Letter from Fire and Emergency New Zealand

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Horowhenua District Council
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26 October 2021

Attention: Lauren Baddock

Dear Lauren

Fire and Emergency New Zealand - Horowhenua District Plan Change 4 – Hearing Letter

Fire and Emergency New Zealand (Fire and Emergency) has opted not to attend the hearing on 18 November 2021 for Proposed Plan Change 4: Tara-Ika Growth Area to the Horowhenua District Plan (Plan Change 4). We request that this letter be tabled for the Hearing Panel's consideration in lieu of Fire and Emergency NZ's attendance.

The Officer's report for Plan Change 4 has been received. The report has recommended accepting (and accepting in part) Fire and Emergency's submission points relating to minimum carriageway widths, natural hazards, and stormwater. Fire and Emergency strongly support these recommendations.

In regard to firefighting water supply, the provision of adequate water supply is critical, and it is important to Fire and Emergency that all new dwellings and land uses within the Tara-Ika growth area have access to adequate firefighting water supply of some kind. This essential emergency supply will provide for the health, safety and wellbeing of people and the wider community.

As noted in the Officer's report, and following further discussions with Lauren Baddock, we understand that the current District Plan requirements in relation to water supply for firefighting (Section 12 of the Subdivision and Development Principles and Requirements 2014, which is incorporated by reference in the Horowhenua District Plan), applies to all activities, including the Tara-Ika development and any future subdivisions. Section 12.4 (Design Principles) requires all pipe sizes in water supply systems to be:

> *"based on design flows required to meet firefighting and supply requirements".*

In addition, it is noted that:

> *"where reticulated water supplies are unavailable or insufficient, an alternative firefighting water supply shall be provided in accordance with SNZ PAS 4509:2008 New Zealand Fire Service Firefighting Water Supplies Code of Practice".*

Based on the above, Fire and Emergency is satisfied that the provisions within Section 12 of the Subdivision and Development Principles and Requirements 2014 will ensure sufficient firefighting water supply is provided for all new land uses and dwellings within the Tara-Ika Growth Area.

Fire and Emergency welcomes the opportunity to discuss these matters further, where appropriate. Please feel free to contact the undersigned.

Yours sincerely

Aimee Brown

Planner

on behalf of

Beca Limited

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Letter from Horizons Regional Council

1 November 2021

RAI 04 01
PAT:PJ

Lauren Baddock
District Plan Lead | Kaihautū Mahere ā-Rohe
Horowhenua District Council
Private Bag 4002
LEVIN 5540

Dear Lauren

PROPOSED PLAN CHANGE 4 – TARA-IKA GROWTH AREA

Thank you for advising Horizons Regional Council (Horizons) of the release of the Section 42A (s42A) report for Proposed Plan Change 4 (PPC4) prior to the forthcoming hearing of submissions.

Having considered the report recommendations in relation to Horizons' submission on this proposed plan change, and consulted on these matters with Jon Bell (Horizons Manager Investigations and Design) and Mark Read (Horizons Transport Manager), it is our view that all but relatively minor matters have been addressed through pre-hearing discussions and your recommendations.

Horizons therefore does not wish to appear at the hearing. Instead, we ask that the following statement be forwarded to the Hearing Panel for their consideration.

Horizons' submission addressed a number of matters in relation to stormwater and transport in particular, and also some discrete matters including energy efficiency and indigenous biodiversity. As was the case in Horizons' submission, the majority of the following comments are from the perspective of whether the proposed changes to the district plan would give effect to the regional policy statement components of the One Plan and ensuring they would not be inconsistent with regional plan provisions.

All proposed district plan provisions referred to below use the amended numbering from the recommended changes version appended to the s42A report. Unless otherwise stated, we request that the Hearing Panel adopt s42A recommendations to accept Horizons' submission points.

<u>Stormwater</u>

Mr Bell and I have reviewed the recommended changes set out in paragraph 503 of the s42A report.

In relation to Policy 6A.3.1, I support the recommended addition of reference to the Koputaroa Stream and other downstream environments. I consider these amendments increase clarity with regard to providing for the overarching outcome of avoiding adverse effects from stormwater on these waterbodies.

We also note our support for new Policy 6A.3.2, and restricted discretionary Rule Condition 15A.8.1.1 which applies to all zones. Mr Bell informs me that he considers the recommended approach will be capable of achieving the overarching outcome Horizons supports; that is, avoiding any increase in stormwater discharge to Punahau (Lake Horowhenua) and Koputaroa Stream. In particular, he supports the specification in these provisions of the 1 in 100 year annual return interval rainfall event with allowance for climate change, which I note is consistent with One Plan Rule 14-18 ***Discharges of stormwater to surface water and land***.

I agree that proposed Rule Condition 15A.8.1.1 addresses Horizons' submission point in relation to stormwater management in the Commercial Zone (04/30.03). With regard to Horizons' submission points on rainwater tanks (04/30.04), looking at the full range of proposed and amended provisions for the management of stormwater across all zones and the framework that these create together, I am comfortable with the activity status remaining restricted discretionary.

Overall, I consider that the drafting of these provisions is clear and directive, and meet the concerns Horizons' raised in its submission and further submission (FS04/23) regarding the ability of the plan change as notified to provide for effective management of stormwater, in particular to avoid effects on Punahau (Lake Horowhenua) and the Koputaroa Stream. I urge the Hearing Panel to accept these recommended amendments.

Transport

Mr Read and I have reviewed the discussion in paragraphs 696-697, and note the acceptance of Horizons' submission seeking minor wording changes to Objective 6A.4, Policy 6A.4.2 and Rule 15A.8.2.2.

With regard to Rule 15A.2.2, the recommended amendment (combining two matters of discretion into new matter (vi)) does not reflect Horizons' requested amendment to provide for public and school bus services. This amendment would provide for the implementation of amended Policy 6A.1.5.

I am advised by Mr Read that it is essential for the future viability of public and bus transport services for Tara-Ika that there is early consideration of appropriate routes and supporting infrastructure, and that subsequent consenting decisions do not undermine their implementation. In particular, space for bus stops and turning areas cannot be readily found unless they are provided for prior to development occurring. I therefore request the following amendment to this provision (shown as highlight):

> The provision of access, any new roads, cycleways, provision of linkages to existing roads, and provision for bus stops and turning areas.

Energy efficiency

With regard to Objective 6A.4.2, Horizons' submission point 04/30.10 also sought an additional insertion, which appears to have been overlooked:

> To achieve an integrated, efficient and connected development…

I request that the Hearing Panel make this amendment also.

Indigenous biodiversity

I support the identification of known areas of indigenous biodiversity habitat as potential habitat of culturally significant specifies in the structure plan. Horizons' submission (04/30.11) was prompted by a concern that one of these areas had been identified but in an incorrect location; however, we understand from prehearing discussions that this was not the intention. I consider the recommended approach will give effect to One Plan Policy 6-1, and assist plan users in understanding when regional rules may apply.

Advice note

I acknowledge and support the recommendation to include an advice note above Issue 6.A.1, inserted in response to submission point 04/30.12. I note that Horizons' request was for a more generally worded advice note, particularly in relation to activities adjacent to water bodies (not only water bodies with Domestic Food Production value) and areas of indigenous biodiversity habitat. I ask the Panel to amend this advice note as follows:

> Please note that the Horizons Regional Council One Plan also regulates a number of activities associated with subdivision and land development, including but not limited to earthworks, vegetation clearance, and activities in and near water bodies and areas of indigenous biodiversity. Plan users are advised to refer to the One Plan for further information.

I thank the Hearing Panel for the opportunity to provide this additional written statement. Relevant Horizons specialist staff members would be happy to attend the hearing if the members of the Panel consider their appearance would be of assistance.

Yours sincerely

Penelope Tucker

Penelope Tucker
SENIOR POLICY PLANNER

Letter from Prouse Family

SJ and KM Prouse

1st November 2021

To the Hearings Commissioners, and Planning Officer

Tara- Ika Proposed Plan Change.

We wish to raise our concerns that the recently published section 42 report has at the 11th hour added a notation to the Structure Plan highlighting a potential habitat for culturally significant species affecting a 5-acre area on the Prouse family land on a site that is proposed/ zoned for residential development

The notation is a significant change and addition to the Structure Plan,added at the last stages of this process. This was not proposed at any earlier stages of the submission process in any submission, at either the original submission stage or in further submissions. Or in the section 32 report. No requests to add this treed space to the structure were made in any previous submissions

On what basis has this notation been added to the Structure Plan and what expert reports have been used?

In conjunction with the hearings, we are concerned that we do not have sufficient time to respond and we do not have time to provide expert reports We are also very concerned that it is now diverting our attention from preparing for the hearing and speaking to the submission points we have raised in our previous submissions.

We note that Muaupoko have recently identified this space in their Cultural Impact Assessment Report What expert reports have they used to support this? We also note that this site/ species was not mentioned in their submission .

Recently one or two ornate skinks have been found on our property, however only one in the treed space. The skink pictured in the newspaper recently, in conjunction with an article by Waka Kotahi, was actually found at the back of our shed area/ garden in association within our house site and not in the treed space at the middle of our property.

The notation which is proposed to add to the Structure Plan has the potential to have unreasonable and significant impacts for the family at the Resource Consent Application stage. It could leave us open to unreasonable and huge legal bills and places unreasonable constraints on our land. . It also has the potential to have huge impacts to the value of our land and our ability to do any subdividing.The proposed rule to vest park space with the Council at the subdivision stage could see the Horowhenua District Council acquire this land by stealth without compensation. for us.

It places great uncertainty over the land that the family has owned for 131 years since 1891.

We have been continuously submitting on this space since 1996 raising issues including the poor quality of the exotic trees, and the large number of fallen tree

The family objects to this inclusion on the Structure Plan.

As land owners we have been closely involved in the development of the Tara- Ika Master Plan participating in numerous workshops with the design team throughout 2018 and 2019. We have

submitted at both stages of the submission process and attended all recent pre hearing meetings. The inclusion of this notation at this stage of the process without having provided us with the opportunity to input is not fair and over rides the processes of natural justice It has come from left field for us for this to be added at this late stage. There was no indication in the Section 32 Report that an approach would be taken to identify further land areas that may have cultural or ecological significance other than those listed including Waiopehu Reserve which is vested under the Reserves Act as a Scenic Reserve, Maunu Wahine Refuge and Waihau Water Hole.

The family would like to have the opportunity to further speak to this at the hearings

We are also very disappointed to see that although a notation has now been added to the Structure plan re this potential habitat that it still seems acceptable for Horowhenua District Council to have a significant connector going through this site and location Surely then the connector road would also need to be removed.

The family are asking for the notation to be removed from the Structure Plan.

We would like to further speak to this at the hearings

Karen and Stephen Prouse

Submitter 04/27 McDonnell Evidence - Planning

BEFORE THE HOROWHENUA DISTRICT COUNCIL

IN THE MATTER	of a proposed plan change under Schedule 1 to the Resource Management Act 1991
AND	
IN THE MATTER	of submissions by **JAMES MCDONNELL LIMITED**

STATEMENT OF EVIDENCE OF KARL COOK ON BEHALF OF JAMES MCDONNELL LIMITED

Planning

2 NOVEMBER 2021

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INTRODUCTION

1. My name is Karl Cook.

2. I hold the Degrees of Master of Planning and Bachelor of Planning from the University of Auckland and have been a full member of the New Zealand Planning Institute (**NZP**I) since 1995. I am also a member of the interview panel for new applications for full membership to NZPI.

3. During my career I have worked for Auckland City Council and North Shore City Council before joining multi-disciplinary consultancy Connell Wagner in 1994, which included a one-year period in the firm's Melbourne office. I joined Barker & Associates in 2001, and became a director in 2002.

4. I have significant experience in planning for land development, commercial, residential, infrastructure, transport and public facilities. This has involved the preparation and lodgement of plan changes, resource consent applications, and notices of requirement. My work has also involved preparing outline plans of work, and assessments/advice on strategic planning, policy and development.

5. As part of the wide and varied range of plan changes that my firm has been involved with, my key relevant experience includes:

(a) a structure plan and plan change process (currently underway) for a new growth area in Riverhead, north of Auckland;

(b) a private plan change for the University of Auckland's Tamaki campus;

(c) comprehensive changes to plan provisions (Auckland Unitary Plan) for University of Auckland's Epsom, Newmarket, and Grafton campuses;

(d) comprehensive changes to plan provisions (Auckland Unitary Plan) and Environment Court appeal for Todd Property's Okura land holdings; and

(e) plan changes for the Wynyard Quarter and Victoria Quarter areas within Auckland's city centre.

6. I confirm that the issues addressed in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

7. I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

8. I also note that I am bound by the professional ethics of NZPI and am required to be impartial and unbiased in my professional opinions expressed.

SCOPE OF EVIDENCE

9. I have been asked to prepare evidence for this hearing on behalf of James McDonnell Limited (**JML**).[1]

10. My evidence will address the following:

(a) the approach to provision of open space land in Tara-Ika;

(b) the approach to identifying roading and open space in Structure Plan 013 (**Structure Plan**) and associated non-complying activity status (**NCA**) for any inconsistency;

(c) provisions relating to stormwater;

(d) the restricted discretionary activity (**RDA**) status and matters of discretion applying to residential subdivision, including a requirement to provide a siting plan for subdivisions with the Medium Density Housing overlay;

(e) the activity status of providing vehicle access across strategic cycleways;

1 Brendan McDonnell primary submission 27, Roger Truebridge primary submission 33 (referenced by the former) and Roger Truebridge further submission 22 (made in conjunction with Brendan McDonnell).

