”, and at Pain Farm as having a “restriction of both subsoil permeability and seasonal high groundwater” (as outlined in the evidence of Katie Beecroft).
 - (h) The WWTP Adjacent site is located within the Lower Ruamahanga Groundwater Zone. The Pain Farm site is above the Martinborough Terrace Groundwater Zone, with a perched aquifer and a seasonal high water level. Groundwater is assumed to flow toward the Ruamahanga River.
13. The proposed activity and staging of the Project is described in detail within the AEE, and has been outlined further in the evidence of Mr Mark Allingham and Mr Kevan Brian. I have not repeated it in detail here, but in summary, the proposed activity as applied for includes:
- (a) A first stage (**Stage 1A**) of **pond optimisation works**, including screening, pond upgrade, inlet flow monitoring. This stage has already commenced and continues in accordance with the SWDC LTP and annual plan.
 - (b) **Discharge of c.24% of annual treated effluent flow to land at the “MWWTP Adjacent” site by irrigation (to 5.3ha) below half-median river flow (Stage 1B), to be commenced by November 2017².**
 - (c) The construction and commissioning of **land treatment infrastructure at Pain Farm (Stage 2A)** to enable land treatment of the wastewater (to 53ha). This involves up to 42% of the MWWTP

² The original proposal included commissioning by Dec 2015, however this has been pushed out following a review of the financial impact of the purchase of a farm for land treatment at the Featherston WWTP site.

annual effluent flow by the end of 2030. Stage 1B discharge at “MWWTP Adjacent” site ceases upon commissioning³; and

- (d) The construction and commissioning of additional wastewater storage capacity (lined storage pond at either MWWTP Adjacent or Pain Farm) and infrastructure (Stage 2B) to enable land treatment to Pain Farm of the 90th percentile of effluent flows from MWWTP, with commissioning by the end of 2035.

14. In terms of the proposed discharge regime, in simple terms, the proposal sets out a regime which prioritises avoiding the discharge of effluent to surface water at low flows, defined for this purpose as being “below half-median flow”. This equates to a staged removal as outlined in Table 1 below.

	Total Wastewater to <u>surface water</u>		Total proportion of wastewater to <u>land</u>	
	Annually	Below HMF	Annually	Below HMF
Stage 1A (Existing)	100%	100%	0%	0%
Stage 1B (from Nov 2017)	76%	0%	24%	100%
Stage 2A (from end 2030)	42%	0%	58%	100%
Stage 2B (from end 2035)	0-10%	0%	90-100%	100%

Table 1: Summary of relative proportion of treated wastewater to land and to water on an annualised basis below half-median flow by stage of proposal

15. Stage 1B and 2A both involve eliminating direct discharge to the river at river flows below half median. The important difference is that at Stage 2A the land treatment at Pain Farm involves land treatment of the discharge at these flows, as opposed to just discharge. It is also

³ The option of continuing Stage 1B in conjunction with Stage 2A was considered. Although more effluent can be discharged in total with this ‘hybrid’ option, increases are not directly proportional.,

particularly relevant to note that although half median flow has been adopted as the low flow direct water discharge threshold, a significant proportion of wastewater currently discharged directly to the River is also being transitioned to land based discharge and/or treatment in flows between half-median and median flows. Monthly discharges to water in four flow ‘bands’ is outlined in Table 2 below.

Stage	%WW flow to Land		%WW flow to River		% WW to river <HMF		% WW to river <MF		% WW to river MF to 3xM		% WW to river >3xM	
	1B	2A	1B	2A	1B	2A	1B	2A	1B	2A	1B	2A
January	79	100	21	0	0	0	8	0	10	0	3	0
February	59	100	41	0	0	0	19	0	21	0	1	0
March	43	93	57	7	0	0	26	0	31	0	0	7
April	15	97	85	3	0	0	33	1	41	2	11	0
May	0	85	100	15	0	0	19	0	68	11	13	4
June	0	0	100	100	0	0	29	35	59	37	13	28
July	0	0	100	100	0	0	6	3	62	37	32	60
August	0	1	100	99	0	0	8	4	67	58	25	38
September	13	98	87	2	0	0	23	2	44	2	19	0
October	14	99	86	1	0	0	14	0	41	0	11	1
November	46	100	54	0	0	0	26	0	17	0	3	0
December	49	99	51	1	0	0	22	1	17	1	1	0
Mean Annual	24	42	76	58								

Table 2: Summary of relative proportion of treated wastewater to land and to water between proposed Stage 1B & 2A on a monthly basis and relative proportion to water at below HMF; between HMF and median flow; between median flow and 3xmedian flow; and at greater than 3 x median flow.

16. Particularly noticeable is the significant reduction in flows to the River below median in the “shoulder” season of July and August, and then into spring and summer. The seven-month period of September through to April sees only very small discharges to water. This reduction in discharge below median river flow represents a significant reduction in nutrient mass loadings to the River between Stage 1B and 2A on both an annualised basis and during months with lower flows where environmental and contact effects are more likely to occur.
17. Stage 2B offers “full” land discharge and treatment, but makes provision for discharge to water in very high river flows (exceeding 3 times

median flow) but only at times when there is a potential storage capacity constraint. The discharge regime preference remains to land. Analysis suggests the latter will occur on average approximately 1 in 10 years. A detailed breakdown of the water balance inputs and outputs summarised in Table 1 is included as “Annex A” to the evidence of Ms Katie Beecroft.

18. Mr Allingham has outlined the proposal history, the Applicant’s asset management strategy, alternatives considered, and the rationale for the proposed works programme in the context of the three municipal WWTP sites requiring upgrade and resource consent.
19. The staged approach at MWWTP will be effective in mitigating actual and potential effects on the receiving environment in both the short and long term. In particular the completion of Stage 1B will result in a very significant reduction of the nutrient load to the river for the plant at flows below half median (both direct and indirect discharges) when such discharges have the greatest potential for adverse ecological effect. Stage 2A will then further and quite significantly reduce these discharges at flows between half median and median flows when they still have the potential to have some adverse effect. Stage 2B is directed more at annual nutrient loads and the effects of the direct discharge on the mauri of the river.
20. The continued river discharge during the short term (during Stage 1A until November 2017) and at flows above half median during Stage 1B and 2A largely at flows above median flow (i.e. from 2017 to 2030), may cause some residual localised effects on water quality and aquatic habitat, and ongoing effects on the cultural values of the river. The physical actual and potential effects will however be significantly reduced at each stage. In my opinion based upon the evidence of Dr Coffey and the assessment of Dr Aussiel, the effects on water quality and aquatic ecology will be less than significant following the commissioning of Stage 1B in November 2017 and less than minor after

the commissioning of Stage 2A and 2B. Cultural effects have been considered by SWDC, and are discussed in detail later in my evidence. I accept that the discharge will continue to adversely affect the mauri of the River until stage 2B, however the earlier stages will result in a significant improvement in water quality and resulting reduction of such effects.

21. Further investigation is also programmed at Martinborough for an inflow and infiltration assessment (I&I) in approximately five to six years' time. This investigation would be followed by an I&I reduction physical works programme for the Martinborough network if that is deemed to be necessary from an asset management perspective. This work does not however form part of the current application.
22. The proposal also includes the following offered by the Applicant as proposed 'draft' conditions of consent:
 - (a) A comprehensive monitoring programme to enable confirmation of predicted effects and ongoing assessment of actual effects in the receiving environment, including effluent quality, stream water quality and ecological monitoring. This programme will also ensure that actual performance and environmental data from effluent treatment and Stage 2A land irrigation (Pain Farm) informs Stage 2B design, for both the required additional storage capacity and subsequent land treatment regime confirmation.
 - (b) A comprehensive suite of management plans which will detail procedures for operation and monitoring, communication, I/I reduction management and reporting, and responses to unexpected monitoring results or unintended discharged.
 - (c) The establishment of the Community Liaison Group and compliance management system to provide transparency for all key stakeholders.

- (d) Regular performance reporting and effectiveness review to key stakeholders and to GWRC.
- (e) A review condition to allow for adaptive management

Wider context

23. I have also considered the following to be of specific relevance in forming my opinion:

- (a) The Applicant has a legal requirement (as described in the evidence of Mr Crimp and Mr Allingham) to provide safe and efficient wastewater treatment services for the community, in addition to all other community and social infrastructure, in a manner which is affordable to present and future community and stakeholders, whilst managing adverse effects on the environment.
- (b) SWDC has committed to a strategic direction that targets the removal of treated wastewater from surface water at each of its three municipal plants (plus Lake Ferry) and focuses on sustainable land treatment across the District (catchment based or watershed planning).
- (c) The existing infrastructure is a significant community asset constructed to best practice standards at the time, and managed since in accordance with generally accepted asset management principles, balancing level of service with the cost to the community.
- (d) SWDC now faces considerable constraints in terms of affordability associated with the requirement to significantly upgrade three plants at the same time, manage deferred maintenance, and meet changing environmental expectations as outlined in the statement of Mr Crimp .
- (e) The MWWTP programme is one component of the SWDC integrated wastewater programme within the receiving catchment.

- (f) The MWWTP operates reasonably well and to its design standards (as detailed by Mr Brian & Mr Allingham).
- (g) The proposed upgrade is significantly greater than a “do minimum” approach.
- (h) The provision of wastewater services must be considered within the context of the other community wellbeing, services, and infrastructure responsibilities of SWDC, as outlined by Mr Crimp.
- (i) The proposed activity does not include new or unproven technology, being similar to many other similar installations throughout the country, and more recently within the region (including Carterton District).
- (j) While the proposed discharge does not form part of the existing environment from a legal perspective, it certainly is part of the existing and reasonably foreseeable environment from a practical perspective. Both the continued river discharge and the proposed discharge to land are a necessary part of essential community public health infrastructure.
- (k) Providing for the economic wellbeing and health of the community is a core component of sustainable resource management, integral to Part II of the RMA.
- (l) In my opinion, the proposed upgrade and the staging of that upgrade can be regarded as the best practicable option for minimising the adverse effects of discharges from the MWWTP
- (m) I am satisfied that adopting the balance required under Part 2 of the RMA and particular regard to the efficient use and development of natural and physical resources, the proposal is sustainable and appropriate.

CONSENT & APPLICATION BACKGROUND

24. Resource Consent WAR970079 enables the ongoing operation of the MWWTP. In particular, this consent enables the operation of the MWWTP, including the treatment and disposal of wastewater associated with the facility, by providing for the discharge of contaminants to water, land, and air, subject to a number of specified conditions.
25. A variation was granted by the Greater Wellington Regional Council (“GWRC”) in November 2002 & September 2011 which varied discharge quality standards temporarily. The consents were set to expire in July 2012. The activity is currently lawfully continuing under the existing consents pursuant to s124(2) of the RMA until a decision is made on this application for replacement consents.
26. A copy of the existing consents (including the variations) is included as Appendix 3 of the AEE.

STATUTORY PROVISIONS - RESOURCE CONSENTS REQUIRED

Wairarapa Combined District Plan

27. The site is located within the jurisdiction of the South Wairarapa District and must be assessed against the provisions of the Wairarapa Combined District Plan (“the District Plan”). The MWWTP site (including the ‘MWWTP Adjacent’ site) has been designated by SWDC within the District Plan (Ds065) for ‘Sewage Disposal’ purposes.
28. Pain Farm is not subject to a designation within the District Plan. This site is located within a Rural (Special) Zone as defined by the District Plan.
29. The proposed continuation of operations and the proposed upgrade at the MWWTP sits within the existing designated purpose. As outlined in the Description and AEE (at section 5.2.4), it is noted that:
 - (a) There are no changes proposed to the activity which would require an amendment to the existing designation (Ds056) at this stage;

- (b) There are no landuse activities proposed which fall outside of the designated purpose at the MWWTP (including the 'Adjacent' land treatment site). An Outline Plan of Works will be submitted prior to any works on the site if deemed necessary as part of detailed design;
 - (c) Pain Farm is not included within an existing designation. Stage 2A & 2B Land Treatment therefore need to be considered in terms of the provisions of the Wairarapa Combined District Plan.
 - (d) Plan Change 3 to the District Plan (effective 09 May 2012) introduced rules relating to the discharge of treated wastewater to land. Of relevance to this application is Rule 4.5.2(m)(ii)(a). This provides that where a setback distance standard of 25m from the property boundary for the spray irrigation of treated wastewater with E.Coli concentrations with a median less than 100cfu/100ml is achieved, the irrigation is a permitted activity (i.e. would not require a resource consent under the WCDP), and where the irrigation system meets specified standards.
30. The irrigation for Pain Farm at Stage 2A and 2B (2030 and 2035 respectively) would be designed to achieve the relevant standards at the time, or landuse consent or designation would be sought. The "in principle" design contained in the application is conservative, and contains a high level of flexibility in terms of actual final design at the Pain Farm site. Accordingly, no landuse consent is sought (or necessary) under the District Plan at this stage.
31. It is understood there is a plan change being considered by Carterton District Council to alter Rule 4.5.2(m). This has not yet been drafted nor submitted and therefore cannot be considered in determining this application.

32. In my opinion no additional resource consents or approvals are required under the District Plan to enable the project to proceed.

Wellington Regional Plans

33. There are several relevant regional plans which must be considered in determining the application. These have been assessed in detail in the Description and AEE. Based on my analysis of the Plans, the Project requires the following resource consents:

- (a) **Discharge of a contaminant to water** for the discharge of treated effluent to Ruamahanga River pursuant to section 15(1)(a) of the RMA and Rule 5 of the Regional Freshwater Plan for the Wellington Region (all stages);
- (b) **Discharge of contaminant to land** for the discharge of wastewater to land through the base and sides of the unlined treatment ponds and the discharge channel pursuant to section 15(1)(b) of the RMA and Rule 8 of the Regional Plan for Discharges to Land (All stages);
- (c) **Discharge of a contaminant to land and water** for the discharge of treated effluent to the MWWTP Adjacent block (including Stage 1B) and Pain Farm (Stage 2A & 2B) which may enter groundwater and the Ruamahanga River, in terms of section 15(1)(b) of the RMA and Rule 8 of the Regional Plan for Discharges to Land;⁴
and,
- (d) **Discharge of contaminants to air (odour)** pursuant to section 15(2A) of the RMA and Rule 23 of the Regional Air Quality Management Plan (All stages).⁵

⁴ In practice the Regional Council is likely to issue separate consents for the two different sites. A further consent may be required in the future for a discharge to land from the new storage pond proposed as part of stage 2B.

⁵ Again, this could be separate consents for each site

34. The application as lodged includes each of these activities. By my analysis, each of these consent applications should be assessed as a 'Discretionary Activity' under the relevant rules in terms of the Act.

STATUTORY CONTEXT

35. The principle relevant statutory provisions in considering the resource consents sought are contained in Sections 104, 105, and 107 of the Resource Management Act 1991.
36. Section 104 requires that the consent authority must, subject to Part II, have regard to matters including:
- (a) The actual and potential effects on the environment of allowing the activity;
 - (b) The provisions of the regional policy statement, and regional and district plans; and
 - (c) Other matters that the consent authority considers relevant and reasonably necessary to determine the application.
37. Section 105(1) sets out additional matters that a consent authority must have regard to when considering a resource consent application for a discharge permit. Consideration should be given to the nature of the discharge and the sensitivity of the receiving environment to adverse effects, the applicant's reasons for the proposed choice, as well as any possible alternative methods of discharge, including discharge into any other receiving environment.

