BEFORE THE NEW PLYMOUTH DISTRICT AND TARANAKI REGIONAL COUNCILS

IN THE MATTER	of the Resource Management Act 1991 ("the Act")
AND	
IN THE MATTER	of applications from NZTA to alter a designation and for resource consents for the Mt Messenger Bypass Project SH 3 between Uruti and Ahititi ("the Project").

Ben Maxwell Inger

EVIDENCE ON BEHALF OF THE DIRECTOR-GENERAL OF CONSERVATION (Planning)

Dated: 24 July 2018

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1. QUALIFICATIONS AND EXPERIENCE

1.1. My full name is Ben Maxwell Inger.

1.2. I am employed at Harrison Grierson as the manager of the Company's Hamilton office which opened in June 2017. Prior to that I was employed as Senior Planner at Bloxam Burnett and Olliver. I hold the qualification of Bachelor of Planning with Honours from the University of Auckland. I am a Full Member of the New Zealand Planning Institute and a member of the Resource Management Law Association.

1.3. I have 12 years' experience as a planner in consultancy roles based in Hamilton. During my career, I have been involved in a number of resource consent, designation and plan making processes for both private sector and public sector clients. I undertake planning work for a wide range of clients throughout New Zealand but predominantly in the Waikato region.

1.4. My experience includes stakeholder and landowner consultation, preparation of Notices of Requirement and preparation of resource consent applications for a number of roading projects. These projects include the SH1 Whirokino Trestle and Manawatu River Bridge replacement, SH2 Pokeno to Mangatarata Section E upgrade, Waikato

Expressway Huntly Section, SH2 Motu River Bridge replacement and SH2 Reid's Canal Bridge replacement.

1.5. I undertook a full day site visit to the Mt Messenger Bypass site with DOC and Alliance staff on 8 August 2017 and I am generally familiar with the proposed site. During the site visit I drove along the existing length of State Highway 3 that is proposed to be bypassed as a result of the Project. I walked along part of the alignment through the Mangapepeke Catchment over land which is owned by Ngati Tama. I also walked up part of the Mt Messenger Track to view the western options within the Waipingao Valley which were still under consideration by the Alliance at that time. Due to time limitations, I was not able to walk any of the land along the proposed alignment within the Mimi Catchment, nor did I walk through any of the Pascoe property as access to that area was not available at the time of the site visit.

1.6. I have read the Environment Court's Code of Conduct for Expert Witnesses, and I agree to comply with it. I confirm that the issues addressed in this brief of evidence are within my area of expertise.

1.7. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed. I have specified where my opinion is based on limited or partial information and identified any assumptions I have made in forming my opinions.

1.8. My opinions rely in part on the Evidence in Chief presented by expert witnesses appearing for the Department of Conservation ("**DOC**"), in particular the statements of evidence of:

a. Dr Rhys Burns (avifauna)
b. Dr Colin O'Donnell (bats)
c. Ms Lynn Adams (herpetofauna)
d. Mr Richard Duirs (erosion and sediment)
e. Dr Tom Drinan (freshwater)
f. Mr Eric Edwards (invertebrates)
g. Dr Laurence Barea (mitigation/offsets).

1.9. I have also read the report of Ms Kristina Hillock (marine) on behalf of DOC which is attached as Appendix 1 to my evidence.

1.10. In addition, in preparing my evidence I have reviewed the relevant documents provided as part of the Mt Messenger Project Notice of Requirement and Resource Consent applications ("**NOR**") including:

a. Mt Messenger Bypass Assessment of Effects on the Environment (December 2017) and related appendices.
b. The supplementary reports on bats, herpetofauna, vegetation, biodiversity offset, invertebrates, avifauna, ecological mitigation and offset, freshwater submitted as additional information to the Councils and dated February and March 2018.
c. The joint further information request by NPDC and TRC dated 22 March 2018 and the response dated 6 April 2018.
d. The Evidence in Chief (**"EIC"**) and Supplementary Evidence prepared by NZ Transport Agency ("**NZTA**") witnesses.
e. The ELMP dated July 2018.

1.11. I have also reviewed the section 42A reports prepared by the Reporting Officers from New Plymouth District Council ("**NPDC**") and Taranaki Regional Council ("**TRC**").

2. SCOPE OF EVIDENCE

2.1. My evidence will not repeat the site description or the proposal description in detail. The site and proposal are described comprehensively in the AEE and supporting information and succinct summaries are provided in the section 42A reports[1] which I agree with. Key site features and values related to ecology are set out in the evidence of the DOC experts (referred to in paragraph 1.8 above). Overall, the Project area has high ecological values.

2.2. My evidence will deal with the following issues in relation to the NOR and resource consent application:

a. Context to my evidence, including brief descriptions of the DOC submissions and DOC's interests in the Project and the site.
b. A summary of the process and outcomes from the consultation that has been undertaken by NZTA with DOC.
c. My opinion on the assessment of alternatives undertaken by NZTA.

[1] NPDC s42A Report, paras 7-20 and 32-38 and TRC s42A Report, sections 2 and 3.

d. The relevant statutory framework in relation to the NOR and resource consent application, including Part 2 of the Act and key statutory planning documents.
e. A summary assessment of the adverse effects of the Project on ecological values based on the evidence of the DOC witnesses and in the context of the key provisions in the relevant statutory documents.
f. The adequacy of mitigation, offsets and compensation proposed by the Applicant overall and comments on the recommended conditions of consent contained in the section 42A reports.
g. An assessment of the proposal in terms of Part 2 of the Act.
h. Conclusion.

3. CONTEXT TO EVIDENCE

DOC Submissions

3.1. NZTA has submitted a NOR and resource consent application to NPDC and resource consent applications to TRC for the Mt Messenger Bypass Project. DOC has made submissions to NPDC in respect of the NOR and to TRC in respect of the resource consent applications. DOC has not made submissions to NPDC on the resource consent application under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011.

3.2. The content of DOC's submissions to NPDC and TRC is very similar, given the extent of overlap that exists in respect of the effects and the functions of regional councils and territorial authorities under sections 30 and 31 of the Act. The main difference between the submissions is in relation to freshwater effects which are addressed in the DOC submission to TRC only.

3.3. The adverse effects that are of particular concern to DOC are identified in the submissions as relating to herpetofauna, bats, terrestrial vegetation, avifauna, invertebrates, freshwater values and marine values. The submissions seek that the NOR be withdrawn and the resource consent applications be declined, unless NZTA is able to provide further information to provide adequate certainty that the adverse effects of the proposed activities will be adequately avoided, remedied, mitigated, offset or compensated for (in that order).

DOC Functions

3.4. The functions of DOC are established under section 6 of the Conservation Act 1987. DOC's functions include (amongst other things) management of land and natural and historic resources for conservation purposes, preservation so far as is practicable of all indigenous freshwater fisheries, protection of recreational freshwater fisheries and freshwater fish habitats and advocacy for the conservation of natural and historic resources. DOC's interests in the Mt Messenger Bypass Project relate to these matters.

3.5. DOC is also the authority responsible for processing applications under the Wildlife Act 1953 and the Freshwater Fisheries Regulations 1983. I understand that approvals under both of those Acts will be required for the Mt Messenger Bypass Project prior to construction commencing. I understand that most of these approvals are yet to be sought, with the exception of an authority for kiwi which has been approved.

4. CONSULTATION WITH DOC

4.1. NZTA has undertaken consultation with DOC on the Mt Messenger Bypass Project. My own involvement with consultation on behalf of DOC began in August 2017. On 8 August 2017 I attended a site visit, together with other DOC representatives. During the site visit, NZTA explained to us that two route options, out of a total of five shortlisted options, were favoured and being considered. We were shown some parts of these alignments.

4.2. One of the two options that was being considered by NZTA at that time was referred to as Route P1 and it was located west of SH3 through the Waipingao Valley. The other option under consideration was referred to as Route E1 which was east of SH3. DOC's feedback to NZTA was that both options would have significant adverse ecological effects but that DOC's preference of the two options was Route E1 over Route P1. This was due to the DOC ecologist's collective views that the ecological values west of SH3 were higher than to the east of SH3. Route E1 was subsequently chosen as the proposed alignment by NZTA.

4.3. Between August 2017 and June 2018 I participated in regular (typically fortnightly) joint Working Group meetings comprising NZTA and DOC representatives. I have participated in three workshops arranged by NZTA on 7 September 2017, 28 September 2017 and 14 December 2017 which were attended by DOC and NZTA staff. I also assisted with facilitating some of the 'one-on-one meetings' held between NZTA and DOC technical experts which provided a forum for conferencing of the key ecological issues in contention.

4.4. I consider that the consultation that has been undertaken by NZTA with DOC has been appropriate and helpful. It has assisted to resolve some, but not all, of DOC's concerns that were raised in the submissions.

4.5. The key matters which remain unresolved are addressed in the evidence of the DOC ecological witnesses and in the following sections of my evidence. They include:

a. The effects of the Project on bats, in particular long-tailed bats.
b. The extent and certainty of location of riparian planting as mitigation for direct impacts on streams, such as stream diversions and culverts.
c. The difficulties with provision for fish passage within culverts and the importance of adequate monitoring and response measures if fish passage is not achieved.
d. The inadequacy of the measures proposed in the Fish Recovery and Rescue Protocols.
e. Challenges with establishing best practice erosion and sediment controls, inadequacy of proposed monitoring measures during construction and the need for clear response measures for freshwater and wetland effects in the event of sedimentation causing adverse ecological effects.
f. The overall effects management package, including the approach to biodiversity offsetting and the quantum of mitigation, offset and compensation.

5. ASSESSMENT OF ALTERNATIVES

5.1. The Reporting Officer for NPDC has requested NZTA to provide further reasons in its hearing evidence why an online upgrade option following

the existing SH3 alignment (identified as Route Z in the options assessment) was not chosen for the proposed works. In August 2017, DOC provided feedback on two of the proposed route options under consideration (Routes P1 and E1), neither of which involved upgrading of the existing alignment.

5.2. DOC has not closely scrutinised or challenged NZTA's evidential basis as it does not have the requisite engineering expertise to do so. DOC has relied upon the expert advice of NZTA's engineers in the opinions that they provided to inform the Multi-Criteria Analysis (MCA) process. DOC has focused on the effects of the alignment now proposed.

6. STATUTORY FRAMEWORK

6.1. The relevant statutory framework in the Act includes sections 5, 6, 7 and 8 in Part 2 (purpose and principles). Sections 104, 104B, 105 and 107 in Part 6 (resource consents) are particularly relevant to the resource consent applications lodged with TRC and sections 166-186 in Part 8 (designations and heritage orders) are particularly relevant to the NOR that has been submitted to NPDC.

Relevance of Part 2

6.2. I am aware that there have been a number of recent Court decisions discussing whether or not decision-makers under the Act need to specifically consider the matters in Part 2 or whether they should instead rely solely on the provisions of the relevant planning documents which give effect to Part 2. I understand that all of those cases agree that it is appropriate to consider Part 2 matters in the circumstances where, for whatever reason, the RMA planning documents are invalid, give incomplete coverage or uncertainty of meaning to the matter that the decision maker is considering.