(f) terminology used in the Structure Plan 013 relative to the Planning Maps and Chapter 15A;

(g) references to the Development Contributions Policy and use of private developer agreements in the methods for issues and objectives in Chapter 6A;

(h) changes proposed by Horowhenua District Council (**HDC**) in the Section 42A report, including:

(i) provision for non-notification of restricted discretionary activities;

(ii) the zoning of land within the O2NL corridor and overlay; and

(iii) the extent of provision for “Low Density” and “Medium Density” land in the Structure Plan.

11. My evidence addresses the foregoing matters on a topic basis, with reference where applicable to recommended changes in the marked-up version of the plan change provisions in **Appendix A**.

12. In preparing my evidence I have reviewed:

(a) Proposed Plan Change 4: Tara-Ika Growth Area, including the Section 32 Report;

(b) the Horowhenua District Operative District Plan 2015;

(c) Submission 27 – Brendan McDonnell, on behalf of JML;

(d) Further Submission 22: Roger Truebridge (which was done in conjunction with Brendan McDonnell, on behalf of JML);

(e) the pre-hearing meeting reports on the HDC PC4 website;[2]

2 Including "Proposed Plan Change 4: Tara-Ika Growth Area - Structure Plan, Zoning and Stormwater"; "Proposed Plan Change 4: Tara-Ika Growth Area - Otaki to North of Levin" and "Proposed Plan Change 4: Tara-Ika Growth Area - Summary of Discussions (Density and Zoning, Stormwater and Servicing, and Transport and O2NL".

(f) the Section 42A report prepared by Lauren Baddock; and

(g) the evidence of Mr Darcy Brittliff, on behalf of JML.

EXECUTIVE SUMMARY

13. I confirm my overall support for PC4 as containing a robust set of district plan provisions for the future development of Tara-Ika, as addressed in the Section 32 Report. PC4 is needed to meet predicted population growth and has been prepared following a thorough structure planning process (referred to as a master plan) carried out by HDC.

14. In relation to the key themes addressed in my evidence:

(a) I consider that the zoning of Open Space land in Tara-Ika should be removed from the Planning Maps, with reserve land being zoned following subdivision consent and vesting.

(b) In my view, RDA status with appropriate matters of discretion is the best approach to subdivision and development that is not consistent with the Structure Plan, and for vehicle access across strategic cycleways (rather than non-complying).

(c) I support the status of and proposed refinement to the RDA matters of discretion for subdivision in the Section 42A Report, and propose further minor but important changes to the matters of discretion and conditions to ensure an appropriate framework for future development of Tara-Ika.

(d) I support the approach in the Section 42A Report for the stormwater provisions and propose further minor but important changes to ensure the rules are efficient and effective in achieving the objective.

STATUTORY FRAMEWORK

15. In preparing this evidence I have had regard to the statutory framework in the Resource Management Act 1991 (**RMA**) for PC4, as outlined in section 4 of the

Section 42A Report. In providing reasons for the changes I propose to PC4 provisions, I have considered section 32AA of the RMA.

PROVISION OF OPEN SPACE

16. In my view, the land identified in the Structure Plan for open space should not be zoned Open Space in Planning Maps 7 and 30-33. The principal issue is that, until subdivision is completed, which follows a process of detailed urban planning and engineering design, including the layout of roads, stormwater and other infrastructure, the location and layout of reserves cannot be known.

17. The engineering-related matters in the subdivision process that are described by Mr. Brittliff include a need to design for earthworks, taking into account topography, and managing stormwater across very large areas. As set out in Mr. Brittliff's evidence, the detailed design work to identify the location of stormwater infrastructure and roads will require a change to the location of several, if not all, of the local roads and open spaces as identified in the Structure Plan.

18. Consequential problems arising from the zoning of Open Space land in the Planning Maps based on the Structure Plan are that development on any residential lots with an Open Space zoning would face resource consent challenges and associated uncertainty until a plan change was adopted to correct the zoning.

19. For these reasons, I consider that zoning of Open Space land as part of PC4 is inappropriate and inefficient. Rather, all land within Tara-Ika should be zoned Residential, Greenbelt Residential or Commercial.

20. Instead, the location, size and shape of open space should be addressed as a part of the subdivision process under the Tara-Ika Precinct provisions, in an integrated way, taking into account a range of urban planning and engineering design matters.

21. The provision of open space is already required in Rule 15A.8.2.2(a)(iv), under the matters of discretion for subdivision in Residential Zones.[3] Appropriate matters of discretion are included to ensure that open space areas of appropriate

3 With equivalent provision in 15A.8.5.1 for Greenbelt Residential.

location, size and shape are provided in general accordance with the Structure Plan. Conditions can be imposed on subdivision consents under Rule 15A.8.2.2(b)(ii) requiring such parks or reserves to be vested in HDC.

22. When the location, size and shape of parks and reserves is confirmed following the subdivision and vesting process, a plan change can be promulgated to apply an Open Space zoning appropriately. In the meantime, the open space land is protected by the subdivision consent process under the RMA and subsequent vesting of the land in HDC. This same approach is taken to zoning of land in other plan changes for "greenfield" land that I am familiar with, including throughout growth areas in Auckland.

23. A consequential change I propose to Chapter 15A is the deletion of section 15A.8.4, relating to subdivision in the Open Space zone. The primary issue is that because reserves are created as a result of subdivision for residential or commercial development, there is no need for a subdivision consent regime for Open Space zone land itself. The change that I propose will further obviate the need for any subdivision of Open Space zoned land.

24. The approach I have recommend will be the most appropriate way to achieve the objectives of achieving an integrated development and efficient delivery of infrastructure while being consistent with the Structure Plan. Zoning land Open Space as part of PC4 is not efficient or effective because it is certain that consequential plan changes will be required in any event to ensure the zone is correctly applied to the land that is vested as reserve.

ROADS AND OPEN SPACE IN THE STRUCTURE PLAN

25. Similar to the issue with zoning land Open Space in PC4, I consider it inappropriate and inefficient to apply non-complying activity (**NCA**) status to subdivision and development that is inconsistent with the Structure Plan. Based on Mr. Brittliff's evidence, it is almost certain that the final position and layout of roads and Open Space Zone will differ to some extent from that shown in the Structure Plan: in other words, to be inconsistent with it. It is not uncommon, in my experience, for the final location and layout of roads, other infrastructure and reserves to not be known prior to subdivision of large greenfield development, despite planning for that development to a structure plan level of design.

26. However, it is problematic from a planning perspective for inconsistency with a structure plan, on which future development of an area is based, to have NCA status. It places a greater consenting risk and associated uncertainty for a subdivision consent process than RDA status. Further, NCA status provides a signal from a planning policy perspective that an activity is not contemplated or is potentially inappropriate, when for the reasons set out in Mr. Brittliff's evidence, an inconsistency almost certainly will arise when detailed design work for future subdivision and development is carried out.

27. Furthermore, NCA status is unnecessary in my view because the RDA status under the RMA provides discretion for HDC to ensure appropriate outcomes. I have proposed matters of discretion that refer back to the relevant objectives and policies in Chapter 6A. For these reasons, my view is that RDA status should apply with the new rule 15A.3.1(f)[4] and matters of discretion in 15A.8.1.3 as recommended in **Appendix A**. Related to this issue, I propose a change to Policy 6A.6.1 and Policy 6A.6.2 to reflect that provision of parks and reserves will be "guided by" the Structure Plan rather than needing to "comply with" it: in essence because it is known that compliance cannot be achieved.

ACTIVITY STATUS AND MATTERS OF DISCRETION FOR RESIDENTIAL SUBDIVISION

28. In my view RDA status for subdivision in Tara-Ika is appropriate, given the objectives and policies in Chapter 6A and that the matters of discretion in Chapter 15A include matters that could be relied on by HDC to refuse consent to an inappropriate proposal. For example, a subdivision that did not include appropriately located open space land of a practical size and shape in general accordance with the Structure Plan. For that reason, and provided that matters of discretion are refined to relate to RMA matters and the Tara-Ika objectives and policies, I support the RDA status of subdivision.

29. I also support the changes proposed in the Section 42A report to the matters of discretion in 15A.8.2.2.2 for the Residential Zone. This includes deletion of clauses that overlap with other matters or where the intention is unclear.

4 And consequential deletion of that activity from 15A.5.1.

30. However, with reference to further comments I have included in the marked-up version of the PC4 provisions in **Appendix A**, I propose further refinements to the matters of discretion in 15A.8.2.2:

(a) remove the matter of consistency with the Structure Plan, because that is a trigger for consent in and of itself (with RDA status in my version);

(b) qualify the reference to the Medium Density Residential Development Design Guide, because that document mainly deals with the design of buildings and has limited relevance to subdivision; and

(c) qualify the reference to open space and recreation land being in general accordance with the Structure Plan, because it is known that achieving strict accordance will not be possible.

31. I also propose the change in (a) above to the matters of discretion in 15A.8.2.4, relating to Greenbelt Residential, and in 15A.8.3.4, relating to Commercial, for consistency. These changes would best ensure the matters of discretion for subdivision are the most appropriate in achieving the objectives and policies in Chapter 6A.

CONDITIONS FOR SUBDIVISION

32. Further changes that I propose in **Appendix A** relate to the conditions for subdivision.

33. The first issue, in Residential Zones subdivision Rule 15A.8.2.2(b)(i), relates to the requirement for a siting plan to be provided with medium density subdivision showing the location, pedestrian entrances, and outdoor living areas for all future dwellings. While I have reservations about the siting plan method, my principal concern is with the requirement for the siting plan to be secured by consent notice.

34. I understand the rationale – to ensure that the essential aspects of the design of future development on which smaller lots are based is secured. However, in my experience, housing is often at an initial, master plan level of design development at subdivision stage. But once subjected to more detailed design, sometimes by a future landowner, an equally or even more appropriate dwelling

is designed for a lot. The issue is that a consent notice is inflexible and requires a separate approval from HDC, one that is additional to the usual resource consent process for housing and in my experience can be cumbersome to obtain. Accordingly, I propose that a mechanism is included in the consent notice enabling an alternative design where resource consent is granted. It would mean that HDC would have discretion over either the original or any subsequent design for smaller lots, without the developer needing an additional approval.

35. The second matter is in relation to the requirements for conditions on subdivision consents, relating to the Structure Plan in Residential Zones - Rule 15A.8.2.2(b)(ii), Commercial Zone Rule 15A.8.3.4(b)(ii) and Greenbelt Residential Zone Rule 15A.8.5.1(b)(ii). In the first bullet point in each of these rules, a condition is to be imposed requiring "an infrastructure asset as indicated by Structure Plan 013" to be constructed and vested in HDC.

36. However, the Structure Plan does not contain any references to infrastructure assets. The only assets shown are roads, so I propose a change involving references to "roading" instead of "infrastructure". As an alternative, if "roading" is not the infrastructure asset that the rules are intended to address, then in the absence of any other infrastructure in the Structure Plan, the whole of the first bullet point could be deleted.

37. The second issue with both bullet points in these rules is the reference to "infrastructure asset (roading) and park (reserve) indicated or shown in Structure Plan 013." My concern is that the condition under both bullet points refers to the roading or reserve as shown in the Structure Plan, when instead it should relate to the roading or reserve (respectively) in the subdivision consent. It is in the subdivision application process that the Structure Plan is relevant, as addressed by the matters of discretion for subdivision. But by the time conditions are to be imposed, it is the roading or reserve in the subdivision consent that is relevant rather than what is in the Structure Plan. Accordingly, I have proposed changes in **Appendix A** to Residential Zones Rule 15A.8.2.2(b)(ii), Commercial Zone Rule 15A.8.3.4(b)(ii) and Greenbelt Residential Zone Rule 15A.8.5.1(b)(ii).

VEHICLE ACCESS ACROSS STRATEGIC CYCLEWAYS

38. For similar reasons as to why NCA status is inappropriate for subdivision that is inconsistent with the Structure Plan, NCA status is also inappropriate in relation

to vehicle access across the strategic cycleways. In my experience, there can be problems from an urban design and connectivity perspective with effectively banning vehicle access for such significant lengths of roading. Challenges include the effect this may have in terms of discouraging dwellings from fronting roads with strategic cycleways, resultant use of fences and landscape screening, and subdivision layout involving rear lanes and cul-de-sacs.

39. While safety and efficiency of cycle movements along the strategic cycleways is important for achieving the objectives and policies in Chapter 6A (for example Policy 6A.1.5), so too is ensuring design enables, for example, passive surveillance (Policy 6A.1.3). In my experience, NCA status can be a significant deterrent to development requiring consent for a matter that might be appropriately addressed through a good design solution.

40. Instead, RDA status would provide discretion for HDC to ensure appropriate outcomes are achieved. Accordingly, I consider that RDA status should apply with matters of discretion as recommended in **Appendix A**.

PROVISIONS RELATING TO STORMWATER

41. Mr Brittliff's evidence addresses an aspect of the changes proposed in the Section 42A Report, in relation to stormwater management in the context of PC4. While supportive of the overall approach and the associated changes, he has identified that Policy 6A.3.2 and Rule 15A.8.1.1 as proposed in the Section 42A report do not address the matter of maintaining pre-development catchment flows to the receiving environment.

42. In summary, as part of the regime for managing stormwater in Tara-Ika, Objective 6A.3 is to minimise adverse effects from changes to the quality and quantity of natural flows on downstream ecosystems. In my view, this is consistent with the National Policy Statement for Freshwater Management 2020, specifically the objective and policy referenced on page 18 of the Section 42A report. However, in my view, it is not sufficiently clear that provision is made for downstream ecosystems in the proposed new Policy 6A.3.2, which is focused on retention and disposal of stormwater within Tara-Ika.

43. The inclusion of the additional wording into Policy 6A.3.2 and Rule 15A.8.1.1 as referenced in Mr Brittliff's evidence and in **Appendix A** to my evidence are

intended to make it clear that stormwater management will maintain pre-development flows and in doing so best achieve Objective 6A.3.