38. In addition, the consent authority cannot grant resource consent contrary to section 107 of the Act. Section 107 sets out particular restrictions on the granting of discharge permit.
39. These matters are considered below.
40. In my opinion, the overarching purpose and principles outlined in Part II of the RMA have been applied in the development of the SWDC Wastewater Strategy and the proposed options across all three sites, both individually and collectively. Councils' legislative obligations under the Local Government Act have also been instrumental in developing the Strategy, as outlined in the evidence of Mr Crimp and Mr Allingham.
41. Under Part II, section 5 of the Act confirms the single purpose of the Act, being "*to promote the sustainable management of natural and physical resources*". 'Sustainable management' is then defined as:
- ...managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—*
- (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
 - (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
 - (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*
42. Section 5 requires the consent authority to provide for an appropriate balance of the use and protection of the receiving environments through after consideration of the benefits of the proposal and needs of communities (current and future generations) and the avoidance, remedying, or mitigation of adverse effects on the existing receiving environment.

43. Considering these matters in turn, the proposed activity will in my opinion clearly enable the Martinborough and South Wairarapa communities to provide for their social and economic wellbeing and their health and safety by ensuring they have an operational wastewater facility that is affordable, effective in terms of public health outcomes and environmental outcomes and which meets SWDC's underpinning Local Government Act obligations.
44. The Project optimises the use of existing infrastructure, a significant existing physical resource, which itself is of sufficient scale to provide for the needs of both current and projected foreseeable populations of the Martinborough urban area. It would be inappropriate to consider the WWTP in isolation from the other services and infrastructure SWDC are required to provide, as described by Mr Crimp. This is of direct relevance in terms of section 5 and also section 7 (b) -efficient use and development of natural and physical resources.
45. Based on the assessment undertaken as part of the AEE and the subsequent evidence of Dr Coffey I have concluded that the existing water quality in the Ruamahanga River clearly has constraints in terms of assimilative capacity, largely deriving from upstream contamination and at times does not meet relevant water quality guidelines. The existing discharge is causing some localised adverse effects within a 4-metre wide plume along the true left bank downstream of the point of discharge, which at times are likely to be significant.
46. Stage 1A effectively retains the status quo, and there will continue to be some adverse effects on water quality associated with the discharge which are more than minor in the discharge "near zone", and at times these will be significant. These effects are not significant beyond the near zone however, and will not extend past November 2017. The localised and temporary nature of those effects in my opinion, and on balance in the context of the proposal, is acceptable.

47. The proposal provides for Stage 1B irrigation to the MWWTP Adjacent site by November 2017. This stage will remove the point-source discharge from the River during low flows (less than half median flow)⁶. This discharge to land will result in some percolation through ground into the directly adjoining surface water (Ruamahanga River). However, the effects of this discharge will be less than a 'typical' pastoral dairy farm complying with existing GWRC regulation for collected agricultural effluent land application rates (refer evidence of Ms Beecroft).
48. Dr Coffey has confirmed in his evidence that any adverse effect on surface water quality following the implementation of Stage 1B will be no more than minor. This is supported by Ms Beecroft in terms of her assessment of the potential discharge of nutrients to surface water. I concur with their conclusions.
49. A full assessment of actual and potential effects has been provided in the AEE, considered in evidence by Dr Coffey and Ms Beecroft, and also summarised below. For completeness, I confirm my opinion that the actual and potential adverse effects of the proposed activity in its entirety, on balance and subject to conditions of consent, will be at most, minor.
50. In my opinion, the proposed upgrade will be a significant improvement and in conjunction with the proposed staging represents a sustainable and sensible long-term solution.
51. In regard to section 5 of the RMA, in my opinion the proposal will:
- (a) Enable the Martinborough urban community to provide for its health and safety by continuing to provide for safe treatment and disposal of the community waste water (an essential service which SWDC has a legislative obligation to provide);

⁶ The proposed discharge regime has 118 days annually of discharge to land to MWWTP Adjacent at half median flow or less (ref Evidence of Ms Beecroft (Annex 1)).

- (b) Enable the wider community to provide for its health and safety by reducing and eventually removing treated effluent from the river in an appropriately staged timeframe, in particular during times of peak recreational use in the short term;
 - (c) Enable the South Wairarapa community (including in particular future generations) to provide for its economic wellbeing by ensuring the financial constraints of the community are recognised and provided for by not 'front loading' associated costs unnecessarily;
 - (d) Ensure the other critical and important services, amenities and infrastructure of South Wairarapa are retained by not overinvesting in MWWTP (either infrastructure or redundant capacity as described in the evidence of Mr Allingham) which will ensure the wellbeing and health and safety of the community is retained;
 - (e) Sustain the potential of natural and physical resources for future generations, particularly in terms of enhancing the water quality within the Ruamahanga River, its ecology and associated values (including cultural, amenity and recreational values), attributes and life supporting capacity;
 - (f) Avoid, remedy or mitigate the existing adverse effects from the MWWTP on the environment, and in particular avoid risks of future adverse effects to the Ruamahanga River and Pain Farm environments through the implementation of managed land treatment, operational improvements, and an appropriate environmental monitoring and reporting programme.
52. Section 6 of the Act outlines the matters of national importance that must be recognised and provided for by the consent authority in terms of the Project. The Project recognises and provides for the three relevant matters of national importance, being:

- (a) The preservation of the natural character of rivers and their margins from inappropriate use and development which will result from the sustainable removal of treated wastewater from the Ruamahanga River (s6(a));
 - (b) The Project maintains the current level of access to rivers and lakes (s6(d)). The ability to enhance access in this situation is balanced by the need to ensure public health and safety, which is consistent with the relevant regional plan and policy statement; and
 - (c) The commitment of SWDC to increase the active involvement of tangata whenua with the reporting and decision making associated with wastewater management, this recognises and provides for the very important relationship that tangata whenua have with the Ruamahanga River, Lake Wairarapa, and Lake Onoke as required by s6(e).
53. Both Mr Crimp and Mr Allingham have stated that SWDC recognise, and I agree, that ongoing discharge to the river will continue to affect the relationship of Maori to the River and will detract from the mauri of the river. This effect will be greatest pending the completion of stage 2A but will also continue to a much lesser degree once 2B is completed. In my opinion however these impacts need to be balanced against the wider needs of the community. Full time land disposal is unaffordable for the community as would be the bringing forward of Stages 2A and 2B. I consider that it is important to recognise that Stage 2A will significantly reduce the impacts of the discharge on the river and that has corresponding benefits in terms of the mauri of the river.
54. Section 7 provides other matters to which particular regard should be had, of which a number have relevance to the Project.
55. Kaitiakitanga (s7(a)) is defined in s2 “*the exercise of guardianship by the tangata whenua of an area in accordance with tikanga Maori in relation to natural and physical resources; and includes the ethic of*

stewardship". As Mr Allingham has stated in his evidence, SWDC have been consulting with iwi regarding the proposal and timelines throughout the development of the Project and application. Future exercise of kaitiakitanga been given regard within the Project through the ongoing commitment to tangata whenua involvement through the established SWDC Maori Standing Committee, in the commitment to enable meaningful involvement of tangata whenua through the Community Liaison Group, and separately the proposed Tangata Whenua Values Management Plan, and in the proposed monitoring, reporting, and review process. I note that the Ngati Kahungunu submission is not opposed to the overall proposal, and is particularly supportive of the proposed Tangata Whenua Values Management Plan. I also note that the other recognised tangata whenua, Rangitaane, have not made a submission.

56. I have also considered the fact that the discharge passes over land prior to discharge into the Ruamahanga River, and this will continue throughout the project where a discharge is undertaken under the terms of the proposed consent. I have unfortunately been unable to confirm with Kahungunu prior to preparing evidence whether this assists with mitigation of the potential effects on mauri in conjunction with other measures in this specific case, as it has successfully done in other areas. Clearly however, the progressive discharge of increased volumes of wastewater via land treatment is in accordance with commonly understood preferences of Maori.
57. In my opinion the Project is also consistent with the ethic of stewardship (s7(aa)) in terms of the management of the natural resources of the area, particularly the enhancement of the quality of the water in the Ruamahanga River through nutrient removal, and importantly, Lake Onoke. Dr Coffey has confirmed in his evidence his opinion that the proposal will not have any adverse effect, including cumulative effect, on the quality or functioning of Lake Onoke, or indeed Palliser Bay beyond. Both the Wastewater Strategy and the management regime of

the proposed land treatment process illustrate the regard to the ethic of stewardship by SWDC in my opinion.

58. In respect of s7(b) I am of the opinion that the Project is an efficient use and development of natural and physical resources (s7b)), in that it optimises the use of significant existing capital infrastructure, and in doing so contributes to the policy framework seeking a balance in the competing uses of the surface water resource by progressively reducing and removing wastewater from surface water during times where there are greater potential adverse effects. The ongoing use of the ponds is a particularly efficient and affordable method of wastewater treatment compared with other treatment methods or relocation of the ponds and discharge location, including centralising treatment facilities (s7ba)).
59. Efficiency also requires consideration of costs and benefits. Whilst there would potentially be some cultural benefits in bringing forward stages 2A and 2B of the proposal, in my view the costs to the community of that approach would make it inefficient. In simple terms the marginal environmental benefits of these stages, do not in my opinion warrant the likely and potentially significant effects on the economic well being of the community of bringing these stages. The evidence is that stage 1B will ensure that there are no significant adverse effects in ecological terms. Stage 1B has a strong benefit relative to cost because it eliminates direct discharge at the low flows when this discharge has the greatest potential for significant adverse effects on aquatic ecology and recreational use.
60. Stage 2A will be more costly, but will result in a significant further improvement in water quality at flows below median. Whilst Stage 2A will result in significant benefits in terms of further reduction in discharge to the river, that stage will not avoid discharges to the river and consequential effects on mauri and will provide only limited further reduction in ecological effects. Accordingly in my view the costs and benefits of this stage do not warrant it being brought forward.

61. Stage 2B will be provided limited further mitigation of ecological impacts but much more significant reduction in effects on mauri. Whilst both stages are clearly beneficial, in my view the benefits do not warrant the affordability consequences of bringing these stages forward.
62. The amenity values of the Ruamahanga River and the intrinsic values of ecosystems will in my opinion be enhanced by the Project (ss7(c) & (d)). The programmed removal of treated wastewater from the river will be particularly effective in this respect for recreational amenity downstream of the discharge during summer low flows, and over the term of consent. The existing and low scale nature of the existing infrastructure combined with the separation distances to sensitive landuses should be effective at ensuring visual amenity values on the surrounding environment are maintained and enhanced.
63. With regards the Pain Farm land treatment site (Stage 2A & 2B), the infrastructure will be consistent with the existing rural environment and not out of character with it. The recent commissioning of the highly visible irrigation infrastructure by Carterton District Council adjacent to State Highway 2 is evidence of this. There are many other examples throughout the country where the proposed irrigation technology has successfully been implemented. The treatment process can be effectively managed to ensure there are no odour issues beyond the boundary (as described by both Mr Brian and Ms Beecroft in their respective evidence), and the potential effect of spray drift managed by the use of appropriate nozzles and operating condition parameters. There are no significant ecosystems on Pain Farm that could be affected by the land treatment proposal. The Project therefore has regard to amenity values and the intrinsic values of ecosystems (ss7(c) & (d)).
64. The environmental quality of the environment will be enhanced in my opinion (in terms of s7(f)) for reasons already discussed in terms of reduced discharge of wastewater. The habitat of trout and salmon may experience a minor improvement, as concluded by Dr Coffey in his evidence (s7(h)) will certainly not be degraded.

65. The effects of climate change is a long term consideration that has been given regard in the preliminary design and will necessarily be fully considered in the design of the Stage 2B additional storage capacity and final discharge regime. Ms Beecroft outlines this in detail in her evidence. This design will occur both in respect of flood hazards and the actual and potential risk and effects of floods, and the storage, treatment, and discharge regime (s7(i)).
66. Section 8 requires the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) to be taken into account when determining an application for resource consent. This is required in the context of the overriding purpose of the Act in s5 outlined above. These principles have been taken into account throughout the SWDC strategic planning, option consideration and decision-making process.
67. The Project sits within an overall wastewater strategy for a complex combination of three sites which specifically seeks to recognise and provide for the relationship of tangata whenua to water, to maintain and enhance the quality of the environment by moving to considered and sustainable land treatment across the SWDC asset in an economically feasible manner.
68. I have also noted that the submission of Ngati Kahungunu does not suggest the proposal is inconsistent with the principles of the Treaty, and is supportive overall of the approach being adopted by SWDC.
69. In summary, it is my opinion that the Project is consistent with Part II of the RMA, and will contribute to the achievement of sustainable management within the South Wairarapa.
70. Section 105 and 107 are assessed in detail below (para. 174-186). For completeness I confirm here that I am of the opinion that the Project meets the pre conditions of s107, and that consent can be granted (subject to conditions) in terms of s105.

National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NESC2011)

71. The NESC2011 applies where land has been used for one of 53 specified hazardous activities or industries and is proposed for a change of use. These activities and industries, listed on the Hazardous Activities and Industries List (HAIL), are considered likely to cause land contamination. The October 2011 HAIL list includes land used for wastewater treatment (activity “G.6”).
72. There is no aspect of the Project which trigger the need for a consent under the NES as the existing use at both discharge sites is pastoral farming, which is not on the HAIL list.

National Policy Statement Freshwater Management 2014

73. The National Policy Statement for Freshwater Management 2014 (Freshwater NPS) came into effect after the date of lodgement, however, decision-makers under the RMA must have regard to the NPS in consenting decisions.
74. I have read Ms Arnesen’s summary and opinion on the NPS and concur with her conclusion that the proposed activity is consistent with its requirements, including the transitional provisions incorporated into the Regional Discharge to Land Plan (as policy 4.2.24A).
75. In addition I make the following assessment.

Integrated management

76. Part C of the Freshwater NPS directs the integrated management of freshwater on a catchment basis.

Objective C1 To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystems and the coastal environment.

Policy C1 By every regional council managing fresh water and land use and development in catchments in an integrated and sustainable way, so as to avoid, remedy or mitigate adverse effects, including cumulative effects.

Policy C2 By every regional council making or changing regional policy statements to the extent needed to provide for the integrated management of the effects of the use and development of

- a) land on fresh water, including encouraging the co-ordination and sequencing of regional and/or urban growth, land use and development and the provision of infrastructure; and*
- b) land and freshwater on coastal water.*

77. The proposed activity is founded on the strategic catchment and integrated based approach, including:

- a) Taking a long term view of solutions (20-50+ year horizon).
- b) Developing the best practicable option across all three sites in an integrated and sustainable manner
- c) Developing long-term technical options with a high degree of performance certainty fundamentally based on balanced parameters of risk, public health, environmental effect, and financial affordability.
- d) Providing continued engagement with key stakeholders, including iwi and community groups, (which has been ongoing since 2008) in considering and developing the preferred long-term options.

78. In my opinion, the proposal is not inconsistent with the principles of integrated catchment based resource management and Part C of the NPS.

Tāngata whenua roles and interests

79. The NPS contains specific recognition of the importance of providing for the involvement of tangata whenua in decision on freshwater resources and related ecosystems (part D).

Objective D1 To provide for the involvement of iwi and hapū, and to ensure that tāngata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning,

including on how all other objectives of this national policy statement are given effect to.