6.3. The relevance of Part 2 is addressed in Section 11.3.1.1 of the AEE. Based on the recent approach by the Courts, the Applicant has identified that it considers an assessment of Part 2 to be required in relation to the NOR but only in relation to the resource consent applications where there is invalidity, incomplete coverage or uncertainty of meaning in the statutory planning documents. Nevertheless, the Applicant adopts a

complete approach by assessing Part 2 in relation to both the NOR and resource consent applications.

6.4. I note that both of the Reporting Officers have also considered Part 2 matters in their assessments of the NOR and the TRC resource consent applications[2]. I have taken the same approach. Although I understand there is still some uncertainty about the application of the Supreme Court's decision in *King Salmon*[3] in relation to notices of requirement, I reach the same conclusion following consideration of the proposal in terms of the relevant planning documents and Part 2. I comment on the relevant sections in Part 2 below and I will draw my conclusions with respect to these matters later in my evidence.

Section 5

6.5. The purpose of the Act in section 5 is *"…to promote the sustainable management of natural and physical resources"*.

6.6. There are two general elements of "sustainable management" in the context of section 5 that must be considered. They are:

- Enabling people and communities to provide for their social, economic and cultural wellbeing; and
- Safeguarding environmental quality and avoiding, remedying or mitigating adverse effects.

6.7. I recognise that there are clear social and economic well-being and safety benefits associated with the proposed bypass. These benefits are comprehensively described in the AEE and in the NPDC Reporting Officers s42A Report. However, there are also social, economic and cultural well-being benefits associated with the ecological values that will be lost as a result of the Project works.

6.8. With respect to the requirement that adverse effects be "avoided, remedied or mitigated", case law has established that it is not necessarily required that all effects be avoided, or that there is no net effect on the environment, or that all effects are compensated for in some way. However, given the high ecological values and the inability to avoid,

[2] The only exception is for resource consent requirements under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 where the NPDC Reporting Officer considers a separate assessment of Part 2 to be unnecessary. DOC is not a submitter in respect of that application.
[3] *Environmental Defence Society v New Zealand King Salmon Company* (2014) 17 ELRNZ 442.

remedy and mitigate all of the adverse effects, in this instance the NZTA has proposed no net loss of biodiversity within 10-15 years as an objective.

6.9. I support the intent of this approach and objective, although I note that Dr Barea has raised concerns in his evidence with the applicability of the terms 'no net loss' and 'net gain' where those matters cannot be demonstrated. His opinion is that attainment of 'no net loss' or 'net gain' must be able to be demonstrated in a measurable way and is only applicable to biodiversity offset. He considers the effects management approach proposed comprises environmental compensation rather than biodiversity offset.

Section 6

6.10. I consider that the following matters of national importance, which must be recognised and provided for, are particularly relevant to the matters addressed in DOC's submissions:

"In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:"

6.11. The Project will have unavoidable effects on the natural character of wetlands, rivers and potentially the coastal environment so their preservation and protection in terms of section 6(a) will not be possible.

6.12. In terms of section 6(c) both TRC and NPDC have established criteria for significance in their respective planning documents. BIO Policy 4 in the Taranaki Regional Policy Statement contains TRC's significance criteria and Appendix 21.1 in the New Plymouth District Plan contains criteria for determining Significant Natural Areas. The evidence for the expert witnesses appearing for DOC confirms that the Project area meets both of these sets of significance criteria. The Project will have unavoidable

effects on significant indigenous vegetation and significant habitats of indigenous fauna.

Section 7

6.13. I consider that the following other matters, which regard must be had to, are particularly relevant to the matters addressed in DOC's submissions:

"In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

(d) intrinsic values of ecosystems:

(f) maintenance and enhancement of the quality of the environment:

(g) any finite characteristics of natural and physical resources:"

6.14. Suitable measures to mitigate, offset and/or compensate for adverse effects are important in relation to conclusions drawn with respect to each of these matters.

Section 8

6.15. The principles of the Treaty of Waitangi must be taken into account. I am aware that consultation is being undertaken with mana whenua groups and that some of these parties have made submissions. I acknowledge the importance of this issue I but will not address these matters in my evidence.

Section 104

6.16. In relation to resource consent applications, section 104(1)(a) of the Act requires that a consent authority must have regard to any actual and potential effects on the environment of allowing the activity. Section 104(1)(ab) is of particular relevance to the Mt Messenger Bypass Project. It states that a consent authority must have regard to:

"any measure <u>proposed or agreed to by the applicant</u> for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity".

6.17. The underlined text (my emphasis) is important because a consent authority cannot require offset or compensation measures through

consent conditions, unless they are put forward by the applicant. A consent authority can otherwise only impose conditions for the purpose of avoiding, remedying or mitigating adverse effects.

6.18. In accordance with section 104(1)(b) a consent authority must also have regard to any relevant provisions of a national environmental standard, other regulations, a national policy statement, a New Zealand Coastal Policy Statement, a regional policy statement or proposed regional policy statement, a plan or proposed plan and any other matter that it determines is reasonably relevant and reasonably necessary to determine the application.

Section 105

6.19. Section 105(1) sets out additional matters relevant to a discharge permit application that the consent authority must have regard to in addition to the matters in section 104(1). They include the nature of the discharge and the sensitivity of the receiving environment to adverse effects, the applicant's reasons for the proposed choice and any possible alternative methods of discharge, including discharge into any other receiving environment.

6.20. I consider the nature of the discharge (sediment) and the sensitivity of the receiving environment are particularly relevant to have regard to in this case given the high ecological values of the freshwater and wetland systems within the Project area.

Section 107

6.21. Section 107(1) prohibits the granting of discharge permits, if allowing the discharge of a contaminant into water, or onto or into land in circumstances which may result in the contaminant entering water if, after reasonable mixing, the discharge is likely to give rise to all or any of the following effects in the receiving waters:

"(c) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:

(d) any conspicuous change in the colour or visual clarity:

(e) any emission of objectionable odour:

(f) the rendering of fresh water unsuitable for consumption by farm animals:

(g) any significant adverse effects on aquatic life."

6.22. Under section 107(2) a discharge permit may be granted allowing any of the above effects if it is of a temporary nature and it is consistent with the purpose of the Act to do so. The proposed works are likely to cause suspended materials (sediment), conspicuous change in colour and visual clarity of water and potentially significant adverse effects on aquatic life. These are all important considerations, however, in my opinion the proposed temporary discharge of sediment during construction is not prohibited by section 107, provided adequate conditions are imposed.

Section 171

6.23. The corresponding requirements for consideration of NORs for designations are contained in section 171(1) of the Act. Section 171(1) requires that a territorial authority must consider the effects on the environment of allowing the requirement.

6.24. Under section 171(1)(a) the territorial authority must have particular regard to any relevant provisions of a national policy statement, a New Zealand Coastal Policy Statement, a regional policy statement or proposed regional policy statement and a plan or proposed plan.

6.25. Sections 171(1)(b) and (1)(c) require that the territorial authority must have particular regard to whether adequate consideration has been given to alternative sites, routes, or methods for undertaking the work[4] and whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority.

6.26. Section 171(1)(d) requires that the territorial authority must have particular regard to any other matter that it determines is reasonably necessary in order to make a recommendation on the requirement.

6.27. Section 171(1B) is particularly relevant to the Mt Messenger Bypass Project as it relates to offset or compensation measures. It is the equivalent designation provision to section 104(1)(ab). It states (my emphasis):

[4] This is relevant for the Mt Messenger Bypass NOR as it applies where the requiring authority does not have an interest in the land sufficient for undertaking the work or where it is likely the work will have a significant adverse effect on the environment.

"The effects to be considered under subsection (1) may include any positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from the activity enabled by the designation, as long as those effects result from measures proposed or agreed to by the requiring authority."

6.28. As is the case with section 104(1)(ab) for resource consents, any offset or compensation measures cannot be imposed as designation conditions unless they are proposed or agreed to by the requiring authority.

Sections 166-186

6.29. Section 181(2) identifies that sections 166-186 shall apply to a requirement for an alteration to designation. In addition to section 171 which I have already addressed, I note that NZTA is also seeking a 10 year lapse period and waiver of the requirement for an outline plan (except for an outline plan dealing with some distinct elements of the Project). DOC is not opposed to these requests.

Relevant Statutory Documents

6.30. In my opinion, the key statutory documents that are relevant to the Mt Messenger Bypass Project in terms of sections 104(1)(b) and 171(1)(a) are as follows:

a. New Zealand Coastal Policy Statement (2010)
b. National Policy Statement for Freshwater Management (2014)
c. Operative Taranaki Regional Policy Statement (2010)
d. Operative Taranaki Regional Freshwater Plan (2001)
e. Operative Taranaki Regional Soil Plan (2001)
f. Operative New Plymouth District Plan (2005)

6.31. I have reviewed these statutory documents in relation to the proposed activities. I have also reviewed the Applicant's objectives and policies assessment contained in Section 11 and Appendix A of the AEE. The provisions of these statutory documents which I have identified as being most relevant to DOC's submission are attached as Appendix 2 of my evidence.

6.32. There are a large number of provisions, however, I have recognised consistent themes in these documents. I summarise these as follows:

a. Maintaining and enhancing freshwater values and life-supporting capacity by avoiding, remedying or mitigating the adverse effects of activities, including taking, use, damming or diversion of surface water.
b. Maintaining and enhancing the quality of freshwater by avoiding, remedying or mitigating the adverse effects of discharges.
c. Maintaining and enhancing biodiversity, with priority on areas that have significant biodiversity values.
d. Management and enhancement of indigenous vegetation and habitats.
e. Providing for the safe and efficient operation of regionally significant infrastructure.

6.33. I note that a number of the statutory documents refer to the need to "maintain and enhance". One such example is BIO Objective 1 in the Taranaki Regional Policy Statement which is *"To maintain and enhance the indigenous biodiversity of the Taranaki region, with a priority on ecosystems, habitats and areas that have significant indigenous biodiversity values"* (my emphasis). In this respect, the Applicant's proposal to implement measures to provide positive effects to compensate for residual adverse effects is important.

6.34. As I have previously stated in paragraph 6.12 of my evidence, the Mt Messenger Bypass Project area meets the significance criteria in both BIO Policy 4 in the Taranaki Regional Policy Statement and in Appendix 21.1 in the New Plymouth District Plan. I rely on the evidence of the DOC expert witnesses in this respect. The significance status is due to the threat status of species that are present, the importance of the habitat for threatened species, the representativeness of the habitat and the ecological context.

6.35. I make comments under the various sub-headings in section 7 of my evidence, drawing on my findings on the key provisions in these statutory planning documents. Where relevant, I note differences of opinion with the assessments in the AEE and the Applicant's planning evidence. Although my comments relate to matters addressed in DOC's submission and evidence, I have undertaken a broader consideration of the relevant provisions as part of my review.