TERMINOLOGY IN THE STRUCTURE PLAN AND CHAPTER 15A

44. Of lesser significance than the matters above but important none-the-less is confusion that may arise from inconsistencies between some of the terminology used in the Structure Plan, terminology used in the Planning Maps and terminology used in provisions in Chapters 6A and 15A. In particular:

(a) in relation to the Planning Maps, under the heading "Zoning" there is a mixture of zones and overlays, which in relation to the overlays under that heading could cause confusion;

(b) the "Arapaepae Rd Special Effect Overlay" uses slightly different wording from the Arapaepae Road Special Treatment Overlay in Chapters 6A and 15A;

(c) the "Education Overlay" does not appear in the Planning Maps or in the Chapter 6A or 15A provisions, and therefore its purpose is unclear;

(d) the "Medium Density Residential" and "Low Density Residential" areas are not zones in the district plan but are worded slightly differently from the "Medium Density Area" and "Low Density Area" overlays in the Planning Maps, and in some instances, they are referred to in a different way in Chapter 15A; and

(e) arterial and collector roads are referred to as "connections" whereas that term is not used in the Chapter 15A provisions, and in some instances, they are referred to in a different way in Chapter 15A.

45. I recommend changes to the terminology in the Structure Plan and Chapter 15A to ensure it is consistent, with both the Planning Maps and with provisions in Chapters 6A and 15A.

REFERENCES TO THE DEVELOPMENT CONTRIBUTIONS POLICY AND USE OF PRIVATE DEVELOPER AGREEMENTS

46. Chapter 6A contains a section outlining Methods for Issues and Objectives in Tara-Ika. The third and fourth bullet points under the heading "Long Term Plan/Annual Plan" are very similar. I have proposed deleting the third bullet point, as the fourth refers to the Development Contributions Policy as the method to require developers to contribute to costs of infrastructure and facilities.

47. Under the heading "Other", the first bullet point refers to private developer agreements, which are a method in the Development Contributions Policy to facilitate infrastructure works. However, that context is not stated nor is the provision of other facilities referenced in the preceding section. Accordingly, I have proposed additional words in the first bullet point to provide that context to the method using private developer agreements.

CHANGES PROPOSED IN THE S42A REPORT

48. In relation to other points in the JML submissions, I concur with the following recommendations in the Section 42A report:

(a) Provision for Non-Notification – provision for non-notified consent for subdivision in the Residential Zones (15A.8.2.2(c)) in the same manner as that applying to Commercial and Open Space Zones as that will ensure consistency of approach across the Tara-Ika growth area;

(b) Zoning of Land in the Ō2NL Corridor – residential zoning of this land as I understand has been agreed with Waka Kotahi and confirmed in the pre-hearing meeting on 1 July 2021; and

(c) Extent of Low Density and Medium Density Land - amendments to the zoning of land as I understand has been agreed and recorded in pre-hearing meetings and included in the Section 42A report to ensure Tara-Ika achieves the objectives relating to efficient use of land and provision for housing yield.

CONCLUSION

49. Overall, PC4 provides a comprehensive suite of district plan provisions enabling the sustainable development of Tara-Ika. I support several changes that are proposed in the Section 42A report to improve the implementation of the plan change. I propose several further changes in **Appendix A** to address matters raised in submissions on behalf of JML that, while relatively minor in scope, are important in my view to ensure that the provisions in Chapter 6A and 15A are the most appropriate way to achieve the objectives in terms of their efficiency and effectiveness and having regard to benefits and costs.

Karl Cook
2 November 2021

Appendix A

PC4 provisions with tracked changes

6A OBJECTIVES/POLICIES: TARA-IKA MULTI-ZONE PRECINCT

Attachment A to evidence of Karl Cook.
Recommended changes shown as ~~strikethrough~~ and underlined and highlighted yellow.

6A. ~~TARAIKA~~TARA-IKA MULTI ZONE PRECINCT

The following objectives and policies are to be read in conjunction with the objectives and policies contained within Chapters 1-14 of the Horowhenua District Plan. In the event there is conflict between the objectives and policies in this chapter and those contained within the remainder of the District Plan, the objectives and policies contained within this chapter (Chapter 6A – ~~Taraika~~Tara-Ika) shall apply.

~~Taraika~~Tara-Ika is a large greenfield site located to the east of the existing urban area of Levin, with the Tararua Ranges forming an impressive backdrop to the area.

Muaūpoko have a very strong and enduring relationship with the Tara-Ika area, as it is an area where they have worked, cultivated, hunted and gathered resources for over 1000 years. Tara-Ika sits between areas of high cultural association to Muaūpoko, including Punahau (Lake Horowhenua) and the Tararua Ranges, and is therefore part of important physical, ecological, visual and spiritual pathways.

The ~~Taraika~~Tara-Ika Development Area (~~Taraika~~Tara-Ika) totals 470ha and has been master planned to provide a range of housing options and other supportive non-residential activities such as commercial and education activities. The area is expected to accommodate approximately 3,500~~2,500~~ residential dwellings and will be home to more than 5,000 people. Some of the surrounding environment has already been developed for rural lifestyle purposes.

The land has been identified as a growth area for the Horowhenua District since the Horowhenua Development Plan was prepared in 2008. The land was subsequently rezoned to Greenbelt Residential Deferred with an associated Structure Plan to guide development introduced to the District Plan. Since this time, growth projections for the District have changed significantly with the District's population now expected to grow rapidly. This prompted the decision to consider ~~Taraika~~Tara-Ika for a greater density of development than what could occur under a Greenbelt Residential Zoning.

~~Taraika~~Tara-Ika was considered suitable for additional residential capacity due to a range of factors including:

- The site is very flat and relatively unconstrained in term of risk from natural hazards;
- The site is close to the existing urban area of Levin;
- The site has already been identified as a growth area and has had a level of rural lifestyle development occur under the existing zoning. As such, additional development in this area does not result in a significant loss of rural production land.

As such, the area has been master planned and the land consequently rezoned to enable a variety of different residential and non-residential activities to establish.

~~Taraika~~Tara-Ika is made up of the following zones:

- Commercial Zone *(~~Taraika~~Tara-Ika Precinct)*
- Open Space Zone *(~~Taraika~~Tara-Ika Precinct)*
- Residential Zone *(~~Taraika~~Tara-Ika Precinct)*
- Greenbelt Zone *(~~Taraika~~Tara-Ika Precinct)*

Each zone has individual objectives, policies, and rules to ensure development achieves the desired objectives and principles for the area. There are also objectives and policies that apply to all zones within ~~Taraika~~Tara-Ika. In addition, the relevant objectives, policies and rules from the existing District Plan chapters and zones will apply. In the case where there are duplicate

6A OBJECTIVES/POLICIES: TARA-IKA MULTI-ZONE PRECINCT

provisions, the more specific provision (i.e. ~~Taraika~~Tara-Ika specific provisions) will apply in place of the more general provisions.

Please note that the Horizons Regional Council One Plan also regulates a number of activities associated with subdivision and land development, including but not limited to earthworks, vegetation clearance, and activities near streams with food production value. Plan users are advised to refer to the One Plan for further information.

ISSUE 6A.1 OVERALL PRINCIPLES FOR DEVELOPMENT IN ~~TARAIKA~~TARA-IKA

Through the Horowhenua Growth Strategy 2040, Council identified that the existing zoning and structure plan for the area previously known ~~just~~ as 'Gladstone Green' was unlikely to accommodate the level of growth anticipated in the District, or deliver the outcomes desired for the area. Furthermore, the resource consent process was considered unlikely to provide sufficient opportunity to deliver an integrated and co-ordinated development at the scale anticipated. As a result, the ~~Taraika~~Tara-Ika Master Plan was prepared in order to guide and enable residential and other development to ensure that this happens in an integrated and co-ordinated way. This master plan is the basis of the Structure Plan 013 and the following objectives and policies.

ISSUE DISCUSSION

~~Taraika~~Tara-Ika is anticipated to become high amenity residential development. However, there is also a risk development could adversely affect the environmental quality and cultural values of the area due to effects arising from increased built form, traffic, and demand for infrastructure and services and pressure on eco-systems.

State Highway 57 separates ~~Taraika~~Tara-Ika from the rest of the urban area of Levin. The preferred corridor for the Otaki to North of Levin highway is also located in ~~Taraika~~Tara-Ika (near to existing State Highway 57), creating a risk of severance between ~~Taraika~~Tara-Ika and the rest of Levin.

Due to the alignment of future and existing state highways, there is a risk that ~~Taraika~~Tara-Ika will develop in way that is disconnected from the urban area of Levin and associated services. Unless addressed, this will have a negative impact on the amenity of the resulting development and the well-being of residents.

As a large greenfield site, ~~Taraika~~Tara-Ika represents a 'blank' canvas. This presents an opportunity to establish a unique character. However, this also means there is no existing pattern of urban development to follow (for example, lot design and layout, street trees and provision for open space). Without an established urban pattern from adjoining areas to replicate, there is a risk that an incoherent urban form and disconnected structure will follow. This could result inadequate dwelling interaction with the street, adhoc section sizes that affects character and amenity, or establishment of a commercial area in an inappropriate location. It is also possible that future development will not sufficiently consider or prioritise the amenity or functionality of the public realm, resulting in poor quality urban form, inadequate or inappropriate use of street trees and a lack of quality, functional reserve space. The masterplan seeks to respond to these risks.

Master planned greenfield development at ~~Taraika~~Tara-Ika therefore presents an opportunity to achieve the following:

- a connected and integrated future-proof development that represents good urban design and provides a high level of residential amenity;

- encourages a variety in housing choice, including higher density options;
- a development that utilises low impact, sustainable servicing solutions and encourages walking and cycling;
- a development which provides facilities and open space to meet the needs of the community;
- a development that maintains and enhances cultural, heritage, and ecological values of the area.

To achieve the above, it is important that subdivision, development, and land use activities are coordinated to occur in locations and at densities that enable sustainable and efficient useof land and delivery of infrastructure and contribute to a high amenity environment.

It is also important that development at ~~Taraika~~Tara-Ika is resilient to the effects of climate change and natural hazards and minimises effects on the natural environment. Both of these considerations require careful stormwater design.

The following objectives and policies seek to respond to the above issue and opportunity.

Objectives & Policies

Objective 6A.1

To achieve an integrated and connected development that reflects cultural values and local identity, represents good urban design, is supported by a well connected roading network that supports a range of transport modes and has the facilities, social infrastructure, infrastructure, and amenities necessary to contribute to the health, safety, and wellbeing of residents. This includes:

- Encourage housing at a range of densities;
- Provision for a local-scale commercial centre;
- Access to quality public open space;
- Safe and efficient walking and cycling options;
- Well connected, safe and efficient roading network;
- Design that reflects Muaūpoko cultural values and local history and identity;
- Protection of culturally significant sites;
- Environmentally sensitive design;
- Encouraging subdivision and development design to enable energy efficiency and reduced energy consumption;
- Within the Arapaepae Road Special Treatment Overlay, development that is appropriate for the site in terms of scale, access, and compatibility with surrounding land uses.

Policy 6A.1.1

Subdivision, infrastructure and land development in ~~Taraika~~Tara-Ika must be consistent with Structure Plan 013. Subdivision and land development that deviates from the current or future implementation of the Structure Plan will only be considered where an alternative is proposed that will achieve the following:

- The same or similar level of connectivity within ~~Taraika~~Tara-Ika;
- The same or similar level of connectivity between the ~~Taraika~~Tara-Ika and the existing urban area of Levin;

6A OBJECTIVES/POLICIES: TARA-IKA MULTI-ZONE PRECINCT

- Protection of opportunities for land adjacent to ~~Taraika~~Tara-Ika to be connected to ~~Taraika~~Tara-Ika in the future;
- Public recreation space of an equivalent functionality as that shown on the Structure Plan and that is within walking distance of a similar number of properties as shown on the Structure Plan;
- A streetscape that maintains an appropriate expression of street hierarchy and consistency of treatment along any Arterial or Collector Road~~arterial or collector street~~;

Commented [B&A1]: Reason: Consistency with terminology on Structure Plan 013.
Reference: Karl Cook evidence paragraph 44(e).

Policy 6A.1.2

Subdivision, ~~and~~ land development and open space reserves in ~~Taraika~~Tara-Ika will acknowledge, protect, and celebrate ~~cultural values, cultural history~~Muaūpoko values and history and local identity in the following ways:

- Use of both ~~Māori~~ Muaūpoko ~~and non-Māori~~ names, among others, for streets and reserves;
- Protection of culturally significant sites;
- Prioritise use of locally sourced indigenous plants in street and reserve planting;
- Muaūpoko Accidental Discovery and Tikanga Protocol observed during site works.

Policy 6A.1.3

Require development to be designed in a manner that enables passive surveillance of public places (such as parks and roads) from private properties using techniques such as good site layout, restricting fence heights, and landscape treatments that will not obscure key sightlines.

Policy 6A.1.4

Provide for non-residential activities, such as community, recreational, educational and commercial activities, which support the day to day needs of the local community, while avoiding any such non-residential activities of a nature and scale that compete with the Levin Town Centre.

Policy 6A.1.5

Require subdivision layout to ensure street design enables the safe and efficient movement of people, ~~and~~ traffic and public transport, provides a high level of safety and amenity for pedestrians and cyclists, and contributes positively to the public realm.

Policy 6A.1.6

Encourage additional building height where this would contribute to a well-functioning urban environment (for example, increased housing variety), so long as reasonable privacy of neighbouring dwellings is maintained, culturally important views are maintained along Queen Street East and visual dominance and excessive shading beyond the subject site are avoided.