- Policy D1* *Local authorities shall take reasonable steps to:*
- a. involve iwi and hapū in the management of fresh water and freshwater ecosystems in the region*
 - b. work with iwi and hapū to identify tāngata whenua values and interests in fresh water and freshwater ecosystems in the region and*
 - c. reflect tāngata whenua values and interests in the management of, and decision-making regarding, fresh water and freshwater ecosystems in the region.*

80. As Mr Allingham has described in evidence that the Applicant has engaged with iwi representatives from Rangitaane o Wairarapa and Kahungunu ki Wairarapa during the process of developing this resource consent application and the Council's aspiration to remove as much of discharge from the river as is practicable by 2035.
81. SWDC has proposed a condition to develop a Tangata Whenua Values Management Plan. This will ensure the operational practices adopted recognise the key role and values of tangata whenua as kaitiaki, and include provision for identification of cultural health indices and monitoring. This will include an ongoing commitment to work through the Wastewater Steering Group, but more importantly provide an opportunity to provide input into forming key decisions.
82. The submission of Kahungunu acknowledges and supports this initiative. From a wider perspective, the submission supports the proposal, with some assurance sought in terms of monitoring and compliance, and the request for a 20-year consent term. My reading of the submission is that this is to enable the outcomes of the Ruamahanga Whaitua process to be incorporated within the conditions relating to the discharge parameters, rather than a specific desire to see the full proposal compressed into a 20-year period. These matters have been discussed separately in this evidence. No submission was received from Rangitaane.
83. In my opinion the proposed activity is consistent with Section D of the Freshwater NPS.

National Objectives Framework

84. The 2014 NPS also introduced a National Objectives Framework to provide a nationally consistent approach for identified freshwater management units and associated values.
85. There is a comprehensive framework contained in the NPS relating to identification and attributes of value, but this only takes effects once incorporated into a regional plan. Whilst there is a draft Wellington Regional Plan in place, these provisions hold no legal weight and in my opinion are not of particular relevance to this current application.

RELEVANT PLAN PROVISIONS

86. This assessment focuses on the appropriateness of the proposed activity with regards the relevant policy framework and extent of adverse effects on the receiving environment, cultural impacts, and the positive effects of the proposal on the community from a financial affordability perspective and social and public health and wellbeing perspective.

Regional Policy Statement for the Wellington Region - General

87. The former Regional Policy Statement for the Wellington Region was made operative in 1995. GWRC notified its second generation Regional Policy Statement ("RPS") as operative from April 2013, after having been notified as a proposed RPS in March 2009. A version subject to decisions on submissions had been notified in May 2010, and a further version, including changes due to consent orders, was available from March 2012.
88. The subject applications for consent were lodged with GWRC in April 2012, prior to the RPS becoming operative, and during that period a small number of further appeals were finalised. I have therefore focussed on the 2013 RPS for the purposes of this assessment.

89. The RPS is a high level policy document which all regional and district plans within the region are required to give effect to. The intent of the RPS is to integrate the management of natural and physical resources across the region to achieve the stated community outcomes.
90. The policies in the RPS are split into two sections. The policies in section 4.1 apply to the regional and district councils when they are developing their own regional and district plans. Section 4.2 includes regulatory policies which are to be given particular regard by the relevant consent authorities when they are considering consent applications, as well as when they are developing other policy, regulation, or methods. I assess these in discussion below.

Regional Freshwater Plan - General

91. The Regional Freshwater Plan ("RFP") has a number of general objectives and policies and more specific objectives and policies that relate to the aspects for which specific rules have been developed.
92. The general objectives and policies are directed at protecting the mauri of water and respecting the relationship of tangata whenua with water bodies (Objectives 4.1.1 to 4.1.3); protecting natural values, natural character, ecosystem habitat values and the life-supporting capacity of water and aquatic ecosystems (Objectives 4.1.4 to 4.1.6); maintaining or enhancing amenity and recreational values associated with water (Objectives 4.1.7 and 4.1.8); managing flood hazard risks (Objectives 4.1.9 and 4.1.10), and providing for the use and development of freshwater resources, subject to managing adverse effects and enabling community involvement (Objectives 4.1.11 to 4.1.17). These are specifically discussed where relevant below.

Policy Framework: Municipal Wastewater Infrastructure and Treatment

93. The role of municipal wastewater treatment infrastructure at a regional level is specifically recognised in policy. Within the RPS, the wastewater network (which includes treatment plants, reticulation pipes and pumps, and discharge infrastructure (including land) is

identified and defined as “Regionally Significant Infrastructure”.⁷ This is an important change in the RPS framework, as it is a term not included in the previous RPS. Although there was previously a general direction to enable necessary infrastructure, and to protect investment in infrastructure, the RPS now specifically and intentionally identifies municipal wastewater networks as Regionally Significant Infrastructure. The RPS supports this strategic priority with a number of provisions which require specific recognition of the benefits of regionally significant infrastructure (including public health and safety - refer RPS Objective 10; and Policy 7), and require provision for regional infrastructure to maintain public health and safety (e.g. refer RPS Policy 39), including where it compromises public access to surface water (refer, for example, RPS Policy 59). In balancing community needs with environmental needs, where there are competing demands, the RPS identifies that whilst the benefits of regionally important infrastructure must be recognised, the potential effects must also be considered, and their appropriateness determined on a case specific basis (see explanation, Policy 39).

94. The RFWP also recognises the use of water for municipal wastewater discharge as legitimate and an anticipated activity within the region. Issue 2.5.1 is:

Some people and communities want to continue to use water bodies as the receiving environment for some contaminants, although improvements may be needed for some discharges to promote sustainable management.

95. The explanation to Issue 2.5.1 assists with further clarification and context (my emphasis in bold):

*Water is the preferred receiving environment in some areas for some wastes. Many of the permits for discharge to water issued in the Region are for agricultural discharges (e.g., dairy, piggery wastes) and most of these are in the Wairarapa. Other common discharges are for **community sewage, industry and quarries**. In some instances discharges to water are appropriate if suitable standards can be met because alternatives, such as land disposal, may not be technically feasible or may be economically prohibitive.*

*There is an expectation that discharging some contaminants into fresh water will continue to be appropriate. In some instances **improved treatment may be needed***

⁷

Wellington Regional Policy Statement; 2013; Appendix 3 - Definitions

to achieve water quality standards which the community finds acceptable and which safeguard the life-supporting capacity of aquatic ecosystems.

96. The RFWP does encourage the discharge of effluent to land as an alternative to water (Policy 5.2.13) where three interdependent criteria are satisfied, being:
- (a) The discharge meets the intent of the Regional Plan for Discharges to Land; and
 - (b) Discharging to land has less environmental effects than a discharge to water; and
 - (c) There are no significant cultural, environmental, technical, or financial constraints associated with discharging to land.
97. Overall, in my opinion the relevant policy framework clearly recognises the importance of the benefits of wastewater infrastructure to communities in providing for their wellbeing. It does not *require* a move to land discharge, but does strongly *encourage* and support it in situations where it is appropriate and reasonable to do so in the specific circumstances. The requirement to have regard to cultural, environmental, technical, and financial constraints is of considerable importance in relation to the current discharge and the proposed staging of increased land based treatment. The proposed activity includes the staged transition to land treatment and at discharge volumes significantly lower than anticipated within the RPS and the RFWP.
98. Importantly, I do not consider that the policy framework contains any imperative to force the timing of proposed staged improvements. It is clear that a balance is required to be achieved, and in my view it can be inferred, that where there are significant adverse environmental effects the response should not be unnecessarily delayed. There is not however, any prioritisation of any environmental effect of wastewater infrastructure over other relevant factors. This is particularly relevant when considering the timing of Stage 2A & 2B in the context of Stage 1B and the programme for upgrade at Featherston and Greytown.

99. The proposed activity, in my opinion, is consistent with the policy framework with respect to significant wastewater infrastructure.

Policy Framework: Surface Water Quality and Amenity

100. The relevant policy framework also includes a comprehensive approach to managing water quality. This is largely based around a regime that recognises the specific values of significance associated with the receiving water body and assigns a respective management purpose and associated level of protection.
101. The RFWP prioritises water bodies on the basis of values and significance, and supports this through objectives and policies that seek to encourage the maintenance and in specific cases enhancement of water quality to a level appropriate for the values of each specific water body.
102. The prioritisation is set out in schedules contained within the Appendices of the RFWP that identify significant water bodies. The Ruamahanga River is included in Appendix 5 - "*Water Bodies with Regionally Important Amenity and Recreation Values - Water Quality to be Managed for Contact Recreation Purposes*". The mid and lower reaches of the Ruamahanga River are scheduled in Appendix 7 - "*Water Bodies with Water Quality Identified as Needing Enhancement*". The specified purpose for which enhancement is sought is "Contact Recreation Purposes", consistent with the inclusion in Appendix 5, referred above.
103. The RPS (2013) has identified Lake Onoke as a water body with values requiring protection (Appendix 1: Table 15), namely fishing, kayaking, canoeing, boating, duck shooting, bird watching, walking, and photography. This identification came from the existing Regional Freshwater Plan and targeted surveys by GW of recreational groups. Lake Wairarapa is also included in Table 16: Rivers and Lakes with significant indigenous ecosystems. This relates specifically to RPS Policy

19 (managing these values through regional plan provisions) and 43 (a directive to consider the ecological function of waterbodies in determining consent applications).

104. Table 16 (Rivers and lakes with significant indigenous ecosystems) specifies four criteria which determine significance. The Ruamahanga River is identified in its entirety for all four criteria. Lake Onoke is not included in Table 16. By comparison Lake Wairarapa is included in its entirety as a significant habitat for threatened indigenous fish species and for six of more migratory indigenous fish species.
105. With regard water quality, the policy framework sets out a regime for water management based on the prioritised water bodies as described above, which are then supported by the water quality guidelines in Appendix 8 of the RFWP. Of particular relevance are the following:
- Policy framework seeks to recognise and allow for a range of uses of water;
 - There is an inherent doctrine of “first in first served” (policy 4.2.29);
 - The fundamental premise of the plan is on maintaining and “where appropriate” enhancing water quality (e.g. Policy 4.1.7 & 4.1.8). “Zero net effect” is not contemplated. The policy framework confirms appropriateness of municipal WWTP discharge and encourages discharge to land where appropriate (5.2.13);
 - Consideration of the effects on water quality are required to consider the specified receiving environment management purpose (aquatic ecosystem in this case) and its existing characteristics (policy 5.2.11);
 - The benefits of the proposed use are to be taken into account (4.2.23);

- There is specific recognition that a progressive upgrade to improving effects from existing activities is appropriate (Policy 4.2.29). There is no requirement for prioritised or “fast tracked” improvements within the consideration of appropriate balance, and no defined time component in the current policy framework.
- The Plan recognises that a precautionary approach is appropriate where data is not complete (policy 4.2.26)
- Life supporting capacity should be “safeguarded” (policy 4.1.5)
- An ethic of guardianship for future generations is encouraged, which SWDC are adopting with the strategy and catchment based integrated programme.

106. The policy framework for water quality is therefore centred upon enabling various uses of water, while appropriately (sustainably) managing the effects of a discharge activity in the context of the relevant receiving environment. Dr Coffey has considered the potential effects of the Project and the proposed discharge regime on the environment within his evidence, concluding that the proposed discharge regime will not have any significant adverse effects on surface water quality or aquatic ecosystems following the commissioning of the Stage 1B discharge. Based on my analysis of adverse effects in the AEE and below, I agree with that conclusion and on that basis consider the proposed activity to be in keeping with the intent of the relevant policy for water quality and amenity.

Other Policy Areas

107. The general objectives and policies within the RFWP are directed at protecting the mauri of water and respecting the relationship of tāngata whenua with water bodies (Objectives 4.1.1 to 4.1.3), protecting natural character; protecting ecosystem habitat values and the life-supporting capacity of water and aquatic ecosystems (Objectives 4.1.4 to 4.1.6); maintaining or enhancing amenity and recreational values

associated with water (Objectives 4.1.7 and 4.1.8); managing flood hazard risks (Objectives 4.1.9 and 4.1.10), and providing for the use and development of freshwater resources, subject to managing adverse effects and enabling community involvement (Objectives 4.1.11 to 4.1.17).

108. These matters have each been discussed above. In my opinion, the proposal is consistent with the policy framework as it relates to water quality and related general matters.

Regional Plan for Discharges to Land

109. This Plan has a range of objectives and policies addressing primarily land contamination, hazardous substances, and waste discharges.

110. The Discharge to Land Plan recognises the importance to tangata whenua and the wider community of removing sewage from water for discharge to land, and the benefits of land based discharges, but also recognises that poorly designed systems, overloading soils or discharging industrial waste can have an adverse effect on the soil resource (Issue 2.1.3 & 2.3.1). Overall, the Plan recognises a preference to discharge sewage to land.

111. Policies seek to:

- a) Give particular consideration to any relevant iwi management plans or statements of tangata whenua views (Policy 4.2.12).
- b) Give particular regard to the following matters when assessing applications for permits to discharge contaminants to land from reticulated sewerage systems (Policy 4.2.13):
 1. the nature of the contaminants entering the sewerage system and being discharged from the system;
 2. whether trade wastes are present in the system, and any actions required to:
 3. monitor the trade wastes entering the system; and

4. minimise the adverse effects of trade wastes on the treatment of the effluent;
 5. the extent to which stormwater is able to enter the system, and any actions required to avoid, remedy or mitigate the effects of system overload by stormwater;
 6. the management of the system, and any actions required to avoid, remedy or mitigate the effects of any accidental discharges from the system;
 7. the location of the discharge site and the hydrogeological conditions at and around the site;
 8. the extent to which the effluent is treated prior to the discharge entering any water, and any actual or potential effects of the discharge on surface water, coastal water, and groundwater (particularly in the vulnerable areas identified in Map 1);
 9. the effects of any odour or contaminant discharged into air;
 10. any actual or potential effect of the discharge on human health or amenity, and on the health and functioning of plants, animals or ecosystems;
 11. any other uses or values of the discharge site and surrounding area, including any values placed on the site by tangata whenua; and
 12. the Public Health Guidelines for the Safe Use of Sewage Effluent and Sewage Sludge on Land, or alternative researched and documented benchmarks for assessment.
- c) To require discharges to land from reticulated sewerage systems to be managed in accordance with a site-specific discharge management plan (Policy 4.2.14).
112. The Project is directly aligned to the overriding objective of a transition toward sustainable land based wastewater treatment. The submission of Kahungunu Ki Wairarapa does not oppose the proposal, and supports the concept of moving to land based treatment, albeit seeking assurance

on management and monitoring of effects. In particular the support for the proposed Tangata Whenua Values Management Plan is noted. The position of tangata whenua views is included in the cultural assessment submitted (ref Policy 4.2.12), and the proposal seeks to take account of these views. The principle point of concern to Kahungunu appears to be in terms of ensuring effects over time will be monitored and on that basis, a term of 20 years rather than 35 years sought is requested by Kahungunu. No submission was received from Rangitane.

113. A full assessment of effects has been provided within the application, which has concluded that the actual and potential effects associated with all of those matters included within Policy 4.2.13. In addition, detailed assessment of the key ones of these is included in the evidence of Dr Coffey and Ms Beecroft as relevant. Regards Policy 4.2.12, comprehensive site and operational management plans are proposed within specified timeframes.

114. In my opinion the proposal is consistent with the policy framework of the Discharges to Land Plan.

ASSESSMENT OF EFFECTS ON THE ENVIRONMENT AND SUBMISSIONS RECEIVED

115. A comprehensive assessment of effects on the environment was included in the Description and Assessment of Effects. I concluded from that assessment, that subject to conditions of consent, the proposed activity will satisfactorily avoid, remedy or mitigate adverse effects on the environment in respect of section 104 of the RMA. For the purposes of this evidence I refer specifically to matters raised in submissions and summarise actual and potential effects in those respects.