7. POTENTIAL ECOLOGICAL EFFECTS OF THE MT MESSENGER BYPASS PROJECT

7.1. The AEE and evidence submitted on behalf of NZTA all state the objective to address all residual ecological effects and to ensure that in a 10-15 year timeframe there will be no overall net loss in biodiversity values as a result of the Project. The DOC ecological witnesses all generally agree with the approach to address residual effects through environmental compensation or biodiversity offset. Where some of the DOC witnesses differ in some respects, however, is the extent of compensation or offset effort that is required.

7.2. I summarise DOC's expert evidence below in relation to bats, lizards, avifauna, freshwater, erosion and sedimentation, invertebrates and marine effects. I identify where the experts consider that additional mitigation or compensation effort is necessary in respect of each matter.

Effects on Bats

7.3. I rely on the evidence of Dr O'Donnell in relation to bats and I summarise my understanding of the key matters in his evidence below:

a. Dr O'Donnell considers that the proposed Bypass route is significant for bats. The Applicant's reports on bat surveys show that long-tailed bats are widespread and appear to be common relative to most other places in New Zealand. The bat pass rates detected by the Applicant's ecologists are among the highest that Dr O'Donnell is aware of in New Zealand.

b. The long-tailed bat is classed as threatened, with it being in the category at most risk of extinction – Nationally Critical.

c. Dr O'Donnell's opinion is that the potential adverse effects of the Project on long-tailed bats are likely to be very high. He identifies that the effects will arise due to:

(i) Disturbance, direct deaths, injury and/or displacement of protected wildlife through felling of roost trees during construction.

(ii) Loss and fragmentation of feeding habitat and shelter from felling of feeding habitats along the proposed route.

(iii) Loss of critical breeding roosts leading to possible extinction of the Mt Messenger long-tailed bat colony.

(iv) Increased noise and vibration influencing feeding and risk of collisions between vehicles and bats as vehicle speeds and traffic rates increase.

(v) Impacts of construction (noise, vibration, light disturbance during night works, and operational lighting) on feeding.

d. Dr O'Donnell considers that the most effective way to predict actual impacts is to remove significant amounts of uncertainty through rigorous identification of bat roosts and important feeding habitats followed by their protection prior to granting the consents and, if necessary, realignment of sections of the proposed Bypass to avoid both roost and feeding sites, as recommended in the NZTA's 'Bat Management Framework'. Dr O'Donnell considers this approach has not been followed by NZTA for the Mt Messenger Bypass Project and the Applicant has not provided enough information to assess the potential adverse effects of the Mt Messenger Bypass on long-tailed bats.

e. Alternatively, Dr O'Donnell recommends that suitable compensation that has a high probability of ensuring no net loss of the viability of long-tailed bat populations in North Taranaki could be considered.

7.4. Overall, in Dr O'Donnell's opinion the conditions and actions proposed by the Applicant as outlined in the ELMP to avoid, remedy, mitigate or compensate for effects on long-tailed bats are inadequate to sustain the long-tail bat population at Mt Messenger and to achieve the Applicant's objective of no net loss. This point is significant in the context of the relevant statutory planning documents[5] which seek to maintain and enhance indigenous biodiversity and in particular significant indigenous biodiversity values and significant natural areas (including rare fauna species).

7.5. Dr O'Donnell comments on Mr Chapman's opinion that:[6]

"…it is unlikely roost availability is a limiting factor on the bat population in the general area."

7.6. Dr O'Donnell states:[7]

[5] Including the RPS (BIO Objective 1, BIO Policies 1-5), NPDP (Objective 16, Policies 16.1 and 16.2).
[6] Chapman EIC at [42(c)(i)].
[7] O'Donnell at [7.12].

"Mr Chapman provides no evidence for this assertion and I am unaware of any studies of roost availability in the Project area. This contrasts with the studies of long-tailed bats elsewhere in New Zealand I have referred to in section 4 of my evidence, which suggest that breeding roost sites are extremely specialised with very limited abundance in the landscape."

7.7. Dr O'Donnell considers that Mr Chapman has significantly underestimated the residual adverse effects on bats that would occur even if the Vegetation Removal Protocols (VRPs) are effectively implemented. Dr O'Donnell references studies, many of which he has been involved with, indicating that breeding roosts are very rare resources in any environment.

7.8. Dr O'Donnell does not agree with Mr Chapman's conclusion that *"the construction of the Project will result in the loss of less than 1% of the potential habitat for bats in the wider Project area"* when no one has mapped the actual long-tailed bat habitat in the area.[8] Dr O'Donnell provides examples of pest control undertaken by DOC in bat management areas where, subsequently, the locations of bat roosts in relation to the pest management areas have been found to not coincide (Maruia), or coincide only marginally (Heaphy).[9] The realisation only occurred following radio tracking studies. It is Dr O'Donnell's opinion that if the PMA does not coincide with bat roost habitat for this Project, maintenance of foraging habitat would be meaningless for bats.[10]

7.9. Dr O'Donnell considers that compensatory pest control could benefit long-tailed bats and potentially achieve no net loss for the Project's effects. To address the issues that Dr O'Donnell has raised in his evidence, and to provide appropriate mitigation to achieve the Applicant's objective of no net loss, either radio-tracking studies and a focused pest management programme based on known roost locations over an area similar to what has been proposed by NZTA (i.e. 3,650 hectares) would be required or alternatively pest management over an effective area of 5,000 hectares where there is long-term certainty over the whole area being managed.

[8] O'Donnell EIC at [7.13].
[9] O'Donnell EIC at [9.14].
[10] O'Donnell EIC at [10.2].

7.10. The Applicant's approach has been to increase the area of pest management that was originally proposed in the NOR (and EIC) from 1,085 hectares to 3,650 hectares which is outlined through NZTA's supplementary evidence. The proposed 3,650 hectare Pest Management Area ("**PMA**") is close to the proposed Bypass and adjacent to the Parininihi area which is currently being pest managed by Ngati Tama.

7.11. Dr O'Donnell's evidence identifies that the total PMA could potentially include an adjoining pest managed area such as Parininihi, in addition to the 3,650 hectares proposed by NZTA, subject to there being long-term certainty with the pest management programme for the adjoining area. I understand that intensive pest control is currently being undertaken by Ngati Tama over an area of approximately 1,300 hectares at Parininihi which results in a total of approximately 4,950 hectares of pest management which is more or less contiguous.

7.12. I understand that the conservation covenant that applies to the Parininihi site does not require that ongoing pest management must occur there to the required intensity to benefit bats. I also understand that pest management at Parininihi is subject to availability of funding from a range of sources so its ongoing implementation at current levels is somewhat uncertain.

7.13. If the pest management by Ngati Tama at Parininihi were to stop completely, or have reduced targets or effectiveness for any reason, then the overall benefits to bats of the combined proposed PMA and Parininihi pest management would potentially not be achieved. Those outcomes would be outside of NZTA's control. In my opinion the pest management at Parininihi therefore does not provide the long-term certainty that is necessary for it to be relied on as part of the overall bat mitigation.

7.14. I am also concerned at the uncertainty due to the proposed PMA being referred to as a 'preferred site' by the Applicant[11]. I understand from this that it is possible that the location of the PMA might change depending on whether some of the privately owned land is able to be secured for pest management purposes. It is clear from Dr O'Donnell's evidence that the location of the PMA, whether it is likely to contain long-tailed bat populations and factors such as the shape of it (due to edge invasion) are

[11] MacGibbon Supplementary Evidence at [11] and [Figure 1].

important considerations. I consider it to be important that the PMA is confirmed now given the significance of the location of the area to assessing its adequacy to compensate for adverse effects.

7.15. Dr O'Donnell has also commented on some changes to the proposed VRPs in the Bat Management Plan which is contained in the ELMP. His suggested changes relate to which trees the protocols should apply to and strengthening wording to ensure the protocols are consistent with the 'NZTA Bat Management Framework' by being prescriptive rather than suggestive. NZTA has requested that the ELMP (including the Bat Management Plan) be approved through the hearings process[12] so the ELMP should be updated to address these matters.

Effects on Lizards

7.16. I rely on the evidence of Ms Adams in relation to lizards and I summarise my understanding of the key matters in her evidence below:

a. Ms Adams considers there are limitations for detecting lizards and she supports the approach by the Applicant to assume that lizard species will be present.
b. Ms Adams identifies that mainland pest control programmes in New Zealand have generally shown no measurable benefits to lizard populations.
c. Ms Adams' opinion is that the proposed Pest Management Plan will provide no benefit to lizards with the proposed pest management targets, particularly due to the absence of mice control. She considers that landscape scale control of mice is not currently feasible.
d. Ms Adams' considers that only a small proportion of the population would be caught during salvage. She considers that only limited salvage effort (as proposed) is warranted.
e. Ms Adams' identifies that the release location of salvaged lizards will be the predator-proof fenced area but this site is still to be determined and has not been identified by the Applicant. She has proposed criteria for site selection which should be specified in conditions.

7.17. Ms Adam's agrees with Mr Chapman's recommendation that addressing the effects of the Project on lizards requires a suitable predator exclusion

[12] Roan Supplementary Evidence at [21].

fence around a minimum area of 1ha containing an existing striped skink population. Other important considerations are species and population of lizards present, habitat, biosecurity/pest management and land tenure. The type of fence as well as eradication and ongoing management of predators are important. Legal protection and monitoring are also necessary to enable effective management in perpetuity.

7.18. Ms Adams' supports the proposed compensation approach for lizards. However, the conditions and ELMP should be amended to adequately address site selection, fence specifications, eradication and long-term management.

Effects on Avifauna

7.19. I rely on the evidence of Dr Burns in relation to avifauna and I summarise my understanding of the key matters in his evidence below:

a. The habitat quality for native birds is high within the Project area and the diversity of birds present is relatively high.
b. Contractors for the Applicant have found native birds throughout the Project area, often in high abundance.
c. Kiwi are found throughout the Project area. The potential impacts of the Project on kiwi include vehicle strike, severance of current adult territories, severance of dispersal for juvenile kiwi, increased population fragmentation, habitat loss and increased mortality through falling off the many steep slopes and cliffs that will result from the Project works. The impact of construction and machinery on any kiwi that occupy the Mangapepeke Stream floodplain could be substantial.
d. Kōkako that have been translocated to Parininihi may use the Project area when exploring their new habitat. Kōkako are likely to disperse into the Project area in the future as their numbers at Parininihi increase.
e. The potential impact of the Project on Australasian bittern is currently uncertain, as the species has not been detected within the Project area. Dr Burns considers it reasonably likely that they utilise the area at least on occasion. If they are present in the Mangapepeke valley the impact of the Project on this Nationally Critical species is likely to be an increase in vehicle collisions, and a decrease or complete loss of seasonal food resources, and increased severance of the Taranaki regional wetland network for this species.

f. The potential impact of the Project on forest birds is major due to loss of habitat and edge effects from the new highway. Dr Burns describes the effects as being complex and its full extent is unknown, so the level of mitigation required is uncertain.

g. Dr Burns considers the area and targets for the proposed PMA to be sufficient to give a high likelihood that the pest management will be adequate for general forest birds (except kiwi) and wetland birds, except bittern if they are detected. However, he identifies some potential deficiencies with the proposed Pest Management Plan. The deficiencies relate to ground control in areas of steep topography, inadequate cat trapping and uncertainties with details of mustelid and cat monitoring.

h. With the exception of the deficiencies with some of the methods, Dr Burns considers that the pest management that is proposed is likely to be adequate if a suitable kiwi fence to protect kiwi from vehicle strike is also constructed. However, there is some uncertainty with the locations and effectiveness of a kiwi fence so an adaptive management approach is important.

i. Dr Burns recommends that provision should be made for mitigation measures for bittern, if bittern are detected within the Project area following additional survey effort.