Policy 6A.1.7

Provide for a range of land uses within the Arapaepae Road Special Treatment Overlay to allow flexibility to deliver a context specific response that recognises both the unique attributes

of the site and the need to appropriately manage adverse effects, including safe and efficient access and avoiding or minimising reverse sensitivity effects.

Policy 6A.1.8

Require subdivision layout that will enable buildings to utilise energy efficiency and conservation measures.

Objective 6A.2

Efficient delivery of infrastructure within ~~Taraika~~Tara-Ika will enable development while protecting environmental and cultural values and achieving a high level of residential amenity.

Policy 6A2.1

Make provision within ~~the Taraika~~Tara-Ika for housing yield of ~~2,500-3,000~~at least 3,500 houses.

Policy 6A2.2

Require subdivision and development to be managed, designed and staged to align with the coordinated provision and upgrading of the infrastructure network (including roading network), public open space, streetscape and local service facilities within the ~~Taraika~~Tara-Ika, as illustrated on Structure Plan 013.

Policy 6A2.3

Avoid subdivision and development that compromises the ability to provide efficient and effective infrastructure networks for the wider ~~Taraika~~Tara-Ika.

Objective 6A.3

Stormwater management in ~~Taraika~~Tara-Ika will be resilient, culturally sensitive and environmentally sustainable, including:

- Resilient to natural hazards and the likely effects of climate change;
- Incorporating Water ~~s~~Sensitive ~~design~~Design;
- Minimise adverse effects from changes in the nature (including quality and quantity) of natural flows on downstream ecosystems;
- Avoiding natural areas and ecosystems that are sensitive to modifications to changes in groundwater and surface water levels and flows~~.~~

Policy 6A.3.1

Require an integrated approach to managing stormwater from ~~Taraika~~Tara-Ika to ensure the quality and quantity of runoff does not have an adverse effect on Punahau (Lake Horowhenua), the Koputaroa Stream, or other downstream environments.~~.~~

Policy 6A.3.2

Require stormwater to be retained and disposed of within the Tara-Ika Growth Area for up to a 1 in 100 year annual return interval rainfall event (with allowance for climate change, and allowance for catchment predevelopment flow continuity), and treated and managed utilising the best practicable option to mitigate the effects of stormwater by including the following:

Commented [B&A2]: Reason: To achieve Objective 6A.3 (third bullet point).
Reference: Karl Cook evidence paragraphs 41 to 43.

(i) limiting the extent of impervious areas;
(ii) incorporating on-site treatment and disposal of stormwater into subdivision and development design;
(iii) provision of catchment-wide facilities like wetlands and basins that are efficient and effective from both a construction and maintenance perspective and avoid culturally significant sites.
~~(iii)~~(iv) maintaining predevelopment flows to the natural downstream ecosystems.

Commented [B&A3]: Reason: To achieve Objective 6A.3 (third bullet point).
Reference: Karl Cook evidence paragraphs 41 to 43.

Policy 6A.3.~~3~~2

Recognise te mana o te wai and the ~~significance to~~Muaūpoko Kaitiakitanga ~~iwi of~~ to the ~~Taraika~~Tara-Ika environment and its connection to Punahau (Lake Horowhenua) by working with ~~iwi~~ Muaūpoko to protect the mauri of freshwater through ~~manage~~ managing stormwater quality and quantity.

Policy 6A.3.~~4~~3

Require rainwater collection tanks to be provided on all new residential allotments to capture and reuse runoff to mimic, as much as practicable, pre-developed hydrological conditions for the site and promote sustainable use of freshwater resources.

Explanation and Principal Reasons

Large scale greenfield development has the potential to lead to adverse environmental outcomes, particularly when the land is owned by multiple different parties. Without a strong framework to guide growth and development in this area, there is potential for individual subdivisions to progress in a fragmented and disconnected manner. Furthermore, there is a risk that no individual application will make provision for facilities such as open space, supportive commercial activities, or educational activities. Further, individual subdivision applications progressing in an adhoc manner are likely to result in inefficient delivery of infrastructure and limit opportunities for connectivity.

The Structure Plan for the ~~Taraika~~Tara-Ika is based on the ~~Taraika~~Tara-Ika Master Plan. It provides a comprehensive framework to manage growth and development in the ~~Taraika~~Tara-Ika, including infrastructure, roads and open space. Subdivision and development is required to be undertaken in accordance with the Structure Plan to ensure efficient use of the land and physical resources. It is important the principles of this Structure Plan are adhered to in order to achieve the development outcomes anticipated for this area.

Ensuring subdivision and development is aligned with the Structure Plan will help to deliver a quality living environment that is supported by necessary non-residential activities, amenities, and services.

It is also important to recognise cultural history and identity in this area. One way to achieve this is to ensure that streets and reserve names include Māori names chosen by Tangata Whenua.

ISSUE 6A.2 RESIDENTIAL ZONES (~~TARAIKA~~TARA-IKA PRECINCT)

The character of the Residential Zone of ~~Taraika~~Tara-Ika is likely to be different to the wider Levin area due to the era of development, housing density expected, integrated master planning approach to development, and the detail of the design principles identified for this area.

6A OBJECTIVES/POLICIES: TARA-IKA MULTI-ZONE PRECINCT

It is important ~~Taraika~~Tara-Ika complements and integrates with the existing residential areas of Levin while providing a different offering (for example, more housing variety).

ISSUE DISCUSSION

The ~~Taraika~~Tara-Ika residential area needs to develop in a manner that reflects good urban design and form to achieve a high amenity living environment that contributes to the wellbeing of its residents.

At present, there is limited variation in residential housing types available within the District. The predominant housing type available is 'family sized' standalone dwellings on relatively large residential sections, ranging from 400m^2-800m^2. However, this uniformity of housing type does not fully satisfy the diverse needs of the Horowhenua community. ~~Taraika~~Tara-Ika offers an opportunity to respond to this by encouraging more variety and improving housing affordability and small lots suitable for smaller dwellings. The following objectives and policies seek to respond to this.

Objectives & Policies

Objective 6A.4

Achieve a high amenity, connected, walkable residential environment with a range of section sizes and housing types, including affordable housing options, in ~~Taraika~~Tara-Ika.

Policy 6A.4.1

Optimise walkability and encourage choice and a variety of housing types, by providing for higher density residential development near to commercial and community facilities and lower density residential development at the outer edge of ~~Taraika~~Tara-Ika.

Policy 6A.4.2

Enable and encourage a range of housing types and section sizes in ~~Taraika~~Tara-Ika to meet the variety of needs and preferences in our community, while ensuring a high level of residential amenity and connectivity.

Policy 6A.4.3

Use both minimum and maximum density standards to encourage housing variety and to ensure development occurs at a scale and density consistent with the amenity expected for that particular area.

Explanation and Principal Reasons

Management of the residential environment generally focuses on providing for ongoing use and development in a way that maintains and enhances their character and amenity values. In the case of ~~Taraika~~Tara-Ika, the early stages of development will not have an established residential character or amenity to be informed by. Both the ~~Taraika~~Tara-Ika Master Plan and Structure Plan 013 outline some of the characteristics of urban form and design that will lead to the creation of a residential character and amenity that is considered appropriate within this particular context. The above objectives and policies, supported by District Plan rules, seek to achieve these outcomes to build and establish a high amenity residential character for

6A OBJECTIVES/POLICIES: TARA-IKA MULTI-ZONE PRECINCT

~~Taraika~~Tara-Ika.

ISSUE 6A.3 COMMERCIAL ZONE (~~TARAIKA~~TARA-IKA PRECINCT)

Given the anticipated population of ~~Taraika~~Tara-Ika and the proximity of ~~Taraika~~Tara-Ika to existing residential areas on the eastern side of Levin, the area will likely be supported by a commercial centre in the future. It is important that this is located in the appropriate location to maximise accessibility for the community served, support viability and consequently maximise the benefits this will offer the community. In addition, it is important that the nature and scale of this centre is controlled so as to ensure it offers a high amenity 'focal point' for the community, while not conflicting with the existing Levin town centre.

Issue Discussion

It is important that commercial development in ~~Taraika~~Tara-Ika agglomerates in a highly accessible, central location. If commercial activities and community services establish in an adhoc or sprawling manner, the vibrancy and vitality of the neighbourhood centre will be reduced, limiting the opportunity for it to act as a central point for the community.

The commercial centre will provide an important service to the community, through meeting the daily or weekly needs of the local catchment. This can reduce the need to travel across town and improves the overall experience of living within an area that, due to the distance from the commercial area of Levin and the presence of a State Highway (State Highway 57 in the short term and the Otaki to North of Levin highway in the longer term), would otherwise be underserviced by convenience facilities.

The design and layout of commercial development is important to ensuring a vibrant and attractive centre that the community will want to spend time in. Important considerations include the design of building frontages and the location of carparks. An attractive commercial centre that demonstrates good urban design can also support other types of land uses. This is because quality commercial development can act as an 'attractor' for land uses such as medium density development. This is considered an important relationship to acknowledge and enhance in order to encourage housing variety, as well as to achieve an attractive commercial centre.

In addition to the above, it is important that the ~~Taraika~~Tara-Ika commercial centre does not compete with the Levin town centre, particularly given the proximity of the ~~Taraika~~Tara-Ika commercial centre to both existing and proposed State Highways. Therefore, it is important that the nature and scale of this centre is controlled in order to protect the primacy of the Levin town centre.

Objectives & Policies

Objective 6A.5

Encourage development of a sustainable and attractive local commercial centre that accommodates a variety of compatible land use activities, while protecting the vitality of the Levin Town Centre.

6A OBJECTIVES/POLICIES: TARA-IKA MULTI-ZONE PRECINCT

Policy 6A.5.1

Provide for supermarket and/or convenience retail facilities at a scale suitable for the area.

Policy 6A.5.2

Provide for service based commercial activities that support the daily or weekly needs of the local community, so long as nature and scale does not compete with the Levin Town Centre.

Policy 6A.5.3

Ensure of the design, nature, and scale of commercial activities contributes positively to the image and overall amenity of the commercial area of ~~Taraika~~Tara-Ika.

Policy 6A.5.4

Ensure the development in the commercial zone contributes positively to the amenity of public places (including footpaths and roads) by:

(a) avoiding blank walls facing the roads;
(b) providing level access for pedestrians into shops;
(c) ensuring fascia boards and associated signage are of a consistent size and height;
(d) avoiding freestanding signs;
(e) maximising outlook onto streets and public places;
(f) providing weather protection for pedestrians along the road frontages;
(g) providing service access, car parking and staff parking away from the frontages;

Policy 6A.5.5

Avoid establishing commercial activities that are of a nature and scale that would detract from the vibrancy and vitality of the Levin Town Centre. Examples of such activities include but are not limited to entertainment activities, hotel/motel accommodation, large format retail and other activities of a type and scale that will compete with the Levin Town Centre.

Explanation and Principal Reasons

Given the anticipated population of ~~Taraika~~Tara-Ika, it is both likely and desirable for a range of small scale commercial activities to establish.

Commercial centres fulfil both a functional need for residents, thus reducing their need to travel into Levin or other surrounding areas to meet their daily and weekly convenience needs and provide a focal point for the community. This is important as it provides a place for people to meet and interact with both their neighbours and the wider community. This contributes to feelings of safety, social connectedness and wellbeing, which ultimately improves the overall quality and amenity of the surrounding residential environment. However, it is important that the commercial area of ~~Taraika~~Tara-Ika does not compete with the vibrancy and vitality of the Levin Town Centre.

In order to achieve these outcomes, the above objectives and policies (and supporting rules in Chapter 15A of the District Plan) seek to control the design of signs and buildings and the nature and scale of residential activities in ensure a high amenity environment that encourages walking, cycling through quality of experience. Controls on the scale and nature of commercial activities allowed to establish within ~~Taraika~~Tara-Ika will also avoid conflict with adjoining land uses and ensure that Levin's town centre remains the primary commercial centre in the

District.

ISSUE 6A.4 OPEN SPACE ZONE (~~TARAIKA~~TARA-IKA PRECINCT)

ISSUE DISCUSSION

Given the size of ~~Taraika~~Tara-Ika and the number of lots it will accommodate, the development will require open space provision. It is important that the reserve space is provided in the appropriate location and that it is of a functional size and shape.

Objectives & Policies

Objective 6A.6

To provide high quality public open space that is accessible and can be used for a variety of purposes, including stormwater management.

Policy 6A.6.1

Ensure public parks or reserves are distributed through ~~Taraika~~Tara-Ika to be easily accessible to all residential lots by requiring all subdivision and development to ~~comply with~~ be guided by Structure Plan 013.

Commented [B&A4]: Reason: Compliance with Structure Plan 013 cannot be achieved but is relevant as a guide.
Reference: Karl Cook evidence paragraph 27.

Policy 6A.6.2

Ensure public parks and reserves are of a size, shape and type that enables ~~a~~ functional and~~,~~ recreational uses by requiring all subdivision and development to ~~comply with~~ be guided by Structure Plan013.

Commented [B&A5]: As above.

Policy 6A.6.2

Require public parks and reserves to recognise and celebrate Muaūpoko history and values through design, naming, and use of planting.

Policy 6A.6.~~4~~3

Enable education facilities to establish at a scale that supports the needs of the local community~~, with limits on scale to protect the amenity of the surrounding environment~~.

Explanation and Principal Reasons

Open space that can be used for a range of recreational purposes is an important asset for both the wider community and the ~~Taraika~~Tara-Ika community. Furthermore, recreation space contributes positively to residential amenity. In addition, recreation space provides opportunity to manage stormwater during heavy rain events and to contributes to the ecology of an area.

It is important that ~~Taraika~~Tara-Ika is serviced by quality reserve space. As a large greenfield site, there is opportunity to secure land for recreation space early in the land development process, to ensure it is functional, accessible, and of high amenity. The above objectives and

policies (and supporting rules in Chapter 15A of the District Plan) seek to secure this outcome.