Positive Effects

116. The Project as proposed will have a number of positive effects on the receiving environment. These have been described in the AEE (section 6.2), and have been recognised in various submissions and in this evidence.

117. The principles of the SWDC wastewater strategy in moving to land based treatment for the District are widely supported in submissions, including those submissions of Mr Styles; Federated Farmers of New Zealand; Kahugunu Ki Wairarapa; Mahaki Trustees Ltd and Hikinui Trustees; Regional Public Health; and the South Wairarapa Biodiversity Group. These submitters acknowledge the environmental and cultural benefits of a transition to land treatment. There is some varied response to the term of consent sought to effect this change, which is discussed in further detail below.

Cultural issues

118. SWDC acknowledge and respect the role tangata whenua hold as kaitiaki, as outlined in the evidence of Mr Crimp. SWDC have engaged with iwi through the Project definition process, including through the SWDC Maori Standing Committee and Wastewater Steering Group, through the provision of technical reports, through project consultation meetings and invitations for one-on-one meetings.

119. As Mr Allingham has outlined, SWDC ensured that through the engagement process iwi had a clear understanding of the overall Strategy, the Project and in particular the very real constraints, the options considered, and the preferred option.

120. Notwithstanding this, it is acknowledged that the discharge of human effluent to water is offensive to tangata whenua, and adversely impacts on the mauri of the river and on the relation of Maori to the river. The proposed reduction in discharge to river and move towards near full time discharge to land will be on a staged basis. Whilst SWDC accepts and I agree, that bringing stage 2B forward would be preferable in terms of cultural concerns, that is not considered to be viable from a community cost perspective.

121. I also note that I am aware of other situations (such as Palmerston North quite recently and Hastings) where tangata whenua have agreed that

the passing of effluent over land prior to discharge is an acceptable mitigation strategy. I note that in Martinborough, the effluent is passed over land via the existing discharge channel. Furthermore, once stage 1B is completed there will be a move from zero land treatment to 24% land treatment (on an annual volume basis). That proportion will increase with stage 2B to 42%.

122. Kahungunu Ki Wairarapa lodged a submission acknowledging the need for the upgrade and in general supporting its intent. The issues raised in the submission are more operational and management issues, rather than cultural ones, which are addressed below. The issue of cut-and-carry crops not being used for human consumption is an issue raised in the submission. This matter effectively becomes a contractual one for Council, rather than a matter for the consent process. However it is understood that the majority (if not all) similar operations utilise cut and carry crops for animal feed only. Rangitane O Wairarapa did not lodge a submission.
123. The proposed Tangata Whenua Values Management Plan is acknowledged by Kahungunu as a positive step, and is supported. This is currently required to be developed as a condition of consent.
124. Overall, other than the term of consent, Kahungunu appear supportive of the intent of the proposal. Following my assessment I am of the opinion that the potential adverse effects of the proposal on cultural values can be effectively mitigated through conditions of consent. I will discuss the term of consent later in this statement.

Effects on water quality and aquatic habitat

125. A comprehensive analysis of the potential effects of the proposed discharge on a stage specific basis has been provided within the AEE, which has been reviewed and further assessed by Dr Coffey.
126. In summary, the lower Ruamahanga River suffers from high nutrient enrichment with upstream nutrient concentrations (in particular DRP and DIN, and to a lesser extent ammonia) limiting the assimilative

capacity of the lower Ruamahanga River to accommodate further nutrient inputs such as the MWWTP particularly during low flow conditions.

127. A concentrated zone of contamination along the true left bank (c.4m wide and c.370m long) has been identified during particularly low-flows recorded in 2013. In the absence of accurate data from the concentrated plume area, it is assumed that near field effects from the MWWTP discharge contaminants are likely to be more than minor along the true left bank in this localised area during low flow conditions.
128. Across the width of the river, the data suggests mixing appears to reduce the potential effects on water quality and any barrier to fish passage is unlikely.
129. The existing discharge appears to be having a localised significant effect in increasing periphyton cover and biomass during low-flow summer conditions, with effects peaking within an area of <190m downstream and reliable signs of diminishing periphyton cover apparent by 250-290m downstream. Negative effect on pollution sensitive macroinvertebrate taxa have been documented within 200m of the discharge. Downstream data (500m downstream) indicates that the level of effects on macro-invertebrates is no more than minor except in extreme low-flow conditions such as those observed during the 2013 low flow period where effects did appear to extend beyond 500m downstream.
130. Whilst the MWWTP discharge to the Ruamahanga River does contribute to the contaminant loading and to cumulative effects to Lake Onoke, these loads are considered to be minor when compared with other contaminant inputs. The relative contribution of the Martinborough WWTP is provided in Annex 1 - Figure 1⁸ to this evidence. By way of example, Total Nitrogen at Pukio is 1959 tonnes per annum, or which

⁸ Note this data does not include any reduction in the Masterton WWTP nutrient contribution, but is included here for reference. The relative impact of the Masterton WWTP upgrade on nutrient loadings has been assessed in evidence by Dr Coffey (refer para.24 – 29 of his evidence), and a conclusion that appreciable increase in assimilative capacity will not be a result of the Masterton upgrade.

4.28 tonnes per annum are attributable to the MWWTP. I also note the conclusion of Dr Coffey that the cumulative effect of nutrients from MWWTP on the River and Lake Onoke are no more than minor.

131. The effects on water quality are to be addressed primarily through the staged upgrades and incremental removal of direct river discharges over the term of the consent. The removal of discharges during periods when the river flow is less than half median flow as proposed as a result of the Stage 1B upgrade, will improve localised river water quality and health when the effects of the discharge are most pronounced in terms of nutrient discharges and effects on periphyton growth and macroinvertebrate composition. Some localised effect on water quality is likely to remain under other river flow conditions, although the effects will be reduced as a result of increased dilution and mixing available. The greatest improvements in localised water quality and river health year round will be achieved by the implementation of the full land application where significant reductions in contaminant loads are anticipated.
132. The relative reduction in DRP, TN, and ammoniacal nitrogen loads discharged from the MWWTP at each proposed stage clearly illustrates the effectiveness of the proposed activity. Reductions in these key nutrients range from 60 to 66% during summer following the commissioning of Stage 1B, which increases to full removal by Stage 2B. Following the commissioning of Stage 2B, in the order of 90% of annual loadings will have been removed from surface water (refer Annex 1 Figures 2 to 5).
133. Dr Coffey has concluded that the effects of the existing discharge on water quality and aquatic ecology are likely significant at a localised level in the near term, but by the end of stage 1B will likely be no more than minor. This is directly attributable to the staged removal of effluent from the surface water to land. The proposed Stage 1B discharge at the “MWWTP Adjacent” is a deficit regime, and therefore there is potential for nutrients (in particular nitrogen and phosphorus) to

leach into surface water. This potential effect is further compounded by the proposed application of supplementary nitrogen to ensure optimal uptake in the proposed cut and carry operation. The evidence of Ms Katie Beecroft has considered this in detail. Ms Beecroft concludes (para. 49) that:

Despite the nitrogen deficit, limited leaching may still occur due to the function of natural systems (inhomogeneity, rainfall extremes, land management etc). However, the proposed conservative rates will enable a level of confidence that leaching will be minor, and typically will be less than occurs under the surrounding pastoral land use, which is a permitted activity, that receives fertiliser application and animal excreta. As a result the effects are expected to be less than minor on the soil.

134. The assessment of Ms Beecroft in terms of phosphorus has concluded that the uptake rate of the crop will exceed the application rate, and therefore any adverse effect will be no more than minor.
135. I agree with the conclusion of Ms Beecroft in this respect, that the potential adverse effects on water quality associated with the land treatment part of Stage 1B will likely be no more than minor. It may be appropriate to adopt a precautionary approach and include a short-term (e.g. two years) monitoring programme of water quality during Stage 1B to confirm actual effects on water quality, and inclusion of data in quarterly and annual reporting and reviews.
136. A number of submissions have raised concerns regarding the current and ongoing potential adverse effects on water quality (including groundwater) and aquatic habitat. Dr Coffey has covered these in detail in his evidence, and the potential groundwater effects have been assessed by Ms Beecroft.

137. No additional assessment has been provided with the submissions that offers an alternative conclusion to that reached by Dr Coffey or Ms Beecroft.
138. I note Dr Coffey's conclusion that even the immediate full removal of the WWTP discharge from the Ruamahanga River would have only limited benefits in the River water quality, and no discernible positive impact on water quality within Lake Onoke. Fast tracking the programme would therefore provide no advantage in ecological terms unless the upstream water quality were improved significantly during the intervening period before Stage 2B is commissioned. In this respect, Dr Coffey has concluded that even with the upgrade upstream (including Rathkeale College, Masterton WWTP, and Carterton WWTP) there will no be significant assimilative capacity created in the foreseeable future. Water quality is principally affected in this catchment by the impacts of productive landuse.
139. With regards to the potential risk of adverse effects on groundwater, the evidence of Ms Beecroft has covered this in detail and concluded that the proposed discharge regime to land involves no risk of adverse effects on groundwater which are more than minor. In addition, the adaptive management approach enabled through the extensive monitoring programme during Stage 1A&1B will ensure that the long-term discharge regime to Pain Farm (during Stage 2A & 2B) is appropriate and that the risk of adverse effect on groundwater is no more than minor. Some submitters have raised concerns in their submissions regarding the ability of the proposed management plans to sufficiently manage potential adverse effects on water quality.
140. The South Wairarapa Biodiversity Group acknowledge the appropriateness of the approach of completing management plans as a condition of consent, but has voiced a concern that there are no proposed conditions regarding the outcomes resulting from the implementation of the relevant management plans, and the guidelines as to what will deem management plans to be suitable. Kahungunu Ki

Wairarapa raise similar concerns regarding the strength of the deferred management plan approach. Mr Allingham has confirmed Council's approach and commitment to the proposed management plans and compliance. Certainty could be improved and expectations managed through the inclusion of an outcomes framework for the respective management plans within the conditions.

141. The conditions proposed by SWDC set out the intended outcomes that each plan is required to be directed at and set a clear timetable for the respective management plans, each of which will be subject to the approval of GW. Pre approval consultation with iwi and stakeholders regarding each the contents of each management plan is required via the proposed Community Liaison Group. The management plans are required to be developed by suitably qualified people and can therefore be expected to be developed using accepted industry practice.
142. It is also noted that the management plans will be required to be developed in accordance with the other standard based conditions of consent, which include (but are not limited to) a requirement to reduce discharges to water by specified dates, effluent discharge quality parameters, invertebrate and periphyton sampling, and nutrient loading rates for land discharge. Each of these will necessarily carry through to each of the management plans, where relevant.
143. I also note that the management plans will be developed in an integrated manner with those for the other two treatment plants to ensure consistency and efficiency. This will be particularly important with the Tangata Whenua Values Management Plan.
144. The submission of Fish and Game opposes the proposal on the basis that it does not improve the quality of wastewater, inferring this should be the priority. The focus of the RMA is on avoiding or mitigating adverse effects on the environment. A reduction of discharge volumes to the river can be just as effective and as efficient or more efficient in achieving this, than an improvement in waste water quality. The focus should be on improving instream water quality over time. The proposal

will be effective at improving the instream environment through the transition to land treatment. The alternative of improved mechanical and/or chemical treatment has been considered but discounted primarily due to the cost and the relatively modest environmental improvement which would be achieved. The current proposal in my opinion provides a sensible, efficient and sustainable solution for this community.

145. Subject to the proposed conditions of consent, I am of the opinion that the proposed activity will not have any long term effects on water quality or aquatic ecosystems which are more than minor.

Effects on Contact Recreation

146. The lower reaches of the Ruamahanga River are included within Appendix 5 and 7 of the Regional Freshwater Plan, identifying them as having value associated with Contact Recreation.
147. The GWRC report 'Selection of rivers and lakes with significant amenity and recreational values' (March 2009) identifies the Ruamahanga River as having significant recreational values. The survey which supported the report identified that it is the upper and middle reaches of the River which are of greatest importance, and that the Lower Ruamahanga is valued primarily for duckshooting and fishing.
148. Respondents to the survey identified the aspects typically associated with amenity and recreational value, but also specified those attributes which would make the river unsuitable for recreation. These included poor water quality; high water flow; low water flow; poor scenery; poor public access; poor vehicle access (at road end or entry point); poor vehicle security (at road end or entry point); too much rubbish and litter; over developed; absence of native plants and bush; lack of cleaning facilities for equipment; lack of toilet facilities; erosion; poor flood control; very poor water quality.

149. More recently, GW have completed an assessment of recreational water quality⁹, which identifies that the suitability for recreational grades achieved downstream of the MWWTP (at “Bentleys Beach”), are “very poor” when considered in all flows, improving to “poor” during low flow conditions.
150. By necessity, contact recreation should be (and is) restricted at the point of discharge. This is recognised in the RPS policy for significant regional infrastructure. The only attribute of relevance is therefore ‘poor water quality’. The discharge of treated effluent has the potential to adversely affect water quality, as described above. The actual and potential effects of the proposed activity on water quality have been assessed in detail above.
151. An assessment of the potential effects on human health has also been included in the AEE. It is concluded that the discharge will not, after reasonable mixing, have an adverse effect on human health that is more than minor. The submission of Regional Public Health is neutral, but supports the SWDC wastewater strategy, the catchment approach, and while encouraging the proposed staging to be considered as maximums, does not oppose the proposed stage timeframes.
152. The Project involves the staged removal of wastewater from the River. From Stage 1B (commencing in November 2017) there will be no point source wastewater discharge in the River below half-median flow, which will generally align with higher use summer recreational activities. There will continue to be some nutrients.
153. Following the implementation of Stage 2A there will be a further improvement in water quality at flows below half median and a significant improvement and flows between half median and median.
154. Following the implementation of Stage 2B land treatment, there will be no wastewater in the river other than at times of very high flow (in

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Greenfield S, Ryan A and Milne JR. 2012. *Recreational water quality in the Wellington region: State and trends*. Greater Wellington Regional Council, Publication No. GW/EMI-T-12/142, Wellington.

excess of three times median flow) and only then when storage capacity in the plant is compromised.

155. It is my opinion that the current discharge is not having any significant adverse effects on recreational values. Stage 1B will result in a further improvement in water quality at low flows when most recreation occurs. Stage 2A will result in further significant mitigation and most likely avoidance of effects during those periods. Stage 2B will have little further benefit in terms of recreational amenity because it is focused on contaminant reduction at higher flows.

The proposed term of the consent (including timing and outcomes of the Ruamahanga Whaitua process)

156. Several submissions (Kahungunu Ki Wairarapa; Federated Farmers; Neville Fisher; South Wairarapa Biodiversity Group; Sustainable Wairarapa Inc.; South Wairarapa Biodiversity Group; and Wairarapa Water Users Society) raise concerns over the proposed 35-year term of consent. Submitters appear primarily concerned at the possibility that this term would effectively 'lock-in' the effects prematurely prior to the conclusion of the regional plan review process, and in particular the ability to give effect to the water quality objectives & outcomes of the Ruamahanga Whaitua process. It is noted that the submission of Regional Health does not oppose the term of consent proposed.
157. The issue of equity between the term of these urban community discharges and rural discharges is also raised. For example. The Wairarapa Water Users also oppose the proposed term of consent, but on the basis of a perceived inequity between municipal discharges and other discharges, in particular discharge consents for rural activities, which it suggests are typically limited to shorter timeframes.
158. I have considered the appropriateness of the term sought in detail in the AEE (section 3.9; p35), and below (see from para 187).
159. In respect of the Ruamahanga Whaitua process, I understand SWDC support the Whaitua approach and look forward to working with the

Whaitua Committee to assist where possible in implementing and achieving its objectives.