7.20. I rely on Dr Burns' opinion that the revised ELMP and the proposed PMA (3650 hectares) will adequately address most of the effects on avifauna.

7.21. The proposed location of kiwi fencing is currently not clear in the ELMP which sets out that the details are still to be determined. The requirement to confirm the details of the fence (including its location) and the reasons should be specifically addressed in a condition. The details should be covered in an amended ELMP with provision made for consultation with DOC on the details of the kiwi fence through DOC's representation on an Ecology Review Panel.

7.22. An adaptive management framework is important for kiwi because Dr Burns considers there is some uncertainty whether the proposed kiwi fence will be effective in avoiding direct mortality of kiwi and whether culverts will allow passage of dispersing kiwi from one side of the road to the other. If either proves to be ineffective then Dr Burns' evidence sets out that alternative mitigation or compensation would be required. The

conditions should require the ELMP to be reviewed and amended if the kiwi fence or culverts are not successful.

7.23. Similarly, additional mitigation would be required if Australasian bittern are detected within the Project area. The ELMP sets out that additional survey for this species is planned. The conditions should require the ELMP to be reviewed and amended if bittern are detected, with review of the proposed provisions by an Ecology Review Panel.

7.24. The Applicant has proposed in the suggested conditions that a Pest Management Review Panel will be established to review the pest management methods, monitoring and results. The condition includes provision for DOC to have a nominated representative on the panel. I support a panel as a useful way of addressing Dr Burns' concerns regarding the deficiencies that he considers the Pest Management Plan to have. However, I consider that the panel should be an Ecological Review Panel with a broader mandate than pest management alone. I address this point further in part 8 of my evidence.

Effects on Freshwater

7.25. I rely on the evidence of Dr Drinan in relation to freshwater effects and I summarise my understanding of the key matters in his evidence as follows:

a. Dr Drinan considers the aquatic macroinvertebrate communities within the Project area are generally in very good to excellent condition and the waterways of the area provide habitat for numerous rare and at-risk taxa of notable conservation value.

b. Dr Drinan identifies that Koura (freshwater crayfish) and kakahi (freshwater mussels) are likely to be present throughout the Project area. Native freshwater fish species present in the waterways in the Project area include shortfin eel, longfin eel, giant kokopu, banded kokopu, inanga, common bully and redfin bully. Additional native fish species that Dr Drinan considers may be present include shortjaw kokopu, koaro and giant bully. He notes that the apparent lack of non-native fish from both the Mimi and Tongaporutu Catchments adds to their conservation value.

c. Dr Drinan considers that the Tongaporutu River catchment in particular has significant conservation values throughout the entire catchment. The Mimi River catchment is also significant.

d. The Taranaki Regional Policy Statement and the Taranaki Regional Freshwater Plan recognise both the Tongaporutu and Mimi rivers as having high natural, ecological and amenity values[13].

e. Dr Drinan identifies that the main short-term effects of the Project include physical disturbance of waterways during road construction, habitat loss, fish passage impediments, sedimentation, vegetation clearance, potential contamination from construction-related sources, and flow alteration due to water takes. He identifies the main long-term effects as including potential fish passage impediments, loss of stream habitat, potential biosecurity risks, and poor stormwater quality runoff.

f. Dr Drinan considers that the Stream Ecological Valuation (SEV) method that has been adopted by the Applicant for their assessment is not an appropriate or sufficient tool for assessing biodiversity values, nor for quantifying the amount of compensation required for lost biodiversity values. He considers that the current approach taken by the Applicant falls short of achieving no net loss for the Project for freshwater biodiversity values. Dr Drinan has recalculated the Environmental Compensation Ratios (ECRs) and he has used a multiplication factor to account for the biological importance of headwater streams. He considers that the amount of stream to be restored with riparian planting based on the affected stream length should be increased from the proposed 8,153m^2 to approximately 12,627m^2.

g. The practice for undertaking environmental compensation requires SEV values to be known from the proposed restoration sites, as well as the impact site. The reason being that the proposed restoration site may have high ecological values that cannot be improved upon, or conversely, the site may have low ecological values that are not amenable to significant improvement in ecological value. Given the importance of needing certainty for the restoration sites, Dr Drinan is concerned that the availability of intended restoration sites for riparian planting has not been confirmed by NZTA.

h. Dr Drinan is unconvinced that long-term, unimpeded fish (and kōura) passage is achievable for the proposed culverts with medium to higher-gradients/lengths, based on the information provided, and

[13] Taranaki Regional Policy Statement, Appendix 1: River and stream catchments of high quality or high value for their natural, ecological and amenity values and Taranaki Regional Freshwater Plan, Appendix 1A: Rivers and stream catchments with high natural, ecological and amenity values.

mitigation proposed, by the Applicant. He recommends post-construction monitoring of the higher risk culverts with remedial works or mitigation/compensation if fish passage cannot be provided as required. He is also concerned that fish passage is not being provided at four culvert sites.

i. Dr Drinan's opinion is that there remains a high potential of significant sediment loss for this Project, which consequently poses a major risk to the biodiversity values of the receiving aquatic environments.

j. Dr Drinan disagrees with the Applicant's attempted assessment of effects and proposed takes regarding the proposal to limit surface water takes from the Mimi River and Mangapepeke Stream. He is comfortable with TRC's proposed consent conditions for surface water takes, including the take limit of 25% of instantaneous flow. However, he requests an additional condition to require weir structures associated with the water takes to provide unimpeded fish passage.

k. Dr Drinan considers that there are a number of deficiencies with the Fish Recovery and Rescue Protocols provided in the ELMP. He considers that more effort should be required.

l. Dr Drinan has noted some concerns with the riparian fencing and planting proposals including the need for an ecologist to design and manage the restoration works, further stream modification due to culverts for stock crossings and explanation for what constitutes 'effective' riparian habitat where there is less than 10m width available for planting.

m. Dr Drinan recommends post-construction SEV, macroinvertebrate and fish surveys should be undertaken three years after construction of stream diversions and that an SEV assessment should be undertaken of stream reaches subject to riparian planting five years after the planting has occurred.

n. Dr Drinan supports the use of continuous in-stream sediment monitoring. In the event that prescribed management thresholds are exceeded, he recommends timely remedial action, an assessment of the actual effects of any discharge from the Project on water clarity and suspended sediment and macroinvertebrate sampling for any exceedance of thresholds for more than 48 hours. This information would inform any required mitigation/compensation which would be subject to review by an Ecology Review Panel and approval by TRC.

7.26. The figures in Section 4.6 of the ELMP show the potential locations for riparian planting. I understand that agreements with landowners are still being progressed to enable the locations of the riparian planting to be confirmed. The ELMP recognises that stream restoration should be located close to the area affected and in similar environmental conditions[14]. In addition, Dr Drinan's evidence sets out that confirmation of the compensation site is important because it may have high ecological values that cannot be improved upon, or conversely, it may have low ecological values that are not amenable to significant improvement in ecological value.

7.27. There is a risk that the riparian planting in the intended locations will not be able to be implemented if landowners do not agree to allow the planting and associated legal protection on their land. In that case alternative compensation site locations would presumably be further away from the affected area (potentially in different catchments) and the alternative sites may have different environmental conditions making them unsuitable. The planting areas may also be disaggregated which would reduce the overall ecological benefits. In my opinion it is important for the location of the riparian planting to be confirmed by the Applicant with certainty now.

7.28. Dr Drinan's evidence recommends additional riparian planting which would require further stream length suitable for riparian planting to be identified. Furthermore, it is possible that riparian planting could form one of the mitigation response measures if a sediment event causes adverse effects during construction. It is unclear whether suitable compensation sites would be available for these purposes.

7.29. I note that the Applicant has assessed that the proposal is consistent with Policy 6.6.2 in the Regional Freshwater Plan because "permanent culverts will be designed to allow for fish passage"[15]. The recommended conditions in the TRC s42A report include requirements for fish passage to be maintained but the Applicant's proposed conditions attached to Mr Roan's supplementary evidence propose that fish passage will not be provided for three permanent culverts (culverts 2, 10 and 13) and between

[14] ELMP (July 2018), section 4.6.4.1.
[15] Appendix A, AEE.

culverts 5 and 6 (four sites in total). I consider this to be contrary to Policy 6.6.2.

Effects Associated with Erosion and Sediment

7.30. I rely on the evidence of Mr Duirs in relation to erosion and sediment effects and I summarise my understanding of the key matters in his evidence as follows:

a. Mr Duirs considers the management plan approach proposed by the Applicant to be appropriate for the Project. He considers the details outlined in the draft management plans that he has reviewed are generally reflective of best practice erosion and sediment control and if implemented effectively will go a significant way to reducing the adverse erosion and sediment effects of the Project.

b. However, he identifies that there are a number of characteristics of this Project which significantly elevate the erosion and sediment risks of the works including topography, erosion susceptible soils, high rainfall, the design characteristics and scale of the earthworks, large numbers/lengths of stream diversions and culvert installations and the high ecological values of receiving watercourses.

c. Mr Duirs' opinion is that the increases in sediment predicted by the Applicant for waterways as a result of the Project works are significant. He considers the predicted increases could give rise to adverse sedimentation effects within these watercourses. He considers the adverse effects could be significantly more than minor.

d. Mr Duirs considers the earthworks through a 2.55km central part of the site present significant construction challenges and a significant potential for adverse erosion and sediment discharge effects within the high value waterbodies identified in these catchments. His concerns in regard to these constructability constraints relate to the potential that the Applicant is unable to implement best practice erosion and sediment control measures in some areas, resulting in a lower level of sediment treatment than anticipated and subsequently an increased potential for adverse sediment effects.

e. Mr Duirs has concerns with the monitoring regime proposed by the Applicant to detect adverse sedimentation effects. He identifies that the proposed response to any measured period of elevated sediment discharge effects is limited to on-site remedial works only (for instance sediment control upgrades). These responses do not

respond to any adverse sediment effects which may have already occurred within downstream receiving environments. In addition, receiving environment sediment deposition/habitat monitoring is limited to the Mimi Swamp Forest site only. Mr Duirs considers that the proposed earthworks present a high risk for adverse sedimentation effects to occur within both the Mimi and Mangapepeke catchments and within both wetland and aquatic stream habitats.

f. Mr Duirs considers continuous in-stream sediment monitoring to be important for this site. However, he considers the Applicant's proposal to use only two continuous monitoring units downstream of the works to be inadequate because it will not provide an adequate baseline measure to quantify the adverse sediment effects. He recommends continuous monitoring at upstream and downstream locations within both catchments.

g. Mr Duirs agrees with Dr Drinan that a direct mitigation/compensation response should occur for any adverse ecological effects as a result of site sediment discharges.