Methods for Issues and Objectives in ~~Taraika~~Tara-Ika

District Plan

- A range of zones, supported by a '~~Taraika~~Tara-Ika Precinct', will be identified on the planning maps.
- ~~Taraika~~Tara-Ika precinct specific rules will be applied, in addition to general zoning rules, to specify how subdivision and development will be managed in order to achieve the above objectives and policies.
- A structure plan will guide subdivision and development in the ~~Taraika~~Tara-Ika area in order to achieve the above objectives and policies.
- The resource consent process will provide opportunity for appropriate subdivision and development proposals that are not permitted, either because of non-compliance with environmental standards or because of the nature of the non-residential land uses.
- Conditions on resource consents will control the effects of subdivision and development.

Standards expressed as District Plan rules are considered to be the most appropriate and effective method of maintaining minimum standards for the matters over which the Council has jurisdiction. Rules provide certainty for resource users and for neighbours which is important for community understanding of what environmental quality is expected. The use of a Design Guide is effective in providing guidance on the matters and outcomes for achieving quality medium density developments.

~~Taraika~~Tara-Ika Master Plan

The ~~Taraika~~Tara-Ika Master Plan formed the basis of the above objectives and policies and Structure Plan. The Master Plan provides further detail, assessment, and information that justify the outcomes sought for the ~~Taraika~~Tara-Ika area.

Long Term Plan/Annual Plan

- Council will undertake amenity improvement work including street planting and traffic management schemes within residential areas. Council will co-ordinate the provision of appropriate infrastructure to support residential development.
- Council will continue to maintain the landscape of streets (berms and sealed surfaces) and areas of public open space throughout the settlements.
- ~~Council will require developers to contribute to the costs of new infrastructure and upgrading, reserves provision, community and recreational facilities and amenity improvements in residential areas.~~
- Council will require developers to contribute to the costs of new infrastructure and upgrading, reserves provision, community and recreational facilities and amenity improvements through its Development Contributions Policy.

Commented [B&A6]: Reason: Very similar to/duplication of following bullet point.
Reference: Karl Cook evidence paragraph 46.

There are a range of non-District Plan methods available to promote a good standard of residential design and development, particularly through the use of Codes and Guidelines, and through Council funded initiatives for community and residential amenities. Development Contributions from residential development will be used in the upgrading and

expansion of the District's roads, reserves and other civic amenities and facilities.

Other

- The use of private developer agreements to facilitate infrastructure works and provision of other facilities addressed in the Development Contributions Policy
- Engagement with Muaūpoko
- Council will work with ~~iwi~~Muaūpoko, particularly in regard to stormwater design, reserve design, planting, and street and reserve naming.
- Contractors will be briefed on the tikanga requirements.
- Council and Muaūpoko will co-design an Open Space Design Guide which will include guidance on how to integrate and provide for Muaūpoko relationships and values within Tara-Ika.

Commented [B&A7]: Reason: Additional words refer to other facilities in the preceding section and provide the Development Contributions Policy context for private developer agreements.
Reference: Karl Cook evidence paragraph 47.

15A. ~~TARAIKA~~TARA-IKA MULTI-ZONE PRECINCT

A 'multi-zone precinct' is a tool set out in the National Planning Standards. The National Planning Standards define a 'precinct' as follows:

> A precinct spatially identifies and manages an area where additional place-based provisions apply to modify or refine aspects of the policy approach or outcomes anticipated in the underlying zone(s).

~~Taraika~~Tara-Ika contains a number of different zones, including Residential, Greenbelt Residential, Open Space, and Commercial. The majority of the current rules and standards contained within these existing zone will apply within ~~Taraika~~Tara-Ika. However, there are some instances where different rules and standards will be required within ~~Taraika~~Tara-Ika. Therefore, the respective zone chapter provisions will apply within ~~Taraika~~Tara-Ika, except as modified by the provisions contained within Chapter 15A. If there is conflict between chapters, the provisions of Chapter 15A will override.

15A.1 PERMITTED ACTIVITIES

The following activities are permitted activities provided activities comply with all relevant conditions in Rule 15A.6 and Chapters 21, 22, 23 and 24.

Note: The permitted activity conditions within the relevant zone chapter for the relevant activity type also apply. Where there is conflict between provisions, the more specific provision (i.e. the provisions of this chapter) apply.

15A.1.1 All Zones

15A.1.1.1 Activities permitted by the underlying zone chapters

(a) Within the Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a permitted activity in Chapter 15 are a permitted activity, provided activities comply with all relevant conditions contained within Chapter 15.

(b) Within the Greenbelt Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a permitted activity in Chapter 18 are a permitted activity, provided activities comply with all relevant conditions contained within Chapter 18.

(c) Within the Open Space Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a permitted activity in Chapter 20 are a permitted activity, provided activities comply with all relevant conditions contained within Chapter 20.

15A.1.2 Commercial Zone

In the Commercial Zone, the only permitted activities are:

(a) Commercial (excluding entertainment activities) occupying a floor area of up to 250m^2

(b) Retail occupying a floor area of up to 250m^2

(c) Community activities

(d) Recreation facilities

(e) Public conveniences

(f) Open space

(g) Residential activities above ground floor (i.e. 1st floor or above), or at ground level only where the residential activity does not directly front onto the road boundary (i.e. they are located to the rear of a commercial activity).

(h) The following types of signs

(i) Advertising signs, including public facility or information signs identifying a building, property or business.

(ii) Official signs.

(iii) Temporary signs.

(iv) Signs advertising sale or auction of land or premises.

(v) Health and safety signs.

(i) The following network utilities and energy activities:

(i) The construction, operation, maintenance and upgrading of network utilities.

(ii) Domestic scale renewable energy devices.

(j) Temporary activities

15A.2 CONTROLLED ACTIVITIES

The following activities are controlled activities provided activities comply with all relevant conditions in Rules 15A.6 and Chapters 21, 22, 23 and 24. In addition, refer to the relevant zone chapters for matters of control and conditions for controlled activities:

Note: The matters of control contained within the relevant zone chapter for the relevant activity type also apply.

15A.2.1 All Zones

(a) Within the Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a controlled activity in Chapter 15 are a controlled activity, provided activities comply with all relevant conditions contained within Chapter 15.

(b) Within the Commercial Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a controlled activity in Chapter 17 are a controlled activity, provided activities comply with all relevant conditions contained within Chapter 17.

(c) Within the Greenbelt Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a controlled activity in Chapter 18 are a controlled activity, provided activitiescomply with all relevant conditions contained within Chapter 18.

(d) Within the Open Space Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a controlled activity in Chapter 20 are a controlled activity, provided activities comply with all relevant conditions contained within Chapter 20.

15A.3 RESTRICTED DISCRETIONARY ACTIVITIES

The following activities are restricted discretionary activities provided activities comply with all relevant conditions in Rule 15A.7. Refer to Rules 15A.8.2~~15A.8.1~~, 15A.8.3~~15A.8.2~~ and 15A.8.4~~15A.8.3~~ for matters of discretion and conditions for restricted discretionary activities.

Note: The matters of discretion and conditions for restricted discretionary activities contained within the relevant zone chapter for the relevant activity type also apply.

Note: Refer to Chapter 25 for Assessment Criteria as a guide for preparing an assessment of environmental effects to accompany a resource consent application for any of the above activities.

15A.3.1 All Zones

(a) The subdivision of land.

(b) Within the Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a restricted discretionary activity in Chapter 15 are a restricted discretionary activity, provided activities comply with all relevant conditions contained within Chapter 15.

(c) Within the Commercial Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a restricted discretionary activity in Chapter 17 are a restricted discretionary activity, provided activities comply with all relevant conditions contained within Chapter 17.

(d) Within the Greenbelt Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a restricted discretionary activity in Chapter 18 are a restricted discretionary, provided activities comply with all relevant conditions contained within Chapter 18.

(e) Within the Open Space Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a restricted discretionary activity in Chapter 20 are a restricted discretionary, provided activities comply with all relevant conditions contained within Chapter 20.

(f) Subdivision or land use activities that are not consistent with Structure Plan 013.

(g) Any activity that does not comply with Rule 15A.6.1.1 – Vehicle Access into Strategic Cycleways.

Commented [B&A8]: Reason: RDA status most appropriate.
Reference: Karl Cook evidence paragraphs 25 to 27.

Commented [B&A9]: Reason: RDA status most appropriate.
Reference: Karl Cook evidence paragraphs 38 to 40.

15A.3.2 Residential Zone

(a) Any development within the Arapaepae Road Special Treatment Overlay noted on Structure Plan 013

15A.3.3 Commercial Zone

15A RULES: ~~TARAIKA~~TARA-IKA MULTI-ZONE PRECINCT

(a) Development of new buildings and additions or external alterations to building frontages. (Refer Rule 15A.8.3.1~~15A.8.2.1~~).

(b) Supermarkets (Refer Rule 15A.8.3.2~~15A.8.2.2~~).

(c) Drive-through restaurants. (Refer Rule 15A.8.3.3~~15A.8.2.3~~).

15A.4 DISCRETIONARY ACTIVITIES

The following activities are discretionary activities.

Note: Refer to Chapter 25 for Assessment Criteria as a guide for preparing an assessment of environmental effects to accompany a resource consent application for any of the above activities.

15A.4.1 All Zones

(a) Within the Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a discretionary activity in Chapter 15 are a discretionary activity, provided activities comply with all relevant conditions contained within Chapter 15.

(b) Within the Commercial Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a discretionary activity in Chapter 17 are a discretionary activity, provided activities comply with all relevant conditions contained within Chapter 17.

(c) Within the Greenbelt Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a discretionary activity in Chapter 18 are a discretionary activity, provided activities comply with all relevant conditions contained within Chapter 18.

(d) Within the Open Space Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a discretionary activity in Chapter 20 are a discretionary activity, provided activities comply with all relevant conditions contained within Chapter 20.

(e) Any activity not otherwise specified.

15A.4.2 Residential Zones

(a) Any subdivision that does not comply with the restricted discretionary activity conditions (Refer Rule 15A.8.2.1~~15A.8.1.1~~), except where the subdivision is a non- complying activity in accordance with Rule 15A.5.1(a) and/or Rule 15A.5.1(f).

15A.4.3 Commercial Zone

(a) Commercial activities that do not comply with maximum floor area limits.

(b) Development of a new building, or additions and/or alterations to existing building frontages that do not comply with the conditions for Restricted Discretionary Activities in Rule 15A.8.3.1~~15A.8.2.1~~

15A.5 NON-COMPLYING ACTIVITIES

The following activities are non-complying activities.

15A RULES: ~~TARAIKA~~TARA-IKA MULTI-ZONE PRECINCT

Note: Refer to Chapter 25 for Assessment Criteria as a guide for preparing an assessment of environmental effects to accompany a resource consent application for any of the above activities.

15A.5.1 All Zones

(a) Within the Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a non-complying activity in Chapter 15 are a non-complying activity, provided activities comply with all relevant conditions contained within Chapter 15.

(b) Within the Commercial Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a non-complying activity in Chapter 17 are a non-complying activity, provided activities comply with all relevant conditions contained within Chapter 17.

(c) Within the Greenbelt Residential Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a non-complying activity in Chapter 18 are a non-complying activity, provided activities comply with all relevant conditions contained within Chapter 18.

(d) Within the Open Space Zone of the ~~Taraika~~Tara-Ika Precinct, activities listed as a non-complying activity in Chapter 20 are a non-complying activity, provided activities comply with all relevant conditions contained within Chapter 20.

~~(e) Subdivision or land use activities that are not consistent with Structure Plan 013.~~

~~(f)~~(e) Subdivision that does not comply with Rule 15A.8.2.2(b)(ii)~~15A.8.1.2(b)(ii)~~, 15A.8.3.4(b)(ii)~~15A.8.2.4(b)(ii)~~, 15A.8.4.1(b)(ii)~~15A.8.3.1(b)(ii)~~, or 15A.8.5.1(b)(ii)~~15A.8.4.1(b)(ii)~~.

~~(g) Any activity that does not comply with Rule 15A.6.1.1 – Vehicle Access into Strategic Cycleways.~~

~~(h)~~(f) Industrial Activities.

~~(i)~~(g) Large Format Retailing.

Commented [B&A10]: Reason: NCA status not appropriate or necessary.
Reference: Karl Cook evidence paragraphs 25 to 27.

Commented [B&A11]: Reason: NCA status not appropriate or necessary.
Reference: Karl Cook evidence paragraphs 38 to 40.

15A.6 CONDITIONS FOR PERMITTED ACTIVITIES

Note: The permitted activity conditions within the relevant zone chapter for the relevant activity type also apply. Where there is conflict between provisions, the more specific provision (i.e. the provisions of this chapter) apply.

The following conditions shall apply to all permitted activities:

15A.6.1 All Zones

15A.6.1.1 Vehicle Access into Strategic Cycleways

(a) No vehicle crossings shall cross a strategic cycleway shown on Structure Plan 013 will be permitted. In such cases, vehicle access to the site shall be via ~~the~~ side roadsor rear access lanes shown on Structure Plan 013

15A RULES: ~~TARAIKA~~TARA-IKA MULTI-ZONE PRECINCT

15A.6.2 Residential Zones

15A.6.2.1 Rainwater Tanks

(a) All dwellings shall have a rainwater collection tank permanently connected to internal and external non-potable reuse including toilet flushing, laundry, and outdoor taps. Rainwater tanks must be design and installed as follows:

(i) Size of tank:

- Roof area of 75m^2 or less – minimum 2,000 litre capacity
- Roof area of 75m^2 to 200m^2 - minimum 3,000 litre capacity
- Roof area of more than 200m^2 – minimum 5,000 litre capacity

(ii) The roof area to be connected will be the total footprint of the building (excluding freestanding accessory buildings) and 90% of this must be able to freely drain to the tank without need for pumping. Only runoff from roof surfaces is to be collected into the rainwater tanks.