160. From a planning perspective, no policy or regulation has yet been developed through the Whaitua process, with the consultation and information gathering still proceeding. There are therefore no specific regulations, standards, or policies which can be taken into account in terms of this current application.
161. Several submissions contend that the current consent decision should be deferred until the Whaitua process has been completed and new water quality standards have been determined. In my opinion there are three primary reasons this is not appropriate. Firstly the process has no definitive end point. Once the process has developed its outcomes, it will then take time for those to be included within the relevant regional plan as policy and/or regulation. It is not possible to confirm what this timeframe might be, which gives the applicant, regulator and community considerable uncertainty.
162. Secondly, section 68(7) of the RMA provides the ability for the provisions of new plans to be applied to existing resource consents where appropriate. This option is available to GWRC once the outcomes of the Whaitua process becomes clear.
163. Thirdly, and importantly in my opinion, any positive outcomes of the Whaitua process in terms of improved water quality within the Ruamahanga are long term. The existing water quality in the Ruamahanga is the result of a complex combination of land use and management within the extensive catchment. Equally, it will require a long-term multi-faceted strategy to achieve significant improvements in water quality, particularly with respect to effects on quality from diffuse discharges. Although in theory point source discharges (including treated effluent from WWTP's) are easily identified and could be ceased quickly, in reality, this would incur local communities and ratepayers with many tens of millions of dollars of cost, and years of design, consenting, and construction before any real benefit could be achieved.

164. Also in reality, the necessary changes to productive landuse operation will be a controversial one, where real improvements in water quality will necessarily be a long-term project.
165. The current proposal provides for a significant improvement within two years, with the removal of wastewater effluent during low flow periods. Subsequent stages will virtually eliminate adverse effects from the discharge on water quality, as described by Dr Coffey, without these significant financial costs.
166. The proposal, in my opinion, is well aligned to the positive changes which the Whaitua Committee aim to achieve.
167. It is also noted, as outlined by Mr Crimp and Mr Allingham, that SWDC are committed to land based treatment. This now forms a large part of the Applicants asset management framework and long term planning. As Mr Crimp has stated, SWDC will continue to advocate for central government assistance to assist in with implementation of the wastewater strategy. Should alternative funding become available at any point in the term of consent to 'fast track' land treatment at Martinborough (or the Greytown and/or Featherston WWTP's), SWDC has stated it will work efficiently to ensure the land treatment programme is equally 'fast tracked'.
168. Mr Neville Fisher in his submission suggests that consents should be aligned to each proposed stage. The conditions as proposed will ensure that subsequent stages occur in the timeframes outlined and that effects are no more than those assessed. Limiting consents to a stage specific basis provides no real advantage in this case, but rather would just increase administrative costs and uncertainty for all stakeholders, including submitters.
169. In my opinion, delaying the consent process until the Whaitua process has been completed would not be appropriate. Nor does the Act make provision for such delay. While in theory SWDC could apply for a short-term consent to allow for that process to occur, that would be

inefficient and would not provide sufficient certainty for the Council to proceed with the upgrade.

170. I acknowledge that it would be possible for the Council to proceed with stages 1A and 1B on the basis of a shorter term consent, but it still needs investment certainty for those stages. I accept that if the consent was limited to 15 years (for example), the Council could still plan for stages 2A and 2B. However it will not have planning certainty unless the consents include these options or until consents for these stages are granted.

Other matters raised in Submissions

Consistency with the relevant planning policy

171. A number of submitters have made generic statements regarding the level of consistency of the proposal with relevant policy. None of these have been supported with any real assessment of specific policy. In my experience this is a common approach for non-technical submitters as a general 'catch-all' rationale for a request to decline an application. I have undertaken a comprehensive assessment of relevant policy, as outlined in this statement, and concluded that on balance, the proposed activity is appropriate, and consistent with the relevant policy framework.

Effects monitoring and management regime

172. Some concern is raised in the submissions regarding the effectiveness of the proposed monitoring regime. Kahungunu Ki Wairarapa also seeks reassurance that breaches will be appropriately dealt with.
173. The Project includes a monitoring programme and proposed water quality monitoring regime that has been reviewed by Dr Brian Coffey and confirmed as appropriate in this receiving environment. The final monitoring regime will be subject to the conditions of consent. There is also a comprehensive reporting programme proposed, including provision of reporting to iwi, stakeholders, and GW, and a requirement

for a comprehensive compliance management system. In addition, once the Environmental Monitoring Management Plan is approved, it will be reviewed for effectiveness no less than annually on the basis of actual monitoring data.

174. Several submitters have also commented on the historic compliance record of SWDC in terms of these consents, and one also on “what happens” if conditions are not complied with. Mr Crimp and Mr Allingham have both confirmed SWDC’s commitment to achieving compliance with the conditions of consent. Given the compliance framework proposed within the proposed conditions, future non-compliance should not be a significant issue. SWDC also advise they hope to continue the transparent and positive relationship developed with GW officers regarding consent compliance. This should avoid any surprises and minimise the risk of inadvertent or any unintended non-compliance. Should non-compliance occur and not be suitably dealt with by SWDC, the consent review, enforcement, abatement, and prosecution provisions of the RMA will be available to GW as appropriate.
175. The potential risk of non-compliance leading to sustained adverse effect with the implementation of the proposed conditions is in my opinion very low. The application proposes specific conditions that would allow GW to review the conditions of consent in the event that any of the discharges were to cause significant unanticipated adverse effects on the environment.

Equity between urban and rural discharge consents

The submissions of Wairarapa Water Users Society and Sustainable Wairarapa Inc both raise the issue of equity between discharge consents, and particularly regarding between urban / municipal discharges and rural activities (i.e. farming).

Each application must be considered on its merits in terms of the requirements of the RMA. It is not appropriate to ‘compare’ rural and

urban discharges in that respect. In any event the proposal involves a significant cost to the urban community. At this stage, the current Regional Plan places far greater costs on point source discharges than on rural discharges.

Regulatory Context - Resource Management Act

Section 104 - Consideration of Applications

176. Section 104 of the RMA sets out the matters to be considered when determining an application for consent all within the overarching requirement of being “subject to Part 2’.

177. I have addressed Part 2 earlier. I have also addressed the NPS, RPS and plan provisions I have discussed the actual and potential adverse effects on the environment of granting the consents that are sought.

178. I have covered other potentially relevant matters raised by submitters.

Section 105

179. Section 105 of the RMA outlines a number of other specific matters the consent authority must have regard to in respect of a discharge consent.

These matters are:

- (a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
- (b) the applicant's reasons for the proposed choice; and
- (c) any possible alternative methods of discharge, including discharge into any other receiving environment.

180. The nature of the discharge and the receiving environment are described in detail in Sections 3 and 4 of the Description and AEE respectively, and key aspects have been covered in detail by Dr Coffey and Ms Beecroft. The reasons for the proposal are outlined clearly by Mr Allingham. An assessment of alternatives has been undertaken, as included in the application and described in the evidence of Mr Allingham and Mr Brian. This assessment has concluded that the proposed activity is the best practicable option, and I agree with that conclusion.

Section 107

181. Section 107(1) of the RMA is restrictive in nature, providing that where any of the following effects are likely to result from a discharge to water, after reasonable mixing, consent shall not be granted:

- the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials,
- any conspicuous change in the colour or visual clarity,
- any emission of objectionable odour,
- the rendering of fresh water unsuitable for consumption by farm animals, or
- any significant adverse effects on aquatic life.

182. The evidence suggests there is a localised significant adverse effect on aquatic life in some flow conditions with the existing discharge, which will continue during proposed Stage 1A (s107(1)(g)). The evidence of Dr Coffey is that the current discharge causes no significant adverse effects on aquatic life beyond reasonable mixing. All of the other s107(1) criteria appear to be met. Even if those effects were found to exist beyond the reasonable mixing zone, they will be avoided by stage 1B of the upgrade.

183. Section 107(2) specifies the situations in which a consent authority can grant consent if the criteria in s.107(1) are not met, provided it is consistent with the purpose of the Act (section 5 of the RMA) to do so. These are not in addition to the s107 criteria, but provide specified exceptions to those criteria. Section 107(2) provides that:

- (2) *A consent authority may grant a discharge permit ... to do something that would otherwise contravene section 15 ... that may allow any of the effects described in subsection (1) if it is satisfied—*
- (a) *that exceptional circumstances justify the granting of the permit; or*
 - (b) *that the discharge is of a temporary nature; or*
 - (c) *that the discharge is associated with necessary maintenance work— and that it is consistent with the purpose of this Act to do so.*

184. In the event consent is granted, s107(3) provides the ability for GWRC to include conditions enabling works to be staged to ensure that the requirements of s107(1) outlined above can be met. The assessment of effects has concluded that s107 criteria are met now or alternatively will be met following commissioning of the Stage 1B Adjacent Block land treatment, and throughout the remainder of the term of consent.

185. For completeness, an assessment against the exceptions provided in s107(2) is provided below.

Section 107(2)(a) - exceptional circumstances

186. There is no strict legal test for what constitutes “exceptional circumstances” in terms of s.107. Whilst it needs to be considered on a case specific basis, this assessment is commonly applied for wastewater discharge applications throughout New Zealand. Commonly referred to case law includes *Paokahu Trust v Gisborne District Council A162/03*, which related to the Gisborne District community wastewater coastal outfall. In that case the Court found that the consequences of refusing a consent (i.e. that the Council could not lawfully use its wastewater system), were ‘out of the ordinary’ and granted consent on that basis. This approach has been adopted locally recently, with the grant of the discharge consents for Carterton District Council. The decision of the Commissioners in that application includes the following:¹⁰

In our view we do not consider exceptional circumstances apply with regard to the effects of the discharge itself, as this WWTP is no different to others around the country which successfully operate without breaching the requirements of s107(1). We struggle with the reasoning that this WWTP is any different to make it exceptional. However, we agree with Mrs Foster where she states:

“It is my conclusion that there are exceptional circumstances that justify a grant of consent to allow CDC’s discharges to water to continue for a limited period. Those

¹⁰ Decision on Application by Carterton District Council Wellington Regional Council: WAR090120 [27251, 27252, 27253, 30652, 30653]; 24 August 2012; Paragraph 13.1.3

circumstances are that CDC and the Carterton urban community rely on the wastewater treatment and disposal system to function sustainably and to maintain public health standards...

We see the argument presented by Mrs Foster as managing the effects of a community having no legitimate discharge, and not the discharge itself. Despite what may seem like semantics, it is plainly clear that declining grant of consent would result in a situation where a community would be left without a legal discharge, and this would be an exceptional circumstance.

187. The same considerations apply in terms of this current consent, and the potential circumstances of not granting consent would be equally exceptional. While the evidence in that situation considered short term consent, the principles remain the same; that the community would be left without a legal discharge which would be an untenable situation and contrary to the purpose of the Act.
188. In addition, SWDC has outlined a detailed programme of staged improvements and assessed effects profiles that will also ensure that the criteria of s107(1) will be met within a reasonable timeframe.

Section 107(2)(b) - the discharge is of a temporary nature

189. There is some guidance in case law, providing that “temporary” is case specific, and that the intent of the RMA and relevant policy framework are relevant considerations.¹¹ The Project is intended to enable the implementation of a long-term strategy to significantly reduce the potential adverse effects of treated wastewater discharges from surface water.
190. In terms of the current application, the assessment of Dr Coffey and Ms Beecroft confirm that any significant adverse effect on aquatic life (if any) will be temporary and confined to Stage 1A, and will be avoided by November 2017. The effect in that respect is considered temporary in nature.

Consistency with the Purpose of the Act

191. The overriding requirement to grant consent under the exceptions provided in s 107(2) still remains that the proposal be consistent with

¹¹ *Fletcher Property Ltd v America’s Cup Village Ltd A050/99*

the purpose of the Act. In my opinion, as already discussed, the SWDC strategy and this Project are directly consistent with the purpose and the principles of the Act.

DURATION OF CONSENT

192. SWDC have requested a term of consent of 35 years.

193. There is no formula or strict criteria to calculate the term of a resource consent. There is however some assistance from the Environment Court over a number of separate and specific cases. The relevant factors are well summarised in *PVL Proteins Ltd v Auckland Regional Council*¹², which include:

- A decision on what is the appropriate term of the resource consent is to be made for the purpose of the Act, having regard to:
 - the actual and potential effects on the environment and relevant provisions of applicable instruments under the Act,
 - the nature of the discharge,
 - the sensitivity of the receiving environment to adverse effects,
 - the applicant's reasons, and
 - any possible alternative methods of discharge, including to another receiving environment

- Relevant factors in making a decision on the term of the resource consent include that conditions may be imposed requiring:
 - adoption of the best practicable option,
 - requiring supply of information relating to the exercise of the consent,
 - requiring observance of minimum standards of quality in the receiving environment, and
 - reserving power to review the conditions.

194. The same is authority that a longer consent term is appropriate where a short term will create uncertainty for an applicant, and where there is a need for an applicant to protect its investment with as much security as is consistent with sustainable management (as defined in Part II of the

¹² PVL Proteins Limited v Auckland Regional Council (Environment Court A61/2001)

RMA), and/or where there are known and minor effects on the environment on a constant basis.

195. Conversely, a shorter term is suggested more appropriate where there is:

- expected significant future change in the vicinity
- uncertainty about the effectiveness of conditions to protect the environment (including the applicant's past record of being unresponsive to effects on the environment and making relatively low capital expenditure on alleviation of environmental effects compared with expenditure on repairs and maintenance or for profit).
- fluctuating or variable effects on the environment,
- dependence upon human intervention or management for maintaining satisfactory performance, or relies on standards that have altered in the past and may be expected to change again in future.

196. The proposed upgrade to land treatment for MWWTP is in my opinion clearly consistent with the purpose of the RMA, the principles of sustainable management within the RMA, and the relevant provision of national and regional planning documents. The assessment of Mr Brian and Mr Allingham has concluded that the proposed land treatment is also the best practicable option currently available.

197. The upgrade to achieve this is a significant capital investment for SWDC. The resulting asset will be a sustainable long term solution for the local community valued at over \$20M¹³. SWDC need a level of certainty over the consent term to facilitate this investment. A short-term consent would in my opinion create significant (and unnecessary) uncertainty for SWDC.

198. In my opinion, the proposed upgrade to land treatment contains no significant uncertainty for stakeholders or GWRC in terms of effects. The assessment concludes, even with a conservative “buffer”, that Pain Farm contains sufficient land of suitable characteristics to take all of the wastewater generated without any significant risk of adverse effect

¹³

This includes the valuation of Pain Farm.

which is any more than minor. Conversely, a significant positive effect will be achieved in terms of sustainable long-term management of the Ruamahanga River and the economic wellbeing of the community.