7.31. Appropriate mitigation for the effects that have been identified by Mr Duirs is required to ensure that the proposed works will be undertaken in a manner consistent with numerous objectives and policies in the relevant statutory documents related to erosion and water quality[16]. Some of the provisions (which are contained in Appendix 2 of my evidence) seek to "maintain and enhance" the quality of surface water. This sets a high threshold for effects management.

7.32. Mr Duirs' considers that it will not be possible to avoid sedimentation of waterways and that the associated adverse effects due to sediment discharges could be significantly more than minor. The requirement to "maintain and enhance" will therefore only be able to be met with adequate provision for mitigation and/or environmental compensation.

7.33. Given the lack of any clear mitigation response requirement in the event of a sediment discharge resulting in adverse effects, I disagree with the Applicant's assessment in Appendix A of the AEE that the effects on rivers

[16] Including the RPS (AER Objective 1, WQU Objective, WQU Policy 1, WQU Policy 3, WET Objective 1, WET Policy 1, BIO Objective 1, BIO Policies 1-5), RFWP (Objective 3.1.5, Objective 3.1.6, Policy 3.1.2, Policy 3.1.3, Policy 3.1.4, Policy 5A.1.1, Objective 6.2.1, Policy 6.2.2).

and wetlands will be “net positive”. I consider this conclusion could only be reached with additional mitigation than what is currently proposed specifically to address adverse sedimentation effects on waterways.

7.34. Given the potential high consequence of adverse freshwater effects related to sediment discharges that Mr Duirs has identified, it is particularly important that conditions include a robust monitoring and response process.

Effects on Invertebrates

7.35. I rely on the evidence of Mr Edwards in relation to invertebrate effects and I summarise my understanding of the key matters in his evidence as follows:

a. Mr Edwards considers both the invertebrate community values in the Project area and the overall level of unmitigated effects on invertebrates to be high.

b. Mr Edwards considers that not all invertebrate species will benefit from pest management, although he accepts the measures proposed by the Applicant (including the PMA as now proposed) would adequately compensate for the adverse effects on invertebrates.

c. Mr Edwards has identified that there will be irreversible loss of approximately 10 hectares of high value and nationally rare invertebrate habitat in the Mangapepeke floodplain. This includes construction effects of approximately 5 hectares and indirect effects from fragmentation, changes to water tables, and water flows.

d. Mr Edwards considers that further details (and conditions) are needed to ensure that biosecurity risks are appropriately managed. He identifies risks from exotic predatory snails, exotic slugs, exotic argentine ants, plague skinks and other invasive invertebrates (in addition to potential weeds).

e. Mr Edwards agrees with Dr Drinan that direct responses to adverse sedimentation events should be provided for, given the potential effects on wetland invertebrates.

7.36. Mr Edwards’ outlines the biosecurity management measures that he considers should be covered in conditions in Part 6 of his evidence. I consider his recommended conditions to be suitable.

Effects on Marine Values

7.37. I rely on the report of Ms Hillock which is attached to my evidence in relation to marine effects. I summarise my understanding of the key matters in Ms Hillock's report as follows:

a. Ms Hillock identifies that the assessment of marine habitats undertaken on behalf of the Applicant was a basic desktop review of available literature and data, which is limited in detail for the Mimi and Tongaporutu estuaries, dated, and doesn't contain specific lists of species or habitat types. In the absence of more detailed information about habitats and species composition, she agrees with the finding that the Tongaporutu and Mimi estuaries are likely high to very high value marine benthic habitats.

b. Ms Hillock considers the potential adverse marine effects from the proposed Mt Messenger Bypass would result primarily from sediment discharge from the construction sites. Increased sediment discharge to estuarine environments can have a detrimental effect on benthic communities.

c. Ms Hillock identifies that the magnitude of effect of potential sediment discharge to the estuaries has been assessed by the Applicant as 'very low' based on an assumption that the benthic community will be tolerant of elevated levels of sediment suspension and deposition. She considers that it is not possible to assume that the benthic community will be tolerant of (or sensitive to) elevated levels of sediment suspension or deposition without first knowing the species composition of the habitat in question. Without this prior knowledge, magnitude of effect could range anywhere from 'very high' to 'low' resulting in a level of effect ranging from 'very high' to 'low'.

d. Ms Hillock considers that direct, continuous monitoring of sediment discharge from the construction site is necessary to ensure that agreed thresholds are not exceeded.

7.38. I consider that the focus should be on avoiding marine effects by managing erosion and sediment discharges at the site. Based on Ms Hillock's report, there are some risks of adverse marine effects. However, given the remoteness of the site from the estuaries, I consider that a review condition imposed on the TRC resource consents would be sufficient to enable such a review of consent conditions to take place if

any adverse effects are found to be occurring which require specific mitigation measures to be imposed.

8. ADEQUACY OF PROPOSED MITIGATION, OFFSETS AND COMPENSATION OVERALL AND CONDITIONS

8.1. I support the Applicant's mitigation hierarchy approach (i.e. avoid, remedy, mitigate then offset or compensate for residual effects). For effects that cannot be avoided, remedied or mitigated, the Applicant has proposed to offset or compensate. Dr Barea considers an environmental compensation approach to be more practical due to the inability to measure offsets for some aspects, and the inability to monitor the success of the EI (Ecological Integrity) aspect in the future.

8.2. A true offset must be measurable so that losses and gains can be quantitively compared and to provide a high level of confidence that no net loss can be achieved. Dr Barea explains the difference between biodiversity offset and environmental compensation in his evidence. He identifies that *"a critical difference between environmental compensation and biodiversity offsets is that compensation is not designed to demonstrate, a priori, that no net loss or a net gain in biodiversity is achievable on the ground"*[17].

8.3. I rely on Dr Barea's opinions in regard to the validity of the Applicant's offset approach. Dr Barea expresses the opinion in his evidence that there is currently substantial uncertainty with the offset design and the ability to know whether it achieves its intended no net loss outcome within the 10 year time period stated. Dr Barea considers that the proposed pest management currently constitutes environmental compensation rather than a biodiversity offset.

8.4. I do not consider it critical that a biodiversity offset approach is taken, provided adequate environmental compensation is proposed by the Applicant and the decision-maker recognises the nature of what is proposed. The Act recognises both offset and compensation as valid approaches for providing positive effects and distinguishes between them through references to offset or compensate[18]. For a compensation

[17] Barea EIC at [3.19].
[18] Sections 104(1)(ab) and 171(1B).

approach, it is critical that the approach and the intended outcomes and performance measures must be provided now by the Applicant and detailed in conditions, to provide a high level of certainty, and so that the adequacy of it can be assessed and commented on by submitters. The need for any future discretion by the Applicant, NPDC and TRC on the form or quantum of compensation should be avoided.

8.5. I rely on the evidence of the DOC witnesses in regard to the adequacy of the proposed compensation package to address the adverse ecological effects of the proposal. The evidence presented by the DOC experts has determined the current proposals for mitigation, offset and compensation to be generally adequate in relation to avifauna (with reservations around kiwi and bittern), lizards, invertebrates and terrestrial vegetation, subject to some of the details being confirmed. However, the proposals remain inadequate in relation to:

a. Bats, in particular long-tailed bats. This could be addressed through radio-tracking studies to locate bat roosts and confirm that the proposed PMA is appropriate or alternatively through a larger PMA to increase the likelihood that the PMA will contain bat roosts.
b. The presence and potential effects on Australasian bittern are currently unknown. The potential effects on kiwi will depend on whether the kiwi fence avoids mortality from vehicle strike and whether culverts allow sufficient passage of dispersing kiwi. An adaptive management approach is important for both of these species.
c. Permanent effects on waterways due to stream diversions and permanent culverts. This could be addressed through compensation by a larger area of riparian planting.
d. Improved design of fish passage through some of the culverts.
e. The proposed Fish Recovery Protocols.
f. Potential effects from sedimentation during the construction phase. This could be addressed by improvements to the monitoring regime and adaptive management for ecological effects from sediment events given that the extent of effects are currently unknown and (in part) dependent on the success or failure of controls during construction.

8.6. All compensation would need to be agreed to and be proposed by NZTA in accordance with sections 104(1)(ab) and 171(1B) of the Act.

8.7. The Applicant has filed suggested conditions which are included with Mr Roan's supplementary evidence. My general comments on the conditions follow:

a. The evidence provided by DOC witnesses has identified a number of issues with the ELMP. For example three fundamental issues are that the location of the PMA, riparian planting and predator fenced lizard enclosure have not yet been confirmed. The Applicant has proposed that the ELMP be approved through the hearing process as a final management plan. I consider some of these issues need to be resolved before granting consents or recommending confirmation of the NOR. In my opinion the ELMP should not be considered final until these issues are resolved. Further, the ELMP should be updated to address the issues that the DOC witnesses have raised and the final version should be subject to a full review by an Ecology Review Panel (including a DOC nominee) prior to certification.

b. The Applicant has proposed that disputes or disagreement on management plans between the consent holder/requiring authority and the Councils may be determined by a binding decision by a mediator. I consider it inappropriate that the responsibility for decision making on management plans be delegated in that way, in the context of this Project.

c. The conditions rely too heavily on important performance standards being contained within management plans. Critical details such as the targets for pest management, the selection criteria for the predator fenced lizard enclosure and the monitoring requirements for sediment, fish and invertebrates should be stated in the conditions rather than within the management plans.

d. More robust conditions for monitoring sediment discharges, monitoring fish and invertebrates and responding to events which result in adverse sediment related effects are required. The conditions should include requirements for in-stream continuous sediment monitoring both upstream and downstream of the works within each catchment, monitoring locations, turbidity triggers and MCI/QMCI triggers for mitigation and environmental compensation.

e. Biosecurity management conditions should also refer to exotic species of insects, any other invertebrates, weeds, or plague skink

eggs that may be introduced with plants brought into the area for restoration planting.

f. The proposed Pest Management Peer Review Panel should be replaced by an Ecology Review Panel with broader responsibilities for reviewing the ELMP in its entirety as well as reviewing monitoring outcomes and inputs where adaptive management is required.

g. Use of terminology such as "where feasible" (for example TCV9) is inappropriate.