(iii) The rainwater tank, plumbing and pump system must be maintained in working condition ~~of~~ over the life of the dwelling.

(iv) The public potable water supply shall be adequately protected by installation of a non-return valve.

(v) Rainwater tanks are to overflow when full into an on-lot soakage device for stormwater disposal.

Note: Multi-unit dwellings may share an appropriate sized communal tank to be determined at land use or subdivision consent stage.

15A.6.2.2 Maximum Building Height

(a) In the ~~medium~~ Medium ~~density~~ Density ~~area~~ Area overlay the maximum height shall be 10 metres.

Commented [B&A12]: Reason: Consistency with terminology on Planning Maps.
Reference: Karl Cook evidence paragraph 44(d).

15A.6.2.3 Integral Garages

(a) Integral garages shall account for no more than 50% of the front façade of the dwelling unless the garage component is recessed back from the main pedestrian entrance to the dwelling by at least 1 metre

15A.6.2.4 Building Setback from Boundaries

Front/Road Boundary

(a) No building shall be located closer than 2 metres from any road boundary, except that a 5 metre long vehicle standing space shall be provided between the road boundary and any structure housing a vehicle where the vehicle takes direct access to the structure from the road.

15A.6.2.5 Daylight Access

(b) Where two dwellings are joined, there shall be no daylight access standard along the shared boundary.

15A.6.2.6 Fencing

(a) Front Road Boundary

(i) Local Roads

- The maximum height of a fence or wall sited on the boundary or within 2 metres of the boundary shall be no greater than 1.2 metre high.

(ii) Collector and Arterial Roads

- The maximum height of a fence or wall sited on the boundary or within 2 metres from the boundary is 1.5m high

(b) Boundaries adjoining a public reserve or cycle way

- The maximum height of a closed style fence or wall sited on the boundary or within 1.2 metre from the boundary is 1m high

Or

- The maximum height of an open pool style or trellis fence or wall sited on the boundary or within 1 metre from the boundary is 1.8m high

(c) Other Boundaries

- The maximum height of a fence or wall sited on the boundary or within 1 metre from the boundary shall not exceed 2 metres.
- Fences perpendicular to the road shall taper downwards towards the road boundary. The taper should commence at least 1.5m from the road boundary and the maximum height of the fence where it meets the road boundary shall be 1.2m high if the road is a local road, or 1.5m high if it is an Arterial or Collector Road~~arterial or collector road~~.

Commented [B&A13]: Reason: Consistency with terminology on Structure Plan 013.
Reference: Karl Cook evidence paragraph 44(e).

15A.6.3 Commercial

15A.6.3.1 Signs

(a) A maximum of 2 signs will be permitted per frontage in any 2 of the following preferred locations:

- Building façade;
- Verandah fascia;
- Under verandah;
- Side wall;
- Inside the display window.

(b) Signs in the commercial zone shall be limited to the following sizes

Table 15A-1: Sign Dimensions

Sign Type	Maximum Dimensions
Building Façade	Maximum area 1.2m^2.
Verandah Fascia	Must not extend beyond the fascia.
Under Veranda	Must have a least 2.5m clearance above the ground.
Side Wall	Maximum 8m^2 and set back at least 0.5m from corner.
~~Inside the Display Window~~	~~Depth of sign must be no greater than 0.3m and must be either above 2m high or below 0.8m high in relation to ground.~~

(c) There shall be no remote signage

15A.6.4 Greenbelt Residential

15A.6.4.1 Rainwater Tanks

(a) All dwellings shall have a rainwater collection tank permanently connected to internal and external non-potable reuse including toilet flushing, laundry, and outdoor taps. Rainwater tanks must be design and installed as follows:

(i) Size of tank:

- Roof area of 75m^2 or less - minimum 2,000 litre capacity
- Roof area of 75m^2 to 200m^2 - minimum 3,000 litre capacity
- Roof area of more than 200m^2 - minimum 5,000 litre capacity

(ii) The roof area to be connected will be the total footprint of the building (excluding freestanding accessory buildings) and 90% of this must be able to freely drain to the tank without need for pumping. Only runoff from roof surfaces is to be collected into the rainwater tanks.

(iii) The rainwater tank, plumbing and pump system must be maintained in working condition over the life of the dwelling.

(iv) The public potable water supply shall be adequately protected by installation of a non-return valve.

(v) Rainwater tanks to overflow when full into an on-lot soakage device for stormwater disposal.

Note: Multi-unit dwellings may share an appropriate sized communal tank to be determined at land use or subdivision consent stage.

15A.7 Matters of Control and Conditions for Controlled Activities

There are no ~~Taraika~~Tara-Ika Precinct specific Matters of Control. The matters of control and conditions for controlled activities contained within the relevant zone chapter for the relevant activity type apply.

15A.8 Matters of Discretion and Conditions for Restricted Discretionary Activities

Note: The matters of discretion and conditions for restricted discretionary activities contained within the relevant zone chapter for the relevant activity type also apply.

The matters over which Council has restricted its discretion for each restricted discretionary activity, and the conditions for each activity, are detailed below:

15A.8.1 All Zones

15A.8.1.1 Conditions for All Restricted Discretionary Activities

(i) Stormwater Management Plan

All applications for restricted discretionary activities must include a stormwater management plan which sets out how stormwater will be managed via both onsite and centralised treatment and soakage facilities (i.e. wetlands and soakage basins) in a manner that ensures stormwater is retained and disposed of within the Tara-Ika Growth Area for up to a 1 in 100 year average recurrence interval (ARI) rainfall event (with allowance for climate change, and allowance for catchment predevelopment flow continuity). The Plan shallbe consistent with the more stringent of the Horowhenua District Plan Subdivision and Development Principles and Requirements 2014 and NZS 4404:2010 (Land development and subdivision infrastructure) and shall includethe following:

- The size, design, location and expected maintenance of stormwater management devices (e.g. rainwater tanks, on-lot soakage, wetlands and soakage basins), including those to be vested with Council.
    - Pre-soakage treatment is required for all runoff from all impervious surfaces excluding roofs and other on-lot impervious areas (patios, shed etc.) but including private driveways and parking areas. The primary method of treatment shall be through centralised end-of-pipe stormwater wetlands that are sized and located to efficiently

Commented [B&A14]: Reason: To achieve Objective 6A.3 (third bullet point).
Reference: Karl Cook evidence paragraphs 41 to 43.

service the Tara-Ika Grwoth Area in an integrated manner. Wetlands shall include a high flow bypass into an adjoining/downstream soakage basin for disposal, sized to bypass flows greater than the Water Quality Flow, and sized to maintain predeveloped catchment flows to the receiving environment.

- The stormwater treatment devices (wetlands) shall be sized to accommodate the Water Quality Flow and Water Quality Volume of the contributing catchment, excluding the roof and on-lot impervious areas that are connected to appropriately sized on-lot soakage devices. The contributing catchment includes adjoining development blocks within Tara-Ika and must consider the future developed upstream catchment.
  The stormwater soakage devices shall be sized to provide full retention and disposal of the 1 in 100 year ARI developed catchment runoff volume (with allowance for climate change, and allowance for catchment predevelopment flow continuity) with no overflows to the downstream environment beyond that of predeveloped flow rates.

Commented [B&A15]: Reason: To achieve Objective 6A.3 (third bullet point).
Reference: Karl Cook evidence paragraphs 41 to 43.

Commented [B&A16]: Reason: To achieve Objective 6A.3 (third bullet point).
Reference: Karl Cook evidence paragraphs 41 to 43.

- Overland flow paths for the 100-year ARI rainfall event (with allowance for climate change) and proposed mechanisms for managing these. The reduction of runoff volume and flow from on-lot soakage disposal cannot be considered in the sizing calculations for the 100-year ARI overland flow path, in order to ensure sufficient capacity is available during extreme events.

- Calculations undertaken to prepare the stormwater management plan. These should be carried out in the following manner:
  - The 12-hour nested design storm specified by Wellington Water in "Reference Guide for Design Storm Hydrology" (2019) shall be applied to Tara-Ika stormwater design calculations.
  - Design storms shall be developed with HIRDS v4 rainfall data for the development site using the RCP 8.5 (2081-2100) climate change scenario.
  - The soakage rate for on-lot soakage devices to receive roof runoff from roofs and other impervious areas (excluding driveways and parking areas) shall be determined by carrying out soakage testing in accordance with Horowhenua District Plan Subdivision and Design Requirements and Principles, with a safety factor of 1.5 applied to the testing results (i.e., divide soakage rate result by 1.5). Evidence of the site-specific soakage testing must be provided, including the suitability of soil layers at the location and depth of the proposed on-lot soakage. In the absence of soakage testing or for the purposes of initial design a soakage rate of 100mm per hour will be applied. Rainwater tank volume shall not be considered in the sizing of on-lot soakage.
  - The Water Quality Volume (WQV) and the Water Quality Flow (WQF) used to size treatment devices shall be calculated using the method specified in Wellington Water's "Water Sensitive Design for Stormwater: Treatment Device Design Guideline" (2019).

Acceptable design standards for treatment and soakage devices include Wellington Water's "Water Sensitive Design for Stormwater: Treatment Device

Design Guideline" (2019), or Auckland Council's "Stormwater Management Devices in the Auckland Region" (2017).

Advice Note: Pre-application meetings with Council are strongly encouraged.

15A.8.1.2 Non-Compliance with Vehicle Access into Strategic Cycleways (Refer Rule 15A.6.1.1)

(a) Matters of Discretion

(i) The extent to which the vehicle access adversely affects the safety and efficiency of cycle movements.

(ii) Any measures to avoid, remedy or mitigate adverse safety and efficiency effects.

(iii) Any benefits for subdivision layout and future use and development resulting from vehicle crossings across a strategic cycleway.

Commented [B&A17]: Reason: Matters relating to proposed RDA status.
Reference: Karl Cook evidence paragraphs 25 to 27.

15A.8.1.3 Subdivision or Land Use Not Consistent with Structure Plan 013 (Refer Rule 15A.3.1(g))

(b) Matters of Discretion

(i) The extent to which, notwithstanding any inconsistency with Structure Plan 013, the subdivision or land use will achieve the objectives and policies in 6A Objectives/Policies: Tara-Ika Multi-Zone Precinct, in particular Policy 6A.1.1.

~~(i)~~(ii) Alternative measures to achieve the outcomes sought in 6A Objectives/Policies: Tara-Ika Multi-Zone Precinct including any benefits for subdivision layout and future use and development resulting from any inconsistency with Structure Plan 013.

Commented [B&A18]: Reason: Matters relating to proposed RDA status.
Reference: Karl Cook evidence paragraphs 38 to 40.

~~15A.8.1~~15A.8.2 Residential Zones

~~15A.8.1.1~~15A.8.2.1 Development within the Arapaepae Road Special Treatment Overlay (Refer to Rule 15A.3.2(a))

(a) Matters of Discretion

(i) Reverse sensitivity effects, including:

- Noise
- Vibration
- Visual
- Traffic

(ii) Compatibility with surrounding and anticipated land uses.

(iii) Safe and efficient access

(b) Conditions

(i) New buildings or alterations to existing buildings containing noise sensitive activities must be design, constructed and maintained to achieve the indoor design noise levels from Arapaepae Road/State Highway 57 traffic set out in Table 15A-2~~Table 15A-2~~ below (excludes area not deemed to be habitable spaces as defined by Schedule 1 of the Building Regulations 1992:

Table 15A-2 Indoor Design Limits

Building Type	**Occupancy/Activity**	**Maximum Indoor Design Noise Level $L_{Aeq(24h)}$**
Residential	Living spaces, sleeping spaces (including visitor accommodation and retirement accommodation)	40dB
Education	Assembly halls	35dB
	Conference rooms, drama studios	40dB
	Lecture rooms and theatres, music studios	35dB
	Libraries	45dB

	Sleeping areas in educational facilities	40dB
	Teaching areas	40dB
Health	Overnight medical care, wards	40dB
	Clinics, consulting rooms, theatres, nurses' stations	45dB
Cultural Buildings	Places of worship, marae	35dB

Note: This table is informed by ~~NZTAs~~ Waka Kotahi guidance material on managing State Highway noise. The purpose of this table is simply to specify the noise level standards for different types of activities. It should not be taken as an indication of what types of activities will more broadly be considered acceptable in this location.

(ii) If windows must be closed to achieve the design noise levels in (i), the building must be designed, constructed and maintained with a ventilation and cooling system. For habitable spaces a ventilation cooling system must achieve the following:

- Ventilation must be provided to meet clause G4 of the New Zealand Building Code. Noise from the system must not exceed 30 dB LAeq(30s) when measured 1 m away from any grille or diffuser.
- The occupant must be able to control the ventilation rate in increments up to a high air flow setting that provides at least 6 air changes per hour. Noise from the system must not exceed 30 dB LAeq(30s) when measured 1 m away from any grille or diffuser.
- The system must provide cooling controllable by the occupant that can maintain the temperature at no greater than 25°C. Noise from the system must not exceed 30 dB LAeq(30s) when measured 1 m away from any grille or diffuser.

(iii) A design report prepared by a suitably qualified and experienced acoustics specialist must be submitted with the building consent application for construction or alteration of any building containing a noise sensitive activity in or partly in the Arapaepae Road Special Treatment Overlay.