199. Conditions are proposed to ensure that any adverse effects through the term of consent are monitored and reported, and that all necessary information is supplied to both GWRC and key stakeholders.
200. In accordance with the guidance above, a shorter term consent could be appropriate if SWDC was seeking consent to allow continued full discharge to the River for the full term of consent where there were major risks or uncertainties with the proposed upgrades. This is not the case under the current proposal. An example of where this could be appropriate is where there was new or unproven treatment methodology and a continued full discharge to surface water at low flows.
201. SWDC have committed to remove 24% of the wastewater from the river during low flows by the November 2017. This is required by conditions of consent. Similarly, Stage 2A & 2B land treatment is required to be commissioned by the end of 2030 (irrigation) and 2035 (additional storage) respectively. This staging will ensure affordability is maintained, and the significant risk of unaffordability is mitigated. Additionally, if these stages are not achieved, SWDC will be in breach of their consent. Annual Reporting on progress toward each of these stages is proposed, with design of the Stage 1B Land irrigation required to be confirmed well before irrigation.
202. In addition, an annual update on wastewater treatment industry technology will also be provided to enable an assessment that the proposal remains the best practicable option through the term of consent. A review condition is also proposed, enabling GW to review the key conditions of consent on an annual basis for the term of the consent. Collectively, these will ensure that conditions do not become outdated, irrelevant, or inadequate.

203. Actual and potential adverse effects have been identified, and have been quantified (as far as practicable) across the term of the consent. Any fluctuations will be identified through monitoring and managed in accordance with relevant detailed management plans.
204. SWDC recognise the need to ensure compliance with consent conditions, and has proposed the implementation of a specific consent compliance management framework with a nominated person responsible for ensuring compliance. Any risk of non-compliance will be swiftly identified and proactively managed.
205. The comprehensive management plans will also be subject to an annual review and update, which will be provided to GWRC and key stakeholders.
206. The proposal is a series of well defined and discreet stages which will collectively provide a significant and sustainable benefit in a manner consistent with the RMA where the proposed review provisions are capable of addressing all matters of concern, and which is capable of responding quickly to any identified risk.
207. A shorter term of consent will not achieve any additional benefits or provide any additional safeguard.
208. On this basis, I am of the opinion that the term of consent requested for all consents required for the MWWTP upgrade is 35 years.

S42A Report

209. I have reviewed the s42A report and recommendation prepared by Ms Nicola Arnesen. Overall I concur with the conclusions of Ms Arnesen with respect to the proposed activity, and recommendation to grant consent subject to conditions.

210. Points where I differ in opinion from Ms Arnesen are outlined below:

A) *Uncertainty associated with Stage 1B*

211. Ms Arnesen has commented upon the level of uncertainty in the “exact level of severity and spatial scale reduction” in effects resulting from Stage 1B. It is on this basis that the introduction of conditions requiring instream water quality monitoring and instream compliance standards have been recommended by Ms Arnesen.

212. Both Dr Ausseil (for GWRC) and Dr Coffey (for the Applicant) have agreed that the commissioning of Stage 1B will result in a significant improvement in effects on the Ruamahanga River, including in particular on aquatic ecology during low-flow conditions. There also appears to be agreement that although there may be some remaining uncertainty in terms of the exact level of severity and spatial scale reduction, any continuing adverse effect of Stage 1B is unlikely to have a significant adverse effect on aquatic life in terms of section 107 of the Act or any other significant adverse effects.

213. Ms Beecroft has also confirmed that during Stage 1B in her opinion the likely adverse effects are on water quality are likely to be less as a result of diffuse discharge at low flows (compared with the existing point-source discharge) and some attenuation at higher flows with partial discharge to land where conditions allow. Additionally, net nutrient loadings, including in particular of nitrogen, will actually be less as a result of the plant uptake and cut-and-carry proposed.

214. Dr Aussiel concludes that “some monitoring may be advisable once Stage 1B is implemented to address this uncertainty”. Dr Coffey has concluded in evidence that the monitoring programme as proposed by the Applicant, is appropriate, scientifically defensible, and in line with best practice. I have also confirmed with Dr Coffey that on the basis of

his experience the existing proposed monitoring regime at monitoring point U1, D1 and D2 will be sufficient to monitor instream effects.

215. The monitoring regime would also be reconsidered in detail during the development of the Environmental Monitoring Plan, which is required to be completed prior to any Stage 1B discharge, and by an appropriately experienced and qualified expert. If there is any remaining concern regarding baseline data or monitoring point location, this can be considered in detail through the development of that specific and comprehensive document.

B) *Uncertainty and Suitability of Pain Farm for Stage 2 / land discharge management plan (sec 9.4)*

216. Ms Arnesen has concluded from the analysis of Mr Docherty that there is somewhere between ‘some’ uncertainty (in conclusion at bullet point 5; p33) and a “high level” of uncertainty (section 9.4, p23) regarding the ability of Pain Farm to be able to feasibly treat the full volume of wastewater.

217. Ms Beecroft has responded to this in evidence (at para 100 - 125 of her evidence, clearly outlining that:

- i. The design land treatment regime was undertaken using a very conservative and appropriate approach, adopting a worst case scenario for each parameter or potential outcome;
- ii. Groundwater mounding is unlikely during Stage 1B;
- iii. A net reduction in nitrogen loads will occur during Stage 1B, and will be both diffuse and minor;
- iv. The risk of bypass flow has been taken into account for Pain Farm, and is considered highly unlikely to occur;

- v. Background groundwater sampling at Pain Farm is considered appropriate, and can readily be included in the Land Discharge Management Plan;
- vi. That assimilative capacity in the soils at Pain Farm are unlikely to benefit from deep ripping;
- vii. That the prevention of winter irrigation and provision of additional (full) wastewater storage is unnecessary.

218. I agree with Ms Beecroft that the design assumptions are appropriately and sufficiently conservative. I note that Ms Arnesen concludes that although there is some concern, that these matters are adequately dealt with in the Land Discharge Management Plan and the Effluent Management Plan. I agree with Ms Arnesen that these documents are the appropriate tool to deal with these issues and manage them effectively over the duration of the consent.

C) Zone of Reasonable Mixing

219. Ms Arnesen has identified that the application and its supporting documents did not include any specific consideration of a “zone of reasonable mixing” in terms of section 107(g). The assessment undertaken for the application was concerned primarily with determining the level of actual and potential adverse effect of the proposed discharge regime. It is of course recognised that s107 is a restrictive matter that the regional council must consider in determining its decision.

220. Both Dr Aussiel and Dr Coffey have advised in evidence there is no specific formula for determining the zone of reasonable mixing, but both usefully provided some assistance in the relevant criteria. Some direction is also included in the Regional Freshwater Plan, at Policy 5.2.11, as identified by Ms Arnesen, which specifies the determination of the ZRM is case specific and should recognise values, management

purpose, and the characteristics of the receiving environment. Additionally Mr Milne in legal advice concludes that while reasonable mixing must provide sufficient distance, in the specific circumstances, for mixing, it must also be “reasonable” from an environmental and compliance perspective, where adopted for that purpose.

221. Dr Aussiel has suggested in his experience that a ZRM is often determined as being of between 5 to 7 times the river width at the point of discharge, or the distance reaches the full width of the river. Dr Coffey in evidence has identified three common means of defining a mixing (at para 30 of his evidence), and advised the approach taken in the current Auckland Regional Council Air, Land, and Water Plan includes a point of 30 times the channel width downstream and one-third of the channel width across as a measure of “reasonable mixing”.
222. In the absence of quantitative assessment, the qualitative methods provide a range of reasonable mixing zones between 250m & 490m adopting the 5-7 times river width approach, and up to 2100m adopting the ARC approach.
223. Dr Aussiel has assessed, and Dr Coffey agrees, that under management for aquatic system purposes, the receiving environment is “frustrated” at 200m downstream, but not at a distance of 500m. The monitoring data and assessment supports this. The consideration is complicated to some extent by the fractured nature of the discharge, concentrated in a 4m zone along the true left bank, for a distance of some 370m. The low-flow assessment undertaken by Forbes (2013) identifies that reasonable mixing in these conditions is between 300m & 500m downstream of the discharge.
224. Ms Arnesen has advised that it would be inappropriate for GWRC to effectively set SWDC up to fail in terms of section 107(g), and I agree. Ms Arnesen has then recommended a 250m RMZ be adopted in taking a

“reasonable precautionary approach” based on Dr Aussiel’s 5-7 times river width suggestion.

225. In my opinion, adopting a 250m RMZ in terms of this activity in this receiving environment is overly restrictive, and not “reasonable”. Based on the wide range of ‘typical’ mixing zone guidance (between 250m and 2100m) and the direction provided by Policy 5.2.11 of the Regional Freshwater Plan, and the various assessments undertaken, it would seem that a 500m RMZ is reasonable and adequately conservative in this receiving environment. I note Dr Coffey’s opinion in evidence (at para. 85) that a 500m RMZ would not be unreasonable “in the context of this particular discharge”, and this would not seem unreasonable on the basis of Dr Aussiel’s discussion.
226. I also note that if a 500m ZRM is adopted as reasonable, then on the basis of both experts analysis the activity, including Stage 1A, will fully comply with section 107 criteria.
227. I also consider that monitoring and compliance should address both the direct and the indirect discharges. From Stage 1B at flows below half median all discharge will be from land and at flows between half median and median a further significant proportion of the discharge will be via land. The compliance and monitoring point should allow for the reasonable mixing of the direct and indirect discharges of both direct discharges and from the non-deficit land discharge regime proposed. It is agreed that there is some uncertainty as to the specific distance the diffuse discharge will impact upon water during Stage 1B. The proposed monitoring regime will enable this to be determined and actual effects to be monitored and quantified. Where a significant effect is confirmed, an appropriate response can be taken (e.g. bring forward Stage 2A).

D) *Instream water quality standards*

228. The assessment of the RMZ has become unnecessarily confused with the issue of measurement of instream water quality standards. In fact there is no need for a RMZ at all unless instream compliance standards are imposed based upon section 107. Mr Milne's advice is that such standards are not required as a matter of law.
229. Fundamentally, the purpose of monitoring to determine the effects of the discharge on the receiving environment, and particularly to review the effectiveness of land discharge at proposed Stage 1B.
230. In the context of the receiving environment, at Stage 1B, the discharge is unlikely to have any adverse effects on the river which are more than minor. In my opinion the inclusion of absolute water quality standards as conditions of consent in this instance is unnecessary and would create a situation where compliance rather than effects becomes an inappropriate focus. Dr Coffey has stated in evidence he considers it unlikely that the suggested standards could be reliably met at all times. He has also stated that the existing discharge can continue and meet existing water quality standards. All assessments appear to accept that once Stage 1B is in place, adverse effects are likely to be no more than minor.
231. With this being the case, I cannot see the need to impose instream water quality standards as conditions of consent. It would be more appropriate in my opinion to specify that the instream water quality standards recommended by Ms Arnesen become instream monitoring baselines within the management plan framework. These baselines could then be monitored, assessed, and reported through the required quarterly (exception reporting) and annual reporting process. If significant adverse effects were identified, then a targeted review of management plans and/or operational conditions could be undertaken accordingly.

232. Under a worst case scenario, if unexpected significant adverse effects were identified, GWRC has the ability to review conditions and require Stage 2A upgrades to be brought forward. In my opinion this approach will be effective at mitigating any potential significant long-term issues and consistent with the intent of both Part II and s108 of the RMA. The regime proposed by Ms Arnesen is in my opinion unnecessarily complicated, costly, and restrictive in the specific context of this proposed activity and consideration of potential risk.

Duration of consent

233. Ms Arnesen has recommended a 25-year duration of consent. This effectively provides a five-year operational term for Stage 2B and ten years for stage 2A. Mr Crimp and Mr Allingham have both confirmed in evidence that a five-year operational period for infrastructure of this significance is problematic from the Applicant's point of view. It does not provide sufficient investment certainty.

234. As outlined earlier in my evidence, I am of the opinion there is no reason to limit the duration to 25-years on the basis of the assessment of actual and potential adverse effects. The final 10 years of the proposed programme (i.e. year 25 - 35) are the years with least potential adverse effect, where the greatest benefit will be achieved (in terms of cultural values in particular), and where any operational or performance issues can be simply resolved through existing conditions of consent and the management plan process. Ms Arnesen's assessment appears to agree with this conclusion. Ms Arnesen's recommendation is based on the following:

- (a) A consideration that 35 years is "too long" for a discharge to water consent;
- (b) SWDC historic "poor" compliance performance;

- (c) Potential changes to the Regional Plan framework;
- (d) Ensuring that the land discharge remains the best practicable option as technology advances.

235. In my opinion:

- (a) The duration of consent should not be a function of the activity (i.e. a discharge to water, which it is noted significantly reduces over the proposed programme). It should be a function of the effects of that activity, which technical experts agree will, over the requested 35-year term, be positive, and adverse effects be no more than minor;
- (b) The historic compliance performance has been a function of a wide range of aspects, including conditions of consent and the joint regulatory compliance regime, all of which are being resolved through conditions of consent and a change in compliance management as outlined by Mr Allingham in evidence;
- (c) Potential changes to the regional plan framework do not justify a reduction in duration where effects can be appropriately managed. Change in policy direction can be effected into an existing consent either directly, or indirectly through the review of conditions;
- (d) The Council's asset management review process and the annual reporting process will ensure regular reviews of whether land discharge remains the best practicable option as technology advances. In reality, once Stage 2B is commissioned, the sunk capital investment will be so significant that any alternative will be difficult, at that point, to justify.

236. If the Commissioners were however minded to grant consent for a shorter duration, in my opinion it would be more appropriate on the basis of the evidence of Mr Crimp and Mr Allingham to limit the current consent to Stage 1A and 1B for a term of say 20 years, with a milestone

condition requiring a comprehensive assessment of the long-term solution by the end of year 15, with a new consent application to be lodged by the end of year 17.

237. However as outlined above, in my opinion, there is no effects based reason for limiting the duration of consent to 25 years.

RECOMMENDED CONDITIONS OF CONSENT

238. I note that the recommended conditions within Ms Arnesen's report are largely based on the conditions contained within the application. As a result I agree with that the majority of the suggested conditions are appropriate. There are some matters with which I disagree, as outlined in the discussion above. I have attached a tracked changes version of the recommended conditions with alterations. I have also included in that version a number of other matters have come to my attention, for example commissioning timeframes for flow monitoring, which have been refined since the initial application was made.

239. The tracked changes version of conditions contains a number of minor suggestions as corrections. I also have the following specific comments to support suggested changes to conditions with more significance.

A) Schedule 1: Condition 4 - Management Plans

I recommend a condition be included which, where appropriate and approved by GWRC, enables one or more Management Plans to be combined into a single management plan volume or document (new Condition 4c).

B) Schedule 1: Condition 7 - Management Plans

I agree that the splitting of the Effluent Discharge Management Plan into two documents, with the addition of a Land Discharge Management Plan has merit. I would suggest some clarification by way of advice note to avoid unnecessary compliance or development costs.

C) Schedule 1: Condition 13 & 14 - Wastewater Volume measurement

The Applicants review of its capital plan has deferred the installation of the inlet monitoring equipment (Condition 13a). Specification, procurement, delivery, installation and commissioning is expected to take up to nine months. It is considered appropriate to amend Condition 13.a) to reflect this.

I am advised that discharge outflow is already measured at the UV plant, prior to discharge. Condition 13.b) therefore becomes redundant and unnecessary.

It would be appropriate to specify that all volume measuring equipment be appropriately maintained. I have therefore recommended an amendment to proposed condition 13 and 14.

D) Schedule 1: Condition 17 - Inflow & Infiltration

Upon review, I consider this condition unnecessary. It potentially creates an ongoing and unproductive technical non-compliance issue. The consent holder will have inherent incentive to reduce the volume of I&I into the system by way of storage volumes and operational irrigation pumping costs, both of which will be a significant cost across the term of consent, and a generic condition such as that originally proposed is unnecessary. It is not an effects based approach. The benefit of reducing I and I is in terms of the volume of storage required at stage 2B rather than in terms of water quality.