9. PART 2 ASSESSMENT

9.1. I have considered the key statutory documents in section 6 of my evidence, and provided comments under the various sub-headings in section 7 of my evidence, drawing on my findings on the key provisions in these statutory planning documents. I have broadly summarised the key statutory documents, as generally seeking to maintain and enhance indigenous biodiversity, and in particular significant indigenous biodiversity values and significant natural areas (including rare fauna species).

9.2. I now turn to Part 2 of the Act. I have stated my opinion that the Project will have unavoidable effects on the natural character of wetlands, rivers and potentially the coastal environment so their preservation and protection in terms of section 6(a) will not be possible. In addition, the Project will have unavoidable effects on significant indigenous vegetation and significant habitats of indigenous fauna.

9.3. In King Salmon the Supreme Court said in relation to section 6:[19]

"It is significant that three of the seven matters of national importance identified in s 6 relate to the preservation or protection of certain areas, either absolutely or from 'inappropriate' subdivision, use and development (that is, ss 6(a), (b) and (c)). Like the use of the words 'protection' and 'avoiding' in s 5, the language of ss 6(a), (b) and (c) suggests that, within the concept of sustainable management, the RMA envisages that there will be areas the natural characteristics or natural features of which require protection from the adverse effects of development. In this way, s6

[19] At [28].

underscores the point made earlier that protection of the environment is a core element of sustainable management."

and:[20]

"We see this language as underscoring the point that preservation and protection of the environment is an element of sustainable management of natural and physical resources. Sections 6(a) and 6(b) are intended to make it clear that those implementing the RMA must take steps to implement that protective element of sustainable management."

9.4. In this case, the Applicant proposes to achieve such protection of significant indigenous flora and fauna through its 'no net loss' and 'net gain' approach. As stated above, I accept that a compensatory (or offset approach if it were demonstrated) could be acceptable for this Project. However, the compensation proposal is not in a form that would protect significant indigenous fauna (or habitat) in this respect. Referring to section 5 of the Act, neither does the proposal safeguard the life-supporting capacity of air, water, soils and ecosystems, even considering the larger PMA now proposed.

9.5. The level of potential effect on long-tailed bats and their habitat is high. I have referred to Dr O'Donnell's evidence, which states that if bats are forced to use poorly insulated roosts, or are killed during tree felling, the Mt Messenger colony of bats is at risk of going extinct.

9.6. Dr Barea states that in situations where uncertainty is high, and the level of conservation concern of affected biodiversity is also high, it is good practice to ensure that proposed management actions provide a high level of confidence that intended outcomes can be achieved. I agree. Dr Barea's approach is consistent with the precautionary approach. Considering Part 2 of the Act, my opinion is that consent should be declined unless a larger PMA is provided. This opinion is largely based on Dr O'Donnell's opinion that the proposal, even with the proposed PMA of 3,650 hectares, would still have a high risk that positive effects would not be achieved for long-tailed bats to compensate for the adverse effects that will result.

[20] At [148].

9.7. Unless Dr O'Donnell's and Dr Drinan's concerns can be addressed, the NOR and consents would not recognise and provide for the matters in sections 6(a) and 6(c) of the Act, for the reasons I have set out.

9.8. Although I have recognised the positive benefits of the Project, I do not consider that the current proposal should be granted, or a recommendation made to confirm the NOR, on consideration of the purpose and principles in Part 2. In drawing this conclusion, I have considered the comments of the Supreme Court on sections 5 and 6.

10. CONCLUSION

10.1. The ecological values that will be affected by the Project works are high. I consider that the Applicant has generally followed a good approach in terms of the effects management hierarchy and the proposal to undertake pest management in perpetuity as part of the package to manage the effects of the Project on biodiversity values. I also consider that the consultation that the Applicant has undertaken with DOC has been appropriate.

10.2. Nevertheless, based on the information that is available to me at present, I consider that the NOR should be withdrawn and the resource consent applications should be declined unless a number of key issues, which are outlined in my evidence, are addressed. The main issues are the quantum of mitigation and/or compensation to address adverse effects on long-tailed bats and freshwater values. In relation to biodiversity and freshwater, the plan provisions that I have cited in my evidence regarding maintenance and enhancement of indigenous biodiversity and surface water quality would not be met if suitable positive effects are not achieved. Further, referring to sections 6(a) and 6(c) of the Act, significant habitats of indigenous fauna would not be protected.

10.3. If the resource consents are granted and the NOR is accepted then I consider a number of changes would be required to the conditions that have been suggested by the Applicant.

APPENDIX 1
MT MESSENGER BYPASS MARINE EFFECTS REPORT (KRISTINA HILLOCK)

Department of Conservation
Te Papa Atawbai

Assessment of effects of sedimentation from the proposed Mt Messenger Bypass on the Mini and Tongaporutu estuaries

Existing marine environments

1. An assessment of the marine habitats that could potentially be affected by the Mt Messenger Bypass was undertaken by Opus International Consultants Ltd (Opus) for the Mt Messenger Alliance (the Alliance): Assessment of Ecological Effects - Marine Ecology, December 2017, Technical Report 7g. Of the marine habitats downstream of the Mt Messenger Bypass, two were identified as having the greatest potential for adverse effects: the Mimi estuary and the Tongaporutu estuary. I agree with this assessment.

2. The assessment of marine habitats undertaken by Opus was a basic desktop review of available literature and data, which is limited in detail for the Mimi and Tongaporutu estuaries, dated, and doesn't contain specific lists of species or habitat types. However, the report does state:

   "Tongaporutu Estuary is noted in the RCPT for containing abundant shellfish with high species diversity and for this reason is an Area of Outstanding Coastal Value. The Draft Coastal Plan similarly includes Tongaporutu Estuary within an area of Outstanding Natural Features or Landscapes……Tongaporutu Estuary is considered a good example of natural mudflat and tidal wetland communities that are otherwise rare in North Taranaki and is noted for the presence of excellent saltmarsh communities."

   and

   "The Mimi River estuary includes an extensive sandspit and has tidal mudflats, salt marsh and sand dunes, all of which are uncommon in North Taranaki….The biotic natural character attributes of Mimi Estuary were also described in the Draft Coastal Plan as very high."

3. In the absence of more detailed information about habitats and species composition, I agree that the Tongaporutu and Mimi estuaries are likely high to very high value marine benthic habitats, as stated by Opus.

Effects of sedimentation on estuarine benthic habitats

4. Increasing sediment load has been recognised globally as a major threat to marine biodiversity, and can influence the structure, biomass and metabolism of benthic assemblages (Balata et, al. 2007). In particular, terrestrially derived sediment deposition in shallow estuarine communities is emerging as a world-wide threat (Norkko et, al. 2002).

5. Sediment deposition on benthic communities can result in complete burial and smothering, resulting in reduced levels of oxygen and nutrients, and an accumulation of metabolic waste products and hydrogen sulphide.

6. However, it is not only catastrophic, complete burial depositional events that can have an effect on benthic habitats and species. While thin layers of terrestrial material may not completely defaunate benthic habitats, they may lead to more subtle effects that nonetheless change benthic community structure (Lohrer et, al. 2004).

7. Fine terrestrially derived particles may clog filter-feeding appendages of many benthic species, not directly resulting in mortality, but instead affecting nutrition and reproduction (Ellis et, al. 2002).

8. Sediment deposition can also affect larval recruitment, and thin depositions could prevent larval settlement (Marinelli & Woodin 2002).

9. Lohrer et al. (2004) demonstrated that a terrigenous sediment deposition of only 3 mm is enough to alter microbenthic community structure, reduce the number of taxa, and the density of individuals. The same study demonstrated a decline in taxa and individuals by nearly 50% with 7 mm sediment deposition. They found that benthic communities did not recover completely between repeated depositional events (every month during summer), indicating that even thin layers of terrigenous sediment can result in habitat degradation in estuarine systems. The effects associated with terrigenous sediment deposition in this study were seen in a broad range of taxa (e.g. bivalves, gastropods, amphipods and

polychaetes) and functional types (e.g. suspension feeders, surface- and sub-surface deposit feeders).

Potential impacts of the Mt Messenger Bypass Project

10. The potential adverse effects from the proposed Mt Messenger Bypass would result primarily from sediment discharge from the construction sites.

11. Opus addressed the likelihood (or risk) and magnitude of these effects occurring in the Mimi and Tongaporutu estuaries as a result of construction of the Mt Messenger Bypass in the absence of any erosion and sediment control measures. Using the Ecological Impact Assessment guidelines (EcIA) produced by the Environmental Institute of Australia and New Zealand (EIANZ, 2015), Opus has assigned the estuarine habitat of the two estuaries as high value, which I agree with.

12. The magnitude of effect of potential sediment discharge to the estuaries has been assessed by Opus as 'very low' based on an assumption that the benthic community will be tolerant of elevated levels of sediment suspension and deposition, and therefore a level of effect from the proposed bypass as 'low'.

13. However, it is my opinion that it is not possible to assume that the benthic community will be tolerant of (or sensitive to) elevated levels of sediment suspension or deposition without first knowing the species composition of the habitat in question. Without this prior knowledge, magnitude of effect could range anywhere from 'very high' to 'low' resulting in a level of effect ranging from 'very high' to 'low'.

Assessment of the adequacy of proposed mitigation and conditions offered

14. There are no conditions or mitigation proposed that directly relate to marine ecology. However, any conditions that relate to reducing sediment discharge from the construction site will directly benefit the marine environment.

Conclusion

15. Increased sediment discharge to estuarine environments can have a detrimental effect on benthic communities.

16. The conclusions reached in the Assessment of Ecological Effects – Marine Ecology are inaccurate with respect to the potential effect of sediment discharge from the Mt Messenger Bypass project due to a lack of data. It is not possible to determine the potential level of effect of on the Mimi and Tongaporutu estuaries based on existing data.

17. While no monitoring of marine habitat is proposed for the Mt Messenger Bypass project, direct, continuous monitoring of sediment discharge from the construction site to ensure that agreed thresholds are not exceeded will directly benefit the downstream marine environment.

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APPENDIX 2

RELEVANT EXTRACTS FROM STATUTORY DOCUMENTS

Regional Policy Statement for Taranaki 2010

Fresh water: Sustainable allocation of surface water resources

WAL Objective 1

To sustainably manage the taking, use, damming or diversion of fresh water in the Taranaki region to enable people and communities to meet their needs for water while safeguarding the life-supporting capacity of water and related ecosystems and avoiding, remedying or mitigating any adverse effects on the environment arising from that use.

WAL Objective 2

To protect the natural character of water bodies from inappropriate subdivision, use and development.

WAL Policy 2

Natural water levels and flows:

(a) will be maintained and/or enhanced as far as practicable in all those water bodies, or parts of them, identified as having high quality or high value for their natural character and in-stream values; however

(b) may be reduced in other water bodies to provide for the needs of water users provided that any reductions in water levels and flows are minimised, that as far as practicable, any adverse effects on natural character and in-stream values are avoided, remedied or mitigated and the life-supporting capacity is safeguarded.