(c) Non-Notification

(i) Under section 77D of the RMA, an activity requiring resource consent under Rule 15.7.1 shall not be publicly notified or limited notified, except where:

- The Council decides special circumstances exist (pursuant to Section 95A(9); or
- The applicant requests public notification (pursuant to Section 95A(3)(a)

~~15A.8.1.2~~15A.8.2.2 Subdivision (Refer to Rule 15A.3.1(a))

(a) Matters of Discretion

~~(i) Consistency with Structure Plan 013.~~

~~(ii)~~(i) For subdivisions within the ~~medium~~ Medium ~~density~~ Density ~~area~~ Area overlay, consistency with the MediumDensity Residential Development Design Guide to the extent the content of the guide relates to subdivision.

~~(iii)~~(ii) The design, ~~and~~ layout and variety of the subdivision, including the size, shape and position of any lot, as well as the future land use and development of each lot. In addition, connectivity and linkages (both within and beyond the subdivision) energy efficiency and conservation, and access to solar energy.

~~(iv)~~(iii) ~~Whether the subdivision contains a variety of lot sizes suitable for the area it islocated within.~~

~~(v)~~(iv) ~~Whether the subdivision and likely future development will represent good urban design and will result in the level of amenity anticipated for the area.~~

~~(vi)~~(iv) Provision of land for publically accessible~~y~~ open space and recreation that is appropriately located and of a practicable size and shape for recreation and to support management of stormwater during heavy rain events, in general accordance with Structure Plan 013.

~~(vii)~~(v) Whether the proposal includes ~~The~~ the provision of practicable street plantings.

~~(viii)~~(vi) The provision of access, any new roads, cycleways, and provision of linkages to existing roads~~, access over or under railway lines, the diversion or alteration of any existing roads, the provision of access, passing bays, parking and manoeuvring areas, and any necessary easements.~~

~~(ix) The provision of access to sites, including passing bays, car parking and manoeuvring areas, and any necessary easements.~~

~~(x)~~(vii) The management of traffic generated and potential adverse effects on the safety and efficiency of the street network.

Commented [B&A19]: Reason: Not necessary as consistency with the Structure Plan is a consent trigger.
Reference: Karl Cook evidence paragraph 30(a).

Commented [B&A20]: Reason: Consistency with terminology on Planning Maps.
Reference: Karl Cook evidence paragraph 44(d).

Commented [B&A21]: Reason: Qualification necessary as the design guide mainly deals with the design of buildings and has limited relevance to subdivision.
Reference: Karl Cook evidence paragraph 30(b).

Commented [B&A22]: Reason: Qualification necessary as it is known that achieving strict accordance will not be possible.
Reference: Karl Cook evidence paragraph 30(c).

~~(xi)~~(viii) Minimise use of cul-de-sacs, particularly cul-de-sacs that are long or have poor visibility to or from the street they connect to.

~~(xii)~~(ix) Consideration of Crime Prevention through Environmental Design Principles.

~~(xiii)~~(x) The provision of servicing, including water supply, wastewater systems, stormwater management and disposal, telecommunications, gas and electricity.

~~(xiv)~~(xi) Effects on significant sites and features, including natural/ecological, cultural, archaeological and historical sites.

~~(xv)~~(xii) Avoidance or mitigation of natural hazards.

~~(xvi)~~(xiii) Management of construction effects, including traffic movements, hoursof operation, noise, earthworks and erosion and sediment control. This may require cut and fill plans and erosion and sediment control plans to be submitted with applications for subdivision.

~~(xvii)~~(xiv) Whether tikanga and cultural protocols will be followed~~ing~~ during the construction phase, particularly when undertaking earthworks.

~~(xviii)~~(xv) The staging of development and timing of works.

~~(xix)~~(xvi) Compliance with the Council's Subdivision and Development Principles and Requirements (Version: July 2014).

(xvii) The potential effects of the development on the safe and efficient operation, upgrading, maintenance and replacement of existing lawfully established network utilities.

~~(xx)~~(xviii) Those matters described in Sections 108 and 220 of the RMA

(b) Conditions

(i) Minimum Allotment Area and Shape

Each allotment shall comply with the following site area and shape factor standards for each settlement set out in Table 15A-3~~Table 15A-3~~ below.

Table 15A-3: Standards Applying to Subdivision and Residential Dwelling Units

Residential Zone	Minimum Net Site Area	Maximum Net Site Area/Maximum Density	Minimum Shape Factor	Other Requirements	~~Road Frontage~~

15A RULES: ~~TARAIKA~~TARA-IKA MULTI-ZONE PRECINCT

Medium Density	Attached Units: 150m²*	450m²*	7m	Maximum street block length: 200m Must include building siting plan.*	
	Detached Units: 225m²*	450m²*	10m	Maximum block length: 200m Must include building siting plan.*	~~All sites must have road frontage for at least 7m~~
Standard Residential	330m²	-	13m	Maximum block length: 200m	
Low Density Residential	1000m²	-	18m	N/A	

*The siting plan shall show the location, pedestrian entrances, and outdoor living areas for all future dwellings. Although the dwellings do not need to be built prior to s224 being issued, a condition will be imposed on the subdivision requiring the siting plan to be complied with at the time the site is developed unless resource consent is granted for an alternative development. This outcome will be secured by consent notice.

(ii) Structure Plan

- A condition will be imposed on the resource consent of any subdivision that creates additional allotments and involves a site/part of a site that contains ~~an infrastructure asset~~ roading, ~~as indicated by Structure Plan 013~~ requiring the ~~infrastructure asset~~ roading to be constructed and vested with Council to the full extent ~~indicated on the Structure Plan~~shown in the subdivision consent.

- A condition will be imposed on the resource consent of any subdivision that creates additional allotments and involves a site/part of a site containing a park or reserve ~~as shown on Structure Plan 013~~, requiring the site/part of the site containing the reserve to be vested within Council.

(iii) Water Supply, Wastewater and Other Services

All subdivisions shall comply with the requirements as specified set out in Chapter 24.

(iv) Roads and Access

All subdivisions shall comply with the requirements as specified in Chapter 21.

(v) Network Utilities

17

Commented [B&A23]: Reason: To provide flexibility to enable alternative development that has resource consent.
Reference: Karl Cook evidence paragraphs 33 and 34.

Commented [B&A24]: Reason: To reference roading shown as on the Structure Plan.
Reference: Karl Cook evidence paragraphs 35 and 36.

Commented [B&A25]: Reason: To relate to the subdivision consent rather than the Structure Plan, which is relevant to the subdivision application.
Reference: Karl Cook evidence paragraph 37.

Commented [B&A26]: As above.

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There shall be no minimum site area requirements for lots for network utility purposes.

(c) Non-Notification

(i) Under section 77D of the RMA, an activity requiring resource consent under Rule 15A.8.2.2 shall not be publicly notified or limited notified, except where:

- The Council decides special circumstances exist (pursuant to Section 95A(9); or
- The applicant requests public notification (pursuant to Section 95A(3)(a)

~~15A.8.1.3~~15A.8.2.3 Non-Compliance with requirements for Rainwater Tank (Refer Rule 15A.6.2.1)

(a) Matters of Discretion

(i) The potential for increased volume stormwater discharge from the site.

(ii) The proposed methods of managing the quality and quantity of storm water discharge from the site.

~~15A.8.1.4~~15A.8.2.4 Non-Compliance with Integral Garages (Refer Rule 15A.6.2.3)

(a) Matters of Discretion

(i) The extent to which the integral garage obscures the dwelling from view and/or detracts from the dwelling as the primary feature on the site.

(ii) The extent to which the integral garage reduces the opportunity for passive surveillance between the dwelling and the streetscape.

(iii) ~~The extent to which the integral garage detracts from the dwelling as the primary feature on the site.~~

~~(iv)~~(iii) The effect of the integral garage's position on streetscape character and residential amenity.

~~15A.8.1.5~~15A.8.2.5 Non-Compliance with Fencing (Refer to Rule 15A.6.2.6)

(a) Matters of Discretion

~~(i)~~ The extent to which the fence reduces the opportunity for passive surveillance and social interaction between public and private space.

~~15A.8.2~~15A.8.3 Commercial Zone

~~15A.8.2.1~~15A.8.3.1 New Buildings and Additions/Alterations to Building Frontage (Refer Rule 15A.3.3(a))

(a) Matters of Discretion

(i) Building design and façade treatment should create a high amenity commercial environment that contributes positively to the public realm and enhances pedestrian experience by providing opportunity for interaction between shops front and the street. This includes but is not limited to:

- Locating main building façades to address the primary street frontage.
- Providing an interesting and varied building frontage that is not dominated by either featureless facades or glazing.
- Including horizontal and/or vertical articulation design elements to add visual interest.
- Designing building frontages that complement any existing adjoining buildings.
- Locating doorways and entrances to buildings so they are easily identifiable.

(ii) The building and site design and layout should prioritise pedestrians over vehicles. This includes but is not limited to:

- Pedestrian entrances to shops are built right up to the footpath.
- Any onsite carparking, services areas, and storage areas should be located the rear of the building. They should not be located between the street and the pedestrian entrance to the building.
- If carparks, services areas, and storage areas are visible from the street, they should be well screened from the street by landscaping or similar.

(iii) The provision of verandah that:

- Provide weather protection to pedestrians
- Contribute to the overall appearance and pleasantness of the street

(iv) The application of Crime Prevention through Environmental Design (CPTED) Principles, including:

- Building design and layout.
- Use of appropriate planting and landscaping.

(v) Proposed methods of managing the quality and quantity of stormwater.

(b) Conditions

15A RULES: ~~TARAIKA~~TARA-IKA MULTI-ZONE PRECINCT

(i) All buildings in the Commercial Zone (~~Taraika~~Tara-Ika Precinct) must comply with the following:

- No part of any building shall exceed a height of 15 metres.
- All buildings shall be built to the front road boundary of the site.
- All building shall be built up to the side boundaries (the boundary which is perpendicular to the primary road frontage).
- All buildings shall have display windows along the ground floor road frontage. At least 50% of ground floor facade surface shall be display space or transparent window or doors. The minimum window area shall be kept clear and not be boarded up, painted or covered by signage.
- No building shall have a continuous featureless façade/blank wall on the ground floor road frontage wider than 4 metres. A featureless façade or blank wall is a flat or curved wall surface without any openings, glazing or columns, recesses, niches or other architectural detailing
- All buildings shall have a maximum ground floor road frontage width for individual tenancies of 15 metres.
- All building frontages shall have a minimum height of 6 metres.
- The above standards do not apply to service lane frontages.

(ii) All buildings in the Commercial Zone (~~Taraika~~Tara-Ika Precinct) must contain a verandah and the verandah must comply with the following:

- A minimum clearance of 2.5 metres directly above the footpath or formed ground surface.
- A maximum clearance of 4 metres (measured at the base of the verandah fascia) directly above the footpath or from ground surface.
- Extend for the full length of the building.
- Extend outwards from the front of the building to the far side of the kerbing less than 450mm, or the verandah extends out 3 metres whichever is the lesser.
- Provide continuous shelter with any adjoining verandah or pedestrian shelter.

~~15A.8.2.2~~15A.8.3.2 Supermarkets (Refer to Rule 15A.3.3(b))

(a) Matters of Discretion

(i) Whether parking areas, vehicle access and servicing arrangements are designed and located in a manner that protects the visual amenity of the streetscape and pedestrian safety, including the use of landscaping, planting and lighting.

(ii) Whether the design and layout of the site and buildings protects the visual amenity of the streetscape and pedestrian safety. For example:

- The extent of featureless facades.
- The extent of glazing.
- The extent of signage.
- The extent of window displays that prevent visibility into the store from the street.

(iii) Whether effects arising from operation (for example, hours, location of service areas, waste disposal) will be compatible with any nearby residential zones.

(b) Conditions

(i) Car parking ~~(as required by Chapter 21)~~ (if chosen to be provided) must be provided to the rear of the building.

(ii) The main pedestrian entrance to the supermarket must front the street.

~~15A.8.2.3~~15A.8.3.3 Drive-Through Restaurants (Refer to Rule15A.3.3(c))

(a) Matters of Discretion

(i) Whether the design and layout of the site and buildings protects the visual amenity of the streetscape and pedestrian safety. For example:

- The extent of featureless facades.
- The extent of glazing.
- The extent of signage.
- The extent of window displays that prevent visibility into the store from the street.
- Screening and/or landscaping of equipment, parking and service areas.
- Whether the location of the drive-through detracts from pedestrian experience by creating a barrier between the building and the footpath.

(ii) Whether operating effects are compatible with surrounding land uses (particular residential areas). For example:

- Whether the activity, including parking areas and storage and servicing facilities, is adequately screened to protect the visual amenity of surrounding land uses.
- Whether the activity, including parking areas and storage and servicing facilities, are located, designed and managed to avoid nuisance effects such as noise and odour on surrounding land uses.
- The impact of adverse effects arising from the numbers of people and/or vehicles using the site.
- The effects of the activity's operation on the existing and expected future amenity values of the surrounding area and any mitigation measures proposed.

(iii) Whether the site is located, designed and laid out in a manner that avoids adverse effects on the safe and effective operation of the roading network, including pedestrians. For example:

- Whether the nature and scale of vehicle movements associated with the activity will have an adverse effect on road users.
- Whether the drive through is positioned to provide sufficient off-road queuing space during peak times.
- Whether the site is designed to allow a free flow of traffic from the road into the parking area.
- Whether the activity is designed in such a manner that vehicles can manoeuvre on-site in a safe and efficient manner.
- Whether sufficient vehicle (including service vehicles) and pedestrian access is provided to the site to minimise conflict between pedestrians and vehicles.

(b) Conditions

(i) The main pedestrian entrance to the restaurant must front the street.

(ii) Car parking (~~as required by Chapter 21~~if chosen to be provided) must be provided to the rear of the building.