I consider that this condition should be deleted.

E) Schedule 1: Condition 18 & 19 - Reporting

This condition requires a quarterly exception report (condition 18) on compliance data. Based on my discussion around instream target baseline monitoring above it would in my opinion be appropriate to include the following amendment to condition 18(b) (*addition in italics*):

- b) A brief commentary on any exceptions identified from the data and reasons for difficulties in achieving compliance with the conditions of this consent, *and/or any monitoring baselines included within a current approved Management Plan under this consent.*

Similarly it is appropriate to update Condition 19 in a similar manner.

F) Schedule 1: Condition 23 - Signage

The current condition requires the mixing zone authorised by the consent to be included on the sign. Upon review, I do not consider this necessary as the consent doesn't so much authorise a mixing zone, but a level of adverse effect. I recommend the second bullet point of condition 23a) be deleted. The inclusion of the "*general frequency and duration of discharge*" will in my opinion be sufficient.

G) Schedule 1: Condition 32 - Review of conditions

The purpose of a review condition is not to compare an activity with the application, but to deal with any unanticipated and unacceptable level of adverse effect. An amendment to Condition 32 (bullet point 4) is recommended to clarify that any review of conditions in this respect should be on the basis of adverse effects on the environment.

H) Schedule 2: Condition 11- Macroinvertebrate and periphyton sampling

The condition currently requires in stream sampling extending beyond the implementation of Stage 2B. The proposed staging will have direct discharge ceased in 2017, and diffuse discharge with likely significant reduction in effects upon implementation of Stage 1B.

The regime included in the condition, upon reflection, in my opinion, required a level of monitoring which exceeded the potential level of adverse effect. I have recommended a more pragmatic monitoring regime which will enable monitoring of actual effects from the proposed discharge.

I) Schedule 2: Condition 16 & 17: Receiving Water Standards

As outlined earlier, in my opinion the receiving water standards are more appropriately monitored as monitoring baselines as part of the management process, rather than absolute compliance standards. On that basis, I would recommend these conditions be deleted.

As an alternative, it may be appropriate to move this condition to the Schedule 1 to be part of the management plan conditions, but specify these as an inclusion within the Effluent Discharge Management Plan for comparative analysis purposes, rather than a strict performance and compliance condition.

J) Schedule 4: Condition 1b - Stage 2A & 2B Land Treatment

The proposed conditions as written limits the discharge of treated effluent to Pain Farm to 4300m³ per day, subject to a range of other application rate and effluent quality parameters. This was included on the basis of assumptions made in the discharge modelling assessments, which involve a high level of conservatism. Any change, even if

supported by evidence, would require a variation to the consent. Where actual assimilative capacity at Pain Farm exceeds the assumptions and where adverse effect is proven to be less than assumed, it would be appropriate to consider higher rates of application without the need for variation to consent.

In my opinion this would be better dealt with by way of the existing management plan approval and review process, similar to the manner in which the conditions currently provide for regular review for the effectiveness of environmental monitoring.

To that extent, a new advice note is recommended to be inserted after Schedule 4, Condition 7.

CONCLUSION

240. In my opinion the proposed upgrades to MWWTP and discharge regime are in accordance with the purpose and principles of the RMA, and overall are consistent with the intent of the relevant objectives and policies contained within the various planning documents assessed.
241. The Project involves a fiscally and environmentally responsible and well-structured response by SWDC to the management of municipal wastewater in the long term.
242. Although there will be some adverse effects continuing in the immediate term, these in my opinion are acceptable in the context of the receiving environment, the long standing nature of this significant infrastructure, and the significant improvement which will result across the term of the consent.
243. The application is for a 35-year consent, which has been sought in order to provide certainty to all stakeholders. There does seem to be a general aversion to long-term consents. In my opinion there is sufficient certainty available to GWRC to appropriately manage the risk of long-

term consents where those risks are either uncertain, or potentially significant. The proposal is for a very simple low-risk solution using common technology. Standard monitoring programmes, reporting and reviews can be used to monitor risk over time. Significant changes in policy can be applied to the activity if appropriate. The proposed CLG and reporting processes will ensure that stakeholders are a part of the ongoing development and operation process over time. The risk, in my opinion, of granting long term consents to this application is low.

244. In my opinion the consent should be granted for 35 years. If commissioners consider a shorter term is necessary then in my opinion a 20 year consent would be appropriate with all reference to stages 2A and 2B removed including all associated conditions and which are applicable to these stages.
245. Some submitters have requested a shorter time period. There is no environmental effects or policy based driver in my opinion which would suggest a condensed timeframe is required for the full project (for example to require Stage 2B to be implemented with a shorter time frame. To do so would risk community economic wellbeing, or other current significant infrastructure and services provided by SWDC.
246. The proposed staging could lend itself to separate consent terms, one for Stage 1A & 1B, followed by another for Stage 2A & 2B. In my opinion however, there is no evidence to suggest this is necessary, with a general acceptance that Stage 1A effects are acceptable, and any adverse effect following the commissioning of Stage 2A and into 2B will be no more than minor.
247. In my opinion the consents sought can be granted, subject to conditions. I do not support the proposed instream compliance standards. In my view these standards are unnecessary and unreasonable. They would create a risk of technical non-compliance.

Date: 21 April, 2015

Signed:



A handwritten signature in blue ink, appearing to read 'Kerry Michael Geange', is written over a horizontal line.

Annex 1

Figure 1 - Indicative Comparison of River median annual nutrient loads and WWTP median annual nutrient loads (Numbers in brackets denote the respective increase (t/a) between sites moving downstream) (Source: Table 14 of AEE (data to 2012))

Site	TP	DRP	TN	NH ₄ -N	DIN
McLays	3.35	0.95	29.6	2.30	12.9
Te Ore Ore	11.8 (+8.45)	4.00 (+3.05)	221.5 (+191.9)	3.52 (+1.22)	155.6 (+142.7)
Gladstone Bridge	40.2 (+31.75)	16.8 (+12.8)	599.4 (+377.9)	23.3 (+19.8)	416.2 (+261.2)
Pukio	168.0 (+150.7)	48.7 (+31.9)	1959 (+1360)	38.0 (+14.7)	1229 (+813)
Masterton WWTP	17.3	14.40	63.3	37.7	43.0
Carterton WWTP	2.00	1.74	5.09	4.20	No data
Greytown WWTP	2.00	1.73	5.79	3.45	3.50
Martinborough WWTP	1.64	1.29	4.28	2.05	2.13

Figure 2 - Estimated loads to the Ruamahanga River for the proposed project stages (Source Table 17 AEE).

Parameter / Season		Existing Scenario (Stage 1A)			Stage 1B			Stage 2B		
		Back-ground	Existing MWWTP	Existing Contribution	MWWTP	Contribution	Reduction in load from stage 1B	MWWTP	Contribution	Reduction in load from stage 2B
		t/month	t/month	%	t/month	%	%	t/month	%	%
DRP	Summer	1.82	0.06	3.30	0.02	1.10	66.67	0.00	0.00	100
	Winter	2.71	0.12	4.43	0.12	4.43	0.00	0.02	0.74	83.33
TN	Summer	50.68	0.32	0.63	0.12	0.24	62.50	0.00	0.00	100
	Winter	103.05	0.76	0.74	0.76	0.74	0.00	0.11	0.11	85.53
NH ₄ -N	Summer	0.65	0.20	30.77	0.08	12.31	60.00	0.00	0.00	100
	Winter	2.64	0.57	21.59	0.57	21.59	0.00	0.08	3.03	85.96

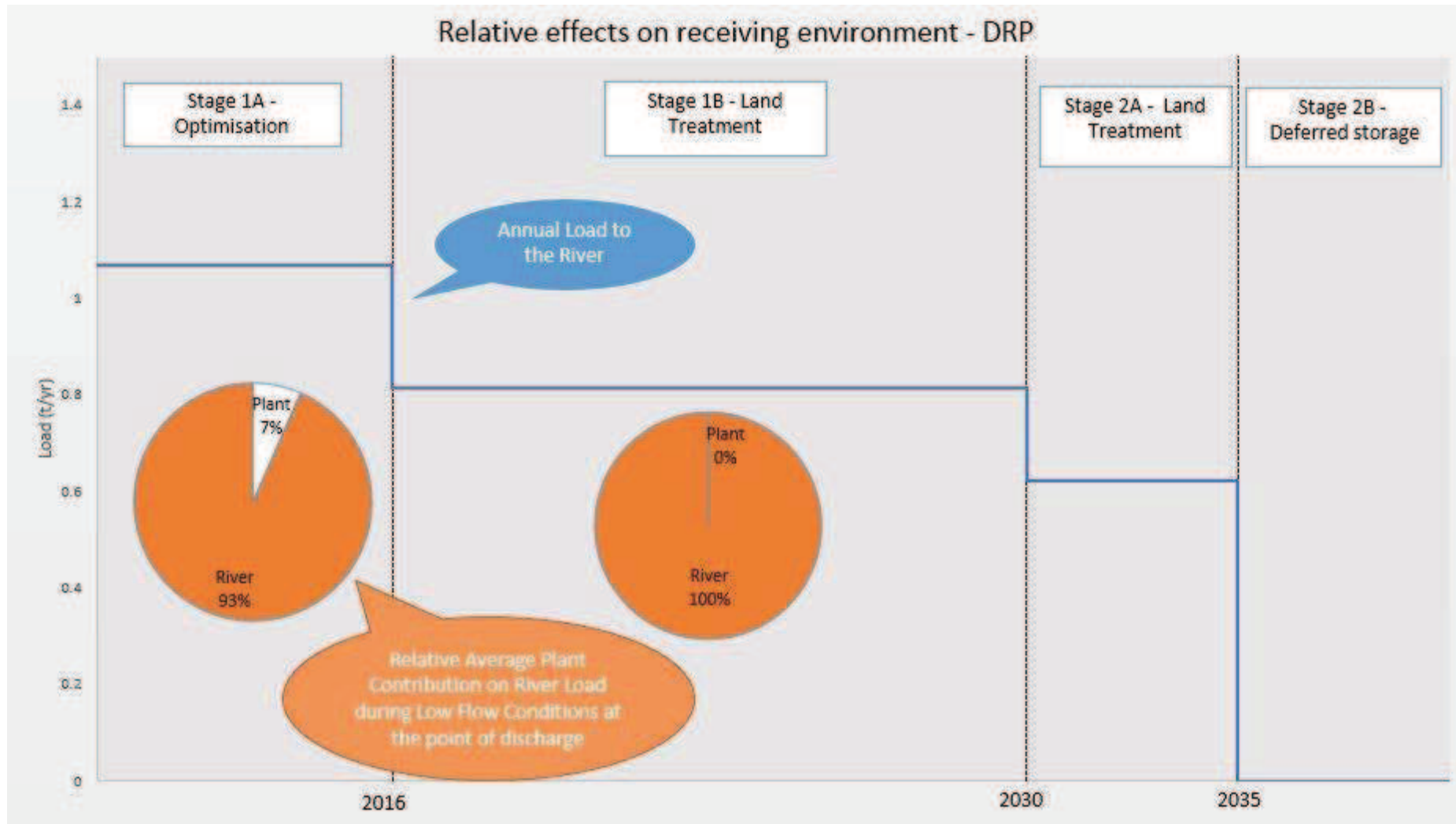


Figure 3A – Relative Annual Loading of DRP from WWTP discharge to surface water through proposed staging

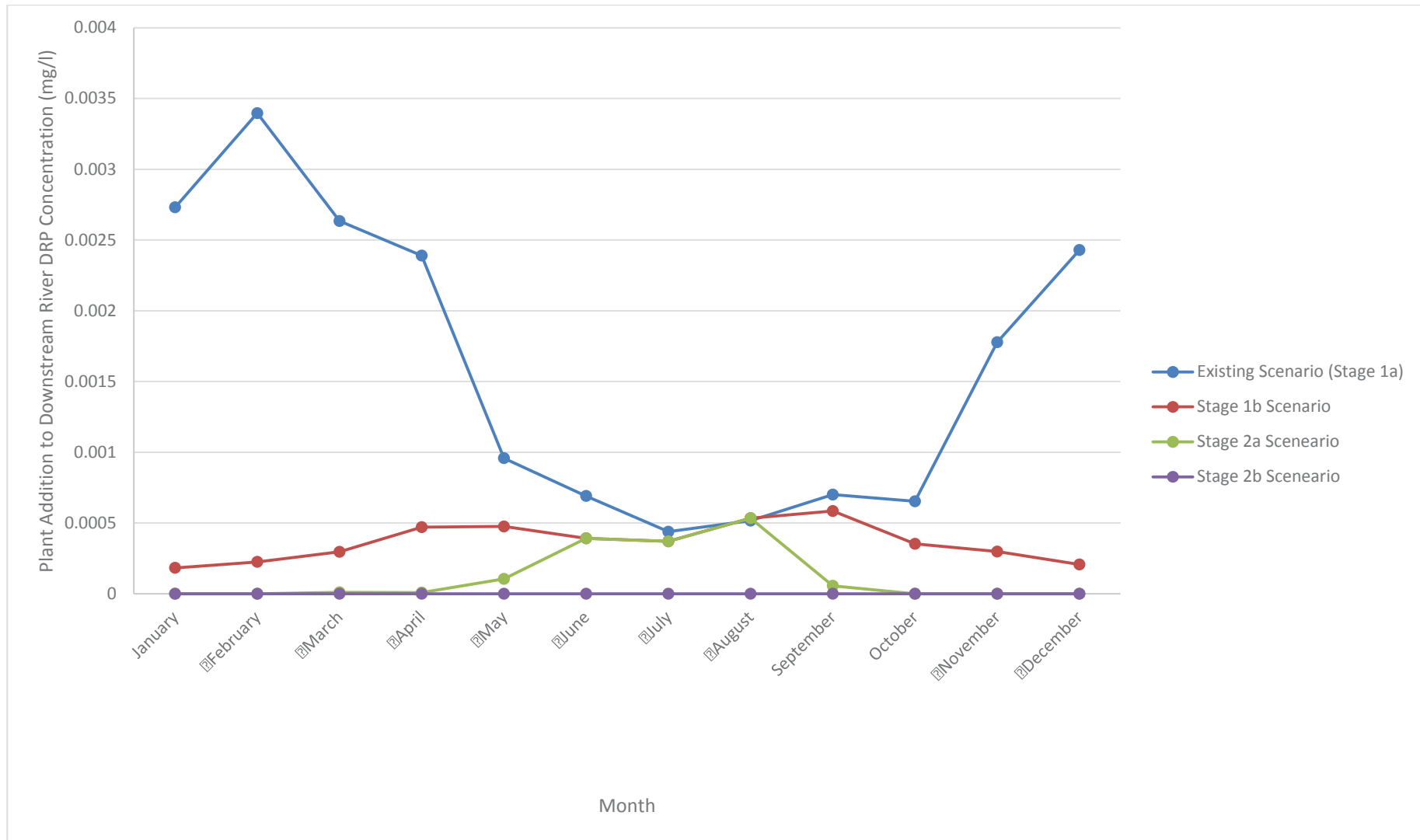


Figure 3B – Monthly predicted addition to concentration in DRP in Ruamahanga River downstream of MWWTP discharge through proposed staging