WAL Policy 3

The in-stream values and life supporting capacity of water bodies will be maintained, and the natural character of rivers, streams, and lakes and their margins protected from inappropriate subdivision, use and development.

Matters to be considered in determining the quantities, levels or flow of water necessary to maintain instream values and life supporting capacity and to protect natural character will include:

(a) the natural character, ecological and amenity values associated with the water body and its margin, including indigenous biodiversity values, fishery values and the habitat of trout;

(b) the relationship of tangata whenua with the water body;

(c) the importance of the water body to and community water supplies, agricultural, industrial, hydroelectric power generation and other uses;

(d) the effects of proposed water levels and flows on water quality and the assimilative capacity of the waterbody;

(e) the hydrological characteristics of the catchment including flow variability, flow recession characteristics, the relationship to groundwater recharge, and the cumulative effects of land use and catchment development on stream hydrology;

(f) the significance of flows and groundwater recharge to the maintenance or enhancement of downstream flows;

(g) the ability to abstract from the lower reaches of catchments to safeguard instream values of upper reaches where this will not adversely affect the special value of estuaries;

(h) the significance of any historic heritage values associated with the water body; and

(i) the cumulative effects of existing takes;

(j) the extent to which any adverse effects of the taking, use, damming or diversion of water can be avoided, remedied or mitigated; and

(k) the regional and national benefits to be derived from the allocation of water resources.

Fresh water: Maintaining and enhancing the quality of water in our rivers, streams, lakes and wetlands

WQU Objective 1

To maintain and enhance surface water quality in Taranaki's rivers, streams, lakes and wetlands by avoiding, remedying or mitigating any adverse effects of point source and diffuse source discharges to water.

WQU Policy 1

Sustainable land management practices and techniques that avoid, remedy or mitigate adverse effects on surface water quality will be encouraged, including:

(a) the retention and restoration of effective riparian buffer zones…

(d) the development, recontouring and restoration of disturbed land to reduce diffuse source discharges of contaminants to water…

(f) other land management practices, including the discharge of contaminants to land and the diversion of stormwater runoff to land, which avoid or reduce contamination of surface water.

WQU Policy 2

The retirement and planting of riparian margins throughout the Taranaki region will be promoted, with a particular focus on ring plain catchments.

WQU Policy 3

The water quality of the Stony (Hangatahua) River catchment and other rivers, streams, lakes and wetlands with high natural character, ecological and amenity values such as the Maketawa Stream catchment and parts of the Manganui River catchment will be maintained and enhanced as far as practicable.

Freshwater: Protecting the natural character of wetlands

WET Objective 1

To protect the natural character of Taranaki's wetlands from inappropriate subdivision, use and development and that any adverse effects of activities on wetlands are avoided, remedied or mitigated.

WET Policy 1

The protection of wetlands in the Taranaki region from inappropriate subdivision, use and development will be promoted.

WET Policy 2

The enhancement and creation of wetland areas will be encouraged, where appropriate.

Freshwater: Managing effects associated with the use of development of river beds

RLB Objective 1

To enable appropriate use of and disturbance within river and lake beds in Taranaki while avoiding, mitigating or remedying any adverse effects of activities on the environment.

RLB Policy 1

The use of and disturbance to river and lake beds will be carried out in a manner that avoids, remedies or mitigates as far as practicable:

(a) adverse effects on the natural character, ecological and amenity values, including indigenous biodiversity values and fishery values;

(b) adverse effects on fish passage, fish spawning and aquatic habitats, including the habitat of trout;

(c) adverse effects on the relationship of tangata whenua with the water body;

(d) adverse effects on ecological values associated with river and lake beds through the spread of pest plants;

(e) adverse effects on water quality and in-stream habitat, including the passage of fish;

(f) erosion or accretion of river and lake beds or banks;

(g) the exposure or destabilisation of existing structures within the bed;

(h) the unintentional impoundment of water and adverse effects associated with flooding and erosion;

(i) reductions in the capacity of river channels to convey flood flows;

(j) adverse effects of flooding on adjacent properties or uses; and

(k) adverse effects on historic heritage.

Coastal environment: maintaining and enhancing coastal water quality

CWQ Objective 1

To maintain and enhance coastal water quality in the Taranaki region by avoiding, remedying or mitigating the adverse effects of discharges of contaminants to the coastal marine area.

CWQ Policy 3

Encourage sustainable land management practices that avoid, remedy or mitigate adverse effects on the water quality of rivers and streams discharging and impacting on coastal water quality.

Indigenous biodiversity: Maintaining and enhancing indigenous biodiversity

BIO Objective 1

To maintain and enhance the indigenous biodiversity of the Taranaki region, with a priority on ecosystems, habitats and areas that have significant indigenous biodiversity values.

BIO Policy 2

Adverse effects on indigenous biodiversity in the Taranaki region arising from the use and development of natural and physical resources will be avoided, remedied or mitigated as far as is practicable.

BIO Policy 3

Priority will be given to the protection, enhancement or restoration of terrestrial, freshwater and marine ecosystems, habitats and areas that have significant indigenous biodiversity values.

BIO Policy 4

When identifying ecosystems, habitats and areas with significant indigenous biodiversity values, matters to be considered will include:

(a) the presence of rare or distinctive indigenous flora and fauna species; or

(b) the representativeness of an area; or

(c) the ecological context of an area.

Once identified as significant, consideration should be given to the sustainability of the area to continue to be significant in future when deciding on what action (if any) should reasonably and practicably be taken to protect the values of the area.

BIO Policy 5

The maintenance, enhancement or restoration of indigenous biodiversity will be promoted in ecosystems, habitats and areas not covered by Policies 3 and 4 above, but still important for the continuing functioning of ecological processes, including those aspects important for the maintenance, enhancement or restoration of:

(a) connections within, or corridors between, habitats of indigenous flora and fauna;

(b) ecosystems, habitats and areas that provide buffering of habitats of indigenous flora and fauna;

(c) botanical, wildlife, fishery and amenity values;

(d) biological and genetic diversity;

(e) water quality, water levels and flows; and

(f) soils, substrate, minerals, nutrients or other physical factors or processes necessary for the survival of any indigenous flora or fauna species or community

BIO Policy 7

In the maintenance and enhancement of indigenous biodiversity in Taranaki consideration will be given to the social and economic benefits of appropriate use and development of resources.

BIO Policy 8

When re-establishment or restoration of indigenous vegetation and habitat is carried out, preference should be given to the use of local genetic stock.

Natural Features and landscapes, historic heritage and amenity value: Natural features and landscapes

NFL Objective 1

To protect the outstanding natural features and landscapes of the Taranaki region from inappropriate subdivision, use and development, and to appropriately manage other natural areas, features and landscapes of value to the region.

NFL Policy 2

Recognition shall be given to the appropriate management of other natural areas, features or landscapes not covered by Policy 1 above, but still of value to the region for one or more of the following reasons:

(a) the maintenance of water quality and quantity;

(b) soil conservation;

(c) the avoidance or mitigation of natural hazards;

(d) natural character amenity and heritage values and scientific and educational significance;

(e) geological and geomorphological, botanical, wildlife and fishery values;

(f) biodiversity and the functioning of ecosystems;

(g) ‘sinks’ or ‘pools’ for greenhouse gases; and

(h) cultural features of significance to tangata whenua.

NFL Policy 3

The protection of outstanding and where appropriate, other natural features and landscapes of value shall be achieved by having regard to the following criteria in determining appropriate subdivision, use and development:

(a) the value, importance or significance of the natural feature or landscape at the local, regional or national level;

(b) the degree and significance of actual or potential adverse effects on outstanding natural features and landscapes or other important natural features and landscapes, including cumulative effects, and the efficacy of measures to avoid, remedy or mitigate such effects;

(c) the benefits to be derived from the use and development at the local, regional and national level;

(d) the extent to which the subdivision, use or development recognises or provides for the relationship of tangata whenua and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga;

(e) the need for use or development to occur in the particular location;

(f) the sensitivity or vulnerability of a natural feature or landscape to change, and its capacity to accommodate change, without compromising the values of the feature or landscape;

(g) the degree of existing modification of the natural feature or landscape from its natural character;

(h) the degree to which financial contributions associated with any subdivision, use and development can be used to offset actual or potential adverse effects arising from those activities.

The built environment: Providing for regionally significant infrastructure

INF Objective 1

To provide for the continued safe and efficient operation of the region's network utilities and other infrastructure of regional significance (including where this is of national importance), while avoiding, remedying or mitigating adverse effects on the environment.

INF Policy 1

Provision will be made for the efficient and effective establishment, operation, maintenance and upgrading of network utilities and other physical infrastructure of regional significance (including where this is of national importance) and provision for any adverse effects of their establishment to be avoided, remedied or mitigated as far as is practicable

Regional Fresh Water Plan for Taranaki 2001

Issue 3.1: Protection and enhancement of the natural, ecological and amenity values of fresh water

Objective 3.1.5

To maintain and enhance amenity values and the quality of the environment of Taranaki's rivers, lakes and wetlands and their margins.

Objective 3.1.6

To manage the fresh water resources of the Taranaki region in a way that promotes the sustainable management of natural and physical resources, by recognising and providing for the differences in and between rivers, streams, lakes and wetlands in the region.

Policy 3.1.2

The adverse effects of activities on the natural character, ecological and amenity values of all rivers, lakes and wetlands and their margins in the Taranaki region will be avoided, remedied or mitigated, having regard to:

(a) the topography and form of the river, lake or wetland;

(b) the natural flow characteristics, hydrological functions and natural water levels and their fluctuations in rivers, lakes and wetlands;

(c) ecosystems, habitats and species;

(d) existing water quality and the need to maintain or enhance that quality;

(e) recreational fishery, aesthetic and scenic values.

Policy 3.1.3

The life-supporting capacity of fresh water will be safeguarded and the adverse effects of activities on aquatic habitats and fresh water ecosystems will be avoided, remedied or mitigated having regard to:

(a) the maintenance of biological and physical processes;

(b) the existing and potential productivity, diversity, importance and variability of aquatic ecosystems;

(c) habitat characteristics, including habitats for aquatic species at different stages of their life cycle, habitats of threatened, vulnerable or rare species, and habitats for terrestrial life that use the water body;

(d) the significance of indigenous flora and fauna, including the habitat of indigenous fish;

(e) the habitat of trout.

Policy 3.1.4

The high natural, ecological and amenity values of those rivers and streams listed in Appendix IA will be maintained and enhanced as far as practicable. Adverse effects of activities on these values will be avoided as far as practicable, or remedied or mitigated.