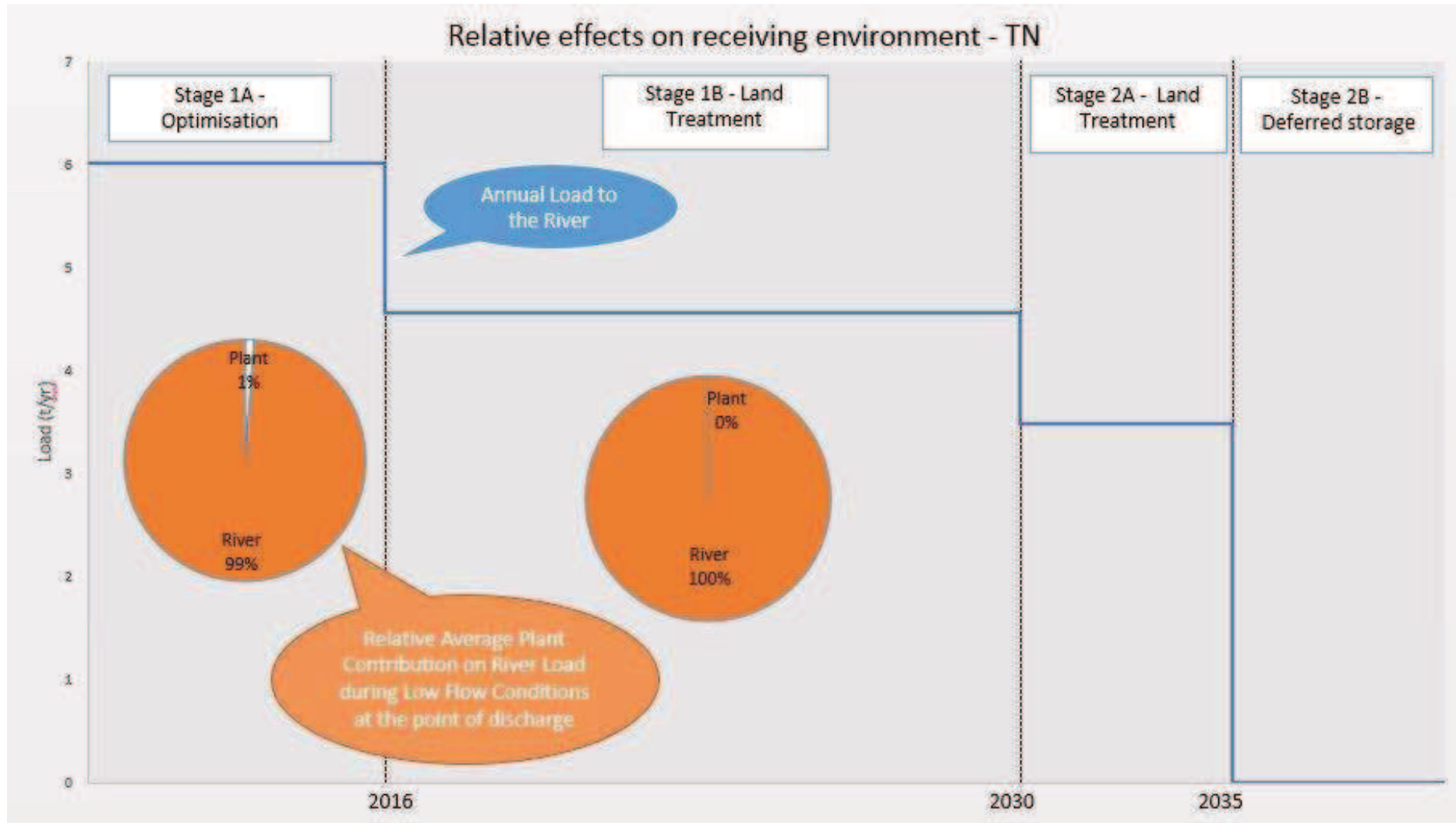


Figure 4A – Relative Annual Loading of TN from WWTP discharge to surface water through proposed staging

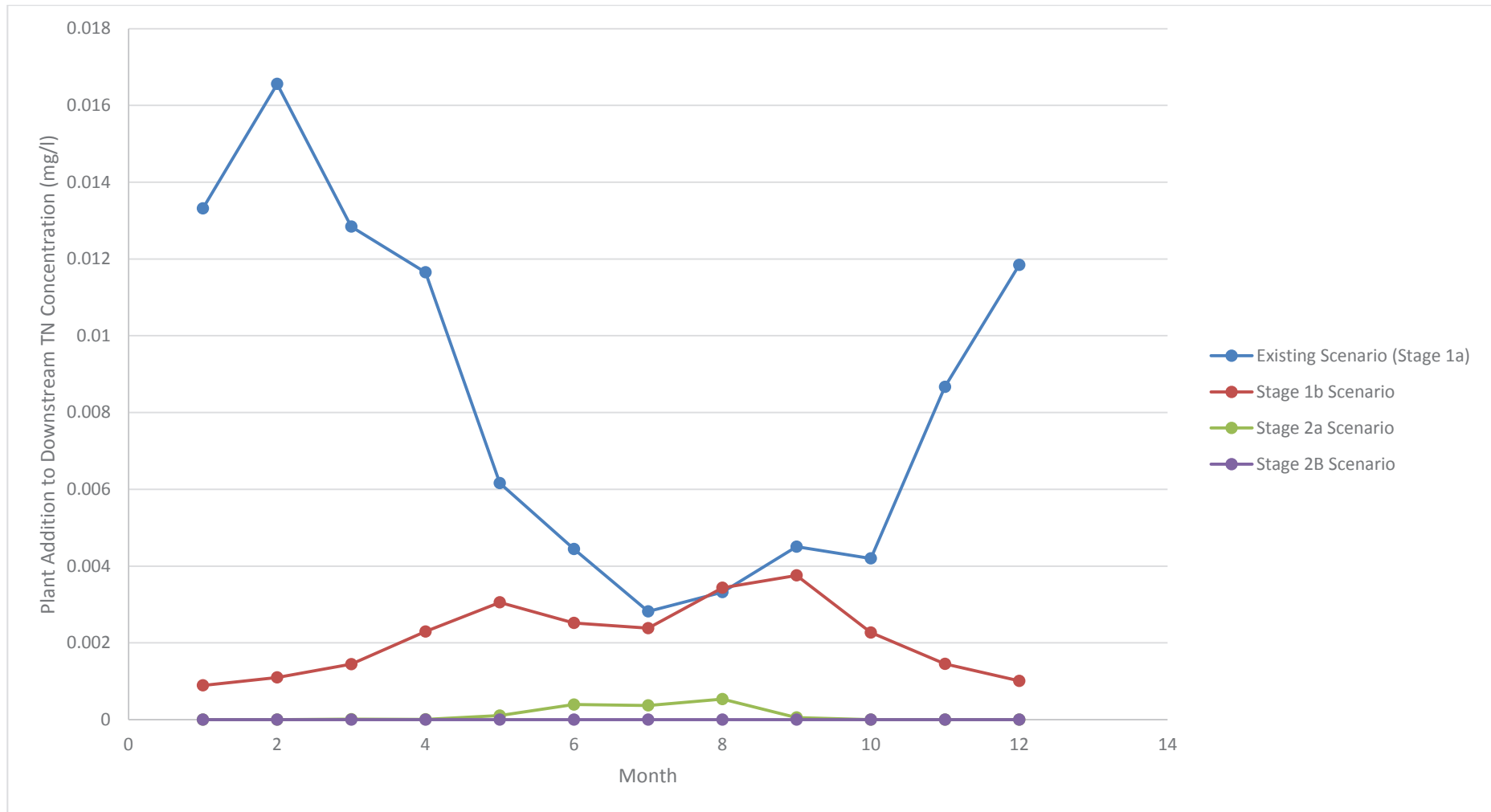


Figure 4B – Monthly predicted addition to concentration in DRP in Ruamahanga River downstream of MWWTP discharge through proposed staging

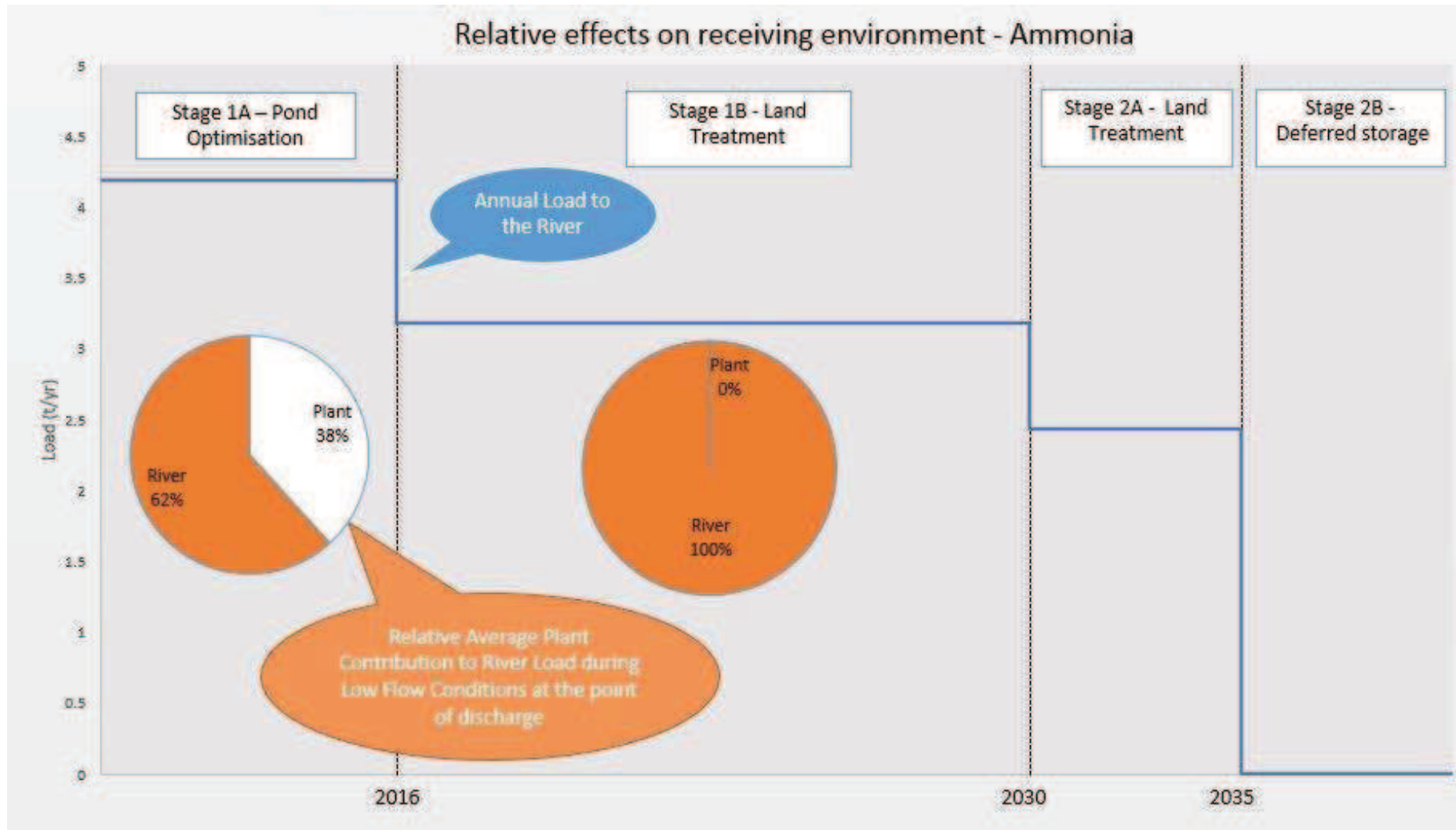


Figure 5A – Relative Annual Loading of Ammoniacal Nitrogen from WWTP discharge to surface water through proposed staging

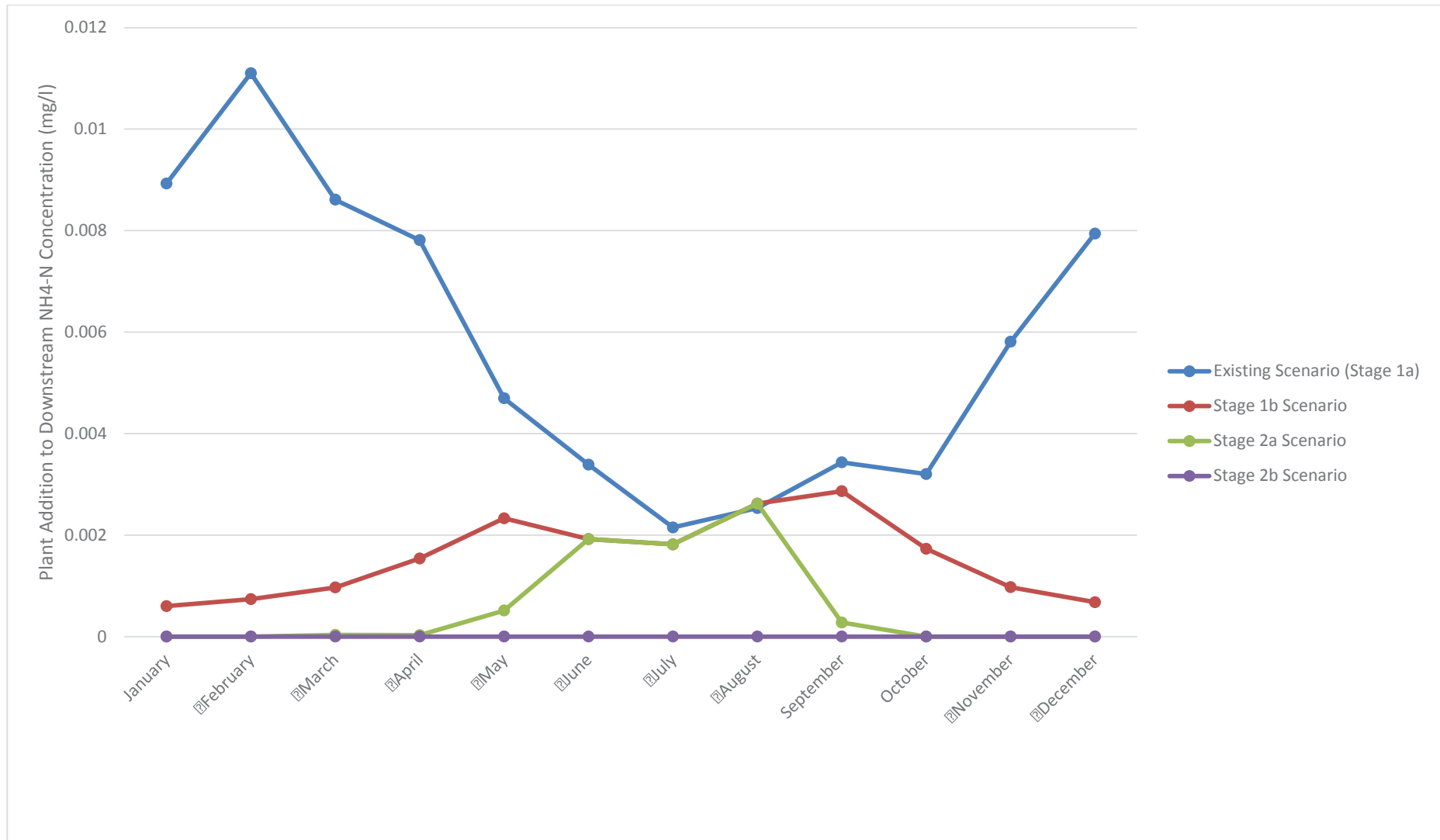


Figure 5B – Monthly predicted addition to concentration in Ammoniacal Nitrogen in Ruamahanga River downstream of MWWTP discharge through proposed staging