Issue 5.1: Enabling appropriate use and development of fresh water

Objective 5.1.1

To enable people and communities to use and develop fresh water resources and the beds of rivers and lakes to provide for their social, economic and cultural wellbeing and for their health and safety, in accordance with the sustainable management of those resources

Policy 5.1.1

When managing the use and development of fresh water and the beds of rivers and lakes, the Taranaki Regional Council will recognise:

(a) the need for all activities to avoid, remedy, or mitigate adverse environmental effects in accordance with the objectives and policies of this Plan;

(b) the positive benefits to people and communities arising from the use or development;

(c) existing uses of physical resources including any human-made resources that have a specific-use purpose;

(d) the effects on existing lawfully established activities;

(e) the need to allow existing users to progressively upgrade their environmental performance, where improvements are necessary to meet the provisions of this Plan.

Transitional policies – NPS on Freshwater Management

NPS 5.1: Water quality

Policy 5A.1.1

When considering any application for a discharge the consent authority must have regard to the following matters:

(a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water and

(b) the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.

Policy 5A.1.2

When considering any application for a discharge the consent authority must have regard to the following matters:

(a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and
(b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided.

Policy 5A.1.3

Policies 5A.1.1 and 5A.1.2 applies to the following discharges (including a diffuse discharge by any person or animal):

(a) a new discharge or

(b) a change or increase in any discharge –

of any contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

Transitional policies – NPS on Freshwater Management

NPS 5.2: Water Quantity

Policy 5A.2.1

When considering any application the consent authority must have regard to the following matters:

(a) the extent to which the change would adversely affect safeguarding the life supporting capacity of fresh water and of any associated ecosystem and the extent to which it is feasible and dependable that any adverse effect on the life supporting capacity of fresh water and of any associated ecosystem resulting from the change would be avoided.

Policy 5A.2.2

Policy 5A.2.1 applies to:

(a) any new activity and

(b) any change in the character, intensity or scale of any established activity that involves any taking, using, damming or diverting of fresh water or draining of any wetland which is likely to result in any more than minor adverse change in the natural variability of flows or level of any fresh water, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).

Issue 6.1: The adverse effects of the taking, use, damming and diversion of surface water

Objective 6.1.1

To promote the sustainable management of the surface waters of Taranaki while avoiding, remedying or mitigating any actual or potential adverse effects from the taking, use, damming or diversion of surface water.

Policy 6.1.3

Notwithstanding Policy 6.1.4, when assessing the quantity of water that may be taken, used, dammed or diverted from any surface water body, the Taranaki Regional Council will have particular regard to:

(a) the natural, ecological and amenity values of the water body;

(b) the relationship of Tangata Whenua with the water body;

(c) the importance of the water body to meet existing or reasonably foreseeable needs for community water supplies, agricultural, industrial or other use;

(d) the effects of water levels and flows on water quality;

(e) the hydrological characteristics of the catchment including flow variability, flow recession characteristics and the relationship to groundwater recharge;

(f) the significance of flows and groundwater recharge for the maintenance or enhancement of downstream flows;

(g) the extent to which the adverse effects of the taking, use, damming or diversion of water can be avoided, remedied or mitigated.

Policy 6.1.4

Subject to Policy 6.1.3, when assessing resource consents and imposing conditions for the taking, use, damming or diversion of surface water the Taranaki Regional Council will require quantities, levels and flows of water in rivers and streams (excluding those in Policies 6.1.1 and 6.1.2), that retain at least 2/3 habitat at mean annual low flow.

Policy 6.1.5

When assessing resource consent applications for the taking, use, damming or diversion of water, the Taranaki Regional Council will consider:

(a) the need to ensure that surface water is available for reasonable domestic needs, stock drinking water requirements, and fire fighting purposes;

(b) where there are competing uses for water, or in catchments identified in Policy 6.1.2, the degree of community or regional benefit from the taking, use, damming or diversion as distinct from private or individual benefit;

(c) the need for the volumes of water sought;

(d) the need to use water efficiently and with a minimum of waste;

(e) what alternative sources of water or water collection or storage methods have been considered;

(f) possible mitigation measures including the maintenance of adequate minimum flows or flow regimes, the reduction or suspension of takes, the location, timing, duration and rate of the abstraction, the maintenance of fish passage, the application of riparian planting, use of gradient control for diversions, or other measures;

(g) the need to install systems to accurately measure the volumes of water abstracted and to reduce or suspend abstractions.

Issue 6.2: Adverse effects on surface water quality from the discharge of contaminants from point sources

Objective 6.2.1

To maintain and enhance the quality of the surface water resources of Taranaki by avoiding, remedying or mitigating the adverse effects of contaminants discharged to land and water from point-sources.

Policy 6.2.1

In managing point-source discharges to land and water, the Taranaki Regional Council will recognise and provide for the different values and uses of surface water including:

(a) natural, ecological and amenity values;

(b) the relationship of Tangata Whenua with water;

(c) the maintenance and enhancement of aquatic ecosystems, and water quality for fisheries and fish spawning;

(d) use of water for water supply purposes;

(e) use of water for contact recreation.

Policy 6.2.2

Discharges of contaminants or water to land or water from point sources should:

(a) be carried out in a way that avoids, remedies or mitigates significant adverse effects on aquatic ecosystems;

(b) maintain or enhance, after reasonable mixing, water quality of a standard that allows existing community use of that water for contact recreation, and water supply purposes, and maintains or enhances aquatic ecosystems;

(c) be of a quality that ensures that the size or location of the zone required for reasonable mixing does not have a significant adverse effect on community use of fresh water or the life supporting capacity of water and aquatic ecosystems.

Policy 6.2.4

The Taranaki Regional Council may, where appropriate, require the adoption of the best practicable option to prevent or minimise adverse effects on the environment from the discharge of contaminants to land or water. When considering what is the best practicable option, the Taranaki Regional Council will give consideration to the following factors, in addition to those contained in the definition in the Act of best practicable option:

(a) the capital, operating and maintenance costs of relative technical options, the effectiveness and reliability of each option in reducing the discharge, and the relative benefits to the environment offered by each option;

(b) the weighing of costs in proportion to any benefits to the receiving environment to be gained by adopting the method or methods;

(c) maintaining and enhancing the existing water quality in the area as far as practicable.

Issue 6.3 Adverse effects on surface water quality from diffuse source discharges

Objective 6.3.1

To maintain and enhance the quality of the surface water resources of Taranaki by avoiding, remedying or mitigating the adverse effects of contaminants discharged to water from diffuse sources.

Objective 6.3.3

The Taranaki Regional Council will promote the restoration of riparian margins where riparian vegetation will provide net water quality benefits.

Issue 6.6: Adverse effects on the environment from uses of river and lake beds

Objective 6.6.1

To promote the sustainable management of the beds of rivers and lakes by avoiding, remedying or mitigating any adverse effects of the use of the beds of rivers or lakes.

Objective 6.6.2

To avoid, remedy or mitigate the adverse effects of flooding and erosion on land uses in floodplains.

Policy 6.6.1

The placement or maintenance of structures within river and lake beds will be managed so as to avoid, remedy or mitigate:

(a) adverse effects on the habitat of aquatic and terrestrial flora and fauna, including the passage of fish;

(b) erosion or accretion of river and lake beds or banks;

(c) the exposure or destabilisation of existing structures within the bed;

(d) the effects of flooding and erosion;

(e) adverse effects on water quality and aquatic life.

Policy 6.6.2

Structures in or on river and lake beds will be required to provide for the unrestricted passage of fish, or will be required to contain suitable facilities to enable fish passage through or past the structure.

Policy 6.6.3

The Taranaki Regional Council will require that structures in river and lake beds be designed, placed and maintained to avoid reducing the capacity of river channels to convey flood flows, the unintentional impoundment of water and adverse effects of flooding on adjacent properties and other structures within river beds.

Policy 6.6.8

The Taranaki Regional Council will advocate and promote the avoidance and mitigation of the adverse effects of flooding on land use in floodplains, as a natural hazard of regional significance.

Policy 6.6.9

When assessing resource consent applications for uses of river and lake beds, the Taranaki Regional Council will consider:

(a) the natural, ecological and amenity values of the water bodies;

(b) the relationship of Tangata Whenua with the water body;

(c) adverse effects on water quality and aquatic life and instream habitat;

(d) possible mitigation measures including appropriate timing of works, provision of fish passage and provision of alternative access.

Regional Soil Plan for Taranaki 2001

Objective 1

To maintain and enhance the soil resource of the Taranaki region by avoiding, remedying or mitigating accelerated erosion.

Policy 1.1

The Taranaki Regional Council will encourage sustainable land management practices that control the adverse effects of soil and vegetation disturbance activities on erosion-prone land throughout the Taranaki region, with particular focus on:

(a) Accelerated erosion of soil on hill country land…

New Plymouth Operative District Plan 2005

Issue 14: Adverse effects of subdivision, use and development on the natural character of the coastal environment, wetlands, lakes and RIVERS and their margins

Objective 14

To preserve and enhance the natural character of the coastal environment, wetlands, and lakes and RIVERS and their margins.

Policy 14.2

The natural character of wetlands and RIVERS and lakes and their margins should not be adversely affected by inappropriate subdivision, use or development and should, where practicable, be restored and rehabilitated.

Issue 16: Degradation and loss of INDIGENOUS VEGETATION and habitats of indigenous fauna

Object 16

To sustainably manage, and enhance where practical, INDIGENOUS VEGETATION and habitats.

Policy 16.2

Land use, development and subdivision should not result in adverse effects on, and should enhance where practical, the quality and intrinsic values of areas of INDIGENOUS VEGETATION and habitats.

Issue 20: Adverse effects of activities on the safe and efficient operation of the district's ROAD TRANSPORTATION NETWORK

Objective 20

To ensure that the ROAD TRANSPORTATION NETWORK will be able to operate safely and efficiently.

Appendix 21.1 Criteria for determining SIGNIFICANT NATURAL AREAS

In determining whether a natural area is a SIGNIFICANT NATURAL AREA, the COUNCIL will consider the following criteria:

1. Occurrence of an endemic species that is:
   - Endangered;
   - Vulnerable;
   - Rare;
   - Regionally threatened; or
   - Of limited abundance throughout the country.
2. Areas of important habitat for:
   - Nationally vulnerable or rare species; or
   - An internationally uncommon species (breeding and/or migratory).
3. Ecosystems or examples of an original habitat type, sequence or mosaic which are:
   - Nationally rare or uncommon;
   - Rare within the ecological region;
   - Uncommon elsewhere in that ecological district or region but contain all or almost all species typical of that habitat type (for that region or district); or
   - Not well represented in protected areas.
4. An area where any particular species is exceptional in terms of abundance or habitat.
5. Buffering and connectivity is provided to, or by the area.
6. Extent of management input required to ensure sustainability.

*Definition of SIGNIFICANT NATURAL AREA:

SIGNIFICANT NATURAL AREA means an area of INDIGENOUS VEGETATION or a habitat of indigenous fauna that meets the criteria in Schedule 21.1 and is identified in Schedule 21.2 or Table 21.3 of Appendix 21. Except that, no vegetation that has regenerated since this plan was notified shall be regarded as a SIGNIFICANT NATURAL AREA.