~~15A.8.2.4~~15A.8.3.4 Subdivision (Refer to Rule 15A.3.1(a))

(a) Matters of Discretion

~~(i) Consistency with Structure Plan 013.~~

~~(ii)~~(i) The design and layout of the subdivision, including the size, shape and position of any lot, including the future land use and development of each lot. In addition, the location of building sites, separation distances, orientation of buildings, and screening/landscape treatment.

Commented [B&A27]: Reason: Not necessary as consistency with the Structure Plan is a consent trigger. Reference: Karl Cook evidence paragraph 30(a).

~~(iii)~~(ii) The amalgamation of any proposed allotments or balance areas to existing titles of land.

~~(iv)~~(iii) The provision of ~~any~~ access, any new roads, cycleways, footpaths, provision oflinkages to existing roads~~, access over or under railway lines, the diversion or alteration of any existing roads, the provision of access, passing bays, parkingand manoeuvring areas, and any necessary easements.~~

~~(v)~~(iv) The provision of servicing, including water supply, wastewater systems, stormwater management and disposal, streetlighting, telecommunications and electricity and, where applicable gas.

~~(vi)~~(v) Provision of reserves, esplanade reserves, esplanade strips and access strips, including connections to existing and future reserves.

~~(vii)~~(vi) Effects on significant sites and features, including natural, ecological, cultural, archaeological and historical sites.

~~(viii)~~(vii) Site contamination remediation measures and works.

~~(ix)~~(viii) Avoidance or mitigation of natural hazards.

~~(x)~~(ix) Management of construction effects, including traffic movements, hours of operation, noise, earthworks and erosion and sediment control. This may require cut and fill plans and erosion and sediment control plans to be submitted with applications for subdivision.

~~(xi)~~(x) Whether tikanga and cultural protocols will be following during the construction phase, particularly when undertaking earthworks.

~~(xii)~~(xi) Staging of the subdivision.

~~(xiii)~~(xii) Compliance with the Councils Subdivision and Development Principles andRequirements (Version: July 2014).

~~(xiv)~~(xiii) Those matters described in Sections 108 and 220 of the RMA.

(b) Conditions

(i) All lots shall demonstrate compliance with the relevant permitted activity conditions, except no minimum lot area requirement applies.

(ii) Structure Plan

- A condition will be imposed on the resource consent of any subdivision that creates additional allotments and involves a site/part of a site that contains ~~an infrastructure asset~~ roading, ~~as indicated by Structure Plan 013~~ requiring the ~~infrastructure asset~~ roading to be constructed and vested with Council to the full extent ~~indicated on the Structure Plan~~shown in the subdivision consent.

Commented [B&A28]: Reason: To reference roading shown as on the Structure Plan.
Reference: Karl Cook evidence paragraphs 35 and 36.

Commented [B&A29]: Reason: To relate to the subdivision consent rather than the Structure Plan, which is relevant to the subdivision application.
Reference: Karl Cook evidence paragraph 37.

- A condition will be imposed on the resource consent of any subdivision that creates additional allotments and involves a site/part of a site containing a park or reserve ~~as shown on Structure Plan 013~~, requiring the site/part of the site containing the reserve to be vested within Council.

(iii) Water Supply, Wastewater and Other Services

All subdivisions shall comply with the requirements as specified set out in Chapter 24.

(iv) Roads and Access

All subdivisions shall comply with the requirements as specified in Chapter 21.

(v) Network Utilities

There shall be no minimum site area requirements for lots for network utility purposes.

(c) Non-Notification

(i) Under section 77D of the RMA, an activity requiring resource consent under Rule 15A.8.3.4~~15.7.1~~ shall not be publicly notified or limited notified, except where:

- The Council decides special circumstances exist (pursuant to Section 95A(9); or
- The applicant requests public notification (pursuant to Section 95A(3)(a)

~~15A.8.3~~15A.8.4 ~~Open Space Zone~~

~~15A.8.3.1~~15A.8.4.1 ~~Subdivision (Refer to Rule 15A.3.1(a))~~

~~(a) Matters of Discretion~~

~~(i) Consistency with Structure Plan 013.~~

~~(ii) The design and layout of the subdivision, including the size, shape and position of any lot, including the future land use and development of each lot. In addition, the location of building sites, separation distances, orientation of buildings, and screening/landscape treatment.~~

~~(iii) The amalgamation of any proposed allotments or balance areas to existing titles of land.~~

~~(iv) The provision of any access, new roads, cycleways, footpaths, provision of linkages to existing roads, access over or under railway lines, the diversion or alteration of any existing roads, the provision of access, passing bays, parking and manoeuvring areas, and any necessary easements.~~

Commented [B&A30]: As above.

Commented [B&A31]: Reason: There is no need for a subdivision consent regime for Open Space zone land because reserves are created as a result of subdivision. Reference: Karl Cook evidence paragraph 23.

~~(v) The provision of servicing, including water supply, wastewater systems, stormwater management and disposal, street lighting, telecommunications and electricity and, where applicable gas.~~

~~(vi) Provision of reserves, esplanade reserves, esplanade strips and access strips, including connections to existing and future reserves.~~

~~(vii) Effects on significant sites and features, including natural, ecological, cultural, archaeological and historical sites.~~

~~(viii) Site contamination remediation measures and works.~~

~~(ix) Avoidance or mitigation of natural hazards. (Note: Refer to the "Risks and Responsibilities: Report of the Manawatu-Wanganui Regional Lifelines Project" (No. 2005/EXT/622) prepared by the Manawatu-Wanganui CDEM Group for information about natural hazards that may be relevant to the subject site).~~

~~(x) Management of construction effects, including traffic movements, hours of operation, noise, earthworks and erosion and sediment control. This may require cut and fill plans and erosion and sediment control plans to be submitted with applications for subdivision.~~

~~(xi) Whether tikanga and cultural protocols will be following during the construction phase, particularly when undertaking earthworks.~~

~~(xii) Staging of the subdivision.~~

~~(xiii) Compliance with the Councils Subdivision and Development Principles and Requirements (Version: July 2014).~~

~~(xiv) Those matters described in Sections 108 and 220 of the RMA.~~

~~(b) Conditions~~

~~(i) All lots shall demonstrate compliance with the relevant permitted activity conditions, except no minimum lot area requirement applies.~~

~~(ii) Structure Plan~~

- ~~A condition will be imposed on the resource consent of any subdivision that creates additional allotments and involves a site/part of a site that contains an infrastructure asset as indicated by Structure Plan 013 requiring the infrastructure asset to be constructed and vested with Council to the full extent indicated on the Structure Plan.~~
- ~~A condition will be imposed on the resource consent of any subdivision that creates additional allotments and involves a site/part of a site containing a park or reserve as shown on Structure Plan 013, requiring the site/part of the site containing the reserve to be vested within Council.~~

~~(iii) Water Supply, Wastewater and Other Services~~

~~All subdivisions shall comply with the requirements as specified set out in Chapter 24.~~

~~(iv) Roads and Access~~

~~All subdivisions shall comply with the requirements as specified in Chapter 21.~~

~~(v) Network Utilities~~

~~There shall be no minimum site area requirements for lots for network utility purposes.~~

~~(c) Non-Notification~~

~~(i) Under section 77D of the RMA, an activity requiring resource consent under Rule 15A.8.4.115.7.1 shall not be publicly notified or limited notified, except where:~~

- ~~The Council decides special circumstances exist (pursuant to Section 95A(9); or~~
- ~~The applicant requests public notification (pursuant to Section 95A(3)(a)~~

~~15A.8.4~~15A.8.5 Greenbelt Residential

~~15A.8.4.1~~15A.8.5.1 Subdivision (Refer to Rule 15A.3.1(a))

(a) Matters of Discretion

~~(i) Consistency with Structure Plan 013.~~

~~(ii)~~(i) The design and layout of the subdivision, including the size, shape and position of any lot, as well as the future land use and development of each lot. In addition, connectivity and linkages (both within and beyond the subdivision) energy efficiency and conservation, and access to solar energy.

~~(iii)~~(ii) ~~Whether the subdivision contains a variety of lot sizes suitable for the area it is located within.~~

~~(iv)~~(iii) ~~Whether the subdivision and likely future development will represent goodurban design and will result in the level of amenity anticipated for the area.~~

~~(v)~~(iii)Provision of land for publically accessibly open space and recreation that is appropriately located and of a practicable size and shape to support management of stormwater during heavy rain events, in general accordance with Structure Plan 013.

~~(vi)~~(iv) Whether the proposal includes ~~The~~ the provision of practicable street plantings.

Commented [B&A32]: Reason: Not necessary as consistency with the Structure Plan is a consent trigger.
Reference: Karl Cook evidence paragraph 30(a).

Commented [B&A33]: Reason: Qualification necessary as it is known that achieving strict accordance will not be possible.
Reference: Karl Cook evidence paragraph 30(c).

~~(vii)~~(v) The provision of ~~any~~access, any new roads, cycleways, footpaths, provision of linkages to existing roads~~, access over or under railway lines, the diversion or alteration of any existing roads, the provision of access, passing bays, parking and manoeuvring areas, and any necessary easements.~~

~~(viii) The provision of access to sites, including passing bays, car parking and manoeuvring areas, and any necessary easements.~~

~~(ix)~~(vi) The management of traffic generated and potential adverse effects on the safety and efficiency of the street network.

~~(x)~~(vii) Minimise use of cul-de-sacs, particularly cul-de-sacs that are long or have poor visibility.

~~(xi)~~(viii) Consideration of Crime Prevention through Environmental Design Principles.

~~(xii)~~(ix) The provision of servicing, including water supply, wastewater systems, stormwater management and disposal, telecommunications, gas and electricity.

~~(xiii)~~(x) Effects on significant sites and features, including natural/ecological, cultural, archaeological and historical sites.

~~(xiv)~~(xi) The protection and enhancement of any natural habitat of indigenous species within the subdivision

~~(xv)~~(xii) Avoidance or mitigation of natural hazards.

~~(xvi)~~(xiii) Management of construction effects, including traffic movements, hoursof operation, noise, earthworks and erosion and sediment control. This may require cut and fill plans and erosion and sediment control plans to be submitted with applications for subdivision.

~~(xvii)~~(xiv) Whether tikanga and cultural protocols will be following during the construction phase, particularly when undertaking earthworks.

~~(xviii)~~(xv) The staging of development and timing of works

~~(xix)~~(xvi) Compliance with the Council's Subdivision and Development Principles and Requirements (Version: July 2014).

(xvii) The potential effects of the development on the safe and efficient operation, upgrading, maintenance and replacement of existing lawfully established network utilities.

~~(xx)~~(xviii) Those matters described in Sections 108 and 220 of the RMA

(b) Conditions

(i) Minimum Allotment Area and Shape

- Each allotment shall comply with the following site area and shape factor standards in Table 15A-4~~Table 15A-4~~

Table 15A-4: Standards Applying to Subdivision and Residential Dwelling Units

Type of Allotment, or Subdivision	Minimum Area Per Allotment/Site	Minimum Shape Factor
Greenbelt Residential General Serviced	2000 square metres	20 metres diameter
Greenbelt Residential General Unserviced	5000 square metres	20 metres diameter

(ii) Structure Plan

- A condition will be imposed on the resource consent of any subdivision that creates additional allotments and involves a site/part of a site that contains ~~an infrastructure asset~~ roading, ~~as indicated by Structure Plan 013~~ requiring the ~~infrastructure asset~~ roading to be constructed and vested with Council to the full extent ~~indicated on the Structure Plan~~shown in the subdivision consent.

- A condition will be imposed on the resource consent of any subdivision that creates additional allotments and involves a site/part of a site containing a park or reserve as shown ~~on Structure Plan 013~~, requiring the site/part of the site containing the reserve to be vested within Council.

(iii) Water Supply, Wastewater and Other Services

All subdivisions shall comply with the requirements as specified set out in Chapter 24.

(iv) Roads and Access

All subdivisions shall comply with the requirements as specified in Chapter 21.

(v) Network Utilities

There shall be no minimum site area requirements for lots for network utility purposes.

(c) Non-Notification

Commented [B&A34]: Reason: To reference roading shown as on the Structure Plan.
Reference: Karl Cook evidence paragraphs 35 and 36.

Commented [B&A35]: Reason: To relate to the subdivision consent rather than the Structure Plan, which is relevant to the subdivision application.
Reference: Karl Cook evidence paragraph 37.

Commented [B&A36]: As above.

(i) Under section 77D of the RMA, an activity requiring resource consent under Rule 15A.8.5.1~~15.7.1~~ shall not be publicly notified or limited notified, except where:

- The Council decides special circumstances exist (pursuant to Section 95A(9); or
- The applicant requests public notification (pursuant to Section 95A(3)(a)

Submitter 04/27 McDonnell Evidence – Stormwater

BEFORE THE HOROWHENUA DISTRICT COUNCIL

IN THE MATTER	of a proposed plan change under Schedule 1 to the Resource Management Act 1991
AND	
IN THE MATTER	of submissions by **JAMES MCDONNELL LIMITED**

STATEMENT OF EVIDENCE OF DARCY BRITTLIFF ON BEHALF OF JAMES MCDONNELL LIMITED

Stormwater

2 NOVEMBER 2021

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INTRODUCTION

1. My full name is Darcy Vaughan Brittliff.

2. I hold a Bachelor of Engineering Degree (Natural Resources) with Honours from the University of Canterbury which I gained in 1999. I am a member of Engineering New Zealand and I am also a Chartered Professional Engineer in the practice area of civil and land development engineering. I am a member of the Association of Consulting Engineers (**ACENZ**).

3. I have prepared and delivered evidence on civil engineering and land development matters in various council hearings in Napier, Hastings, Wellington, Porirua, and Christchurch. I have also delivered evidence on land development and civil engineering matters in the Environment Court in Christchurch, which involved detailed expert witness conferencing over a number of months on technical stormwater matters, in addition to presenting evidence to Court.

4. I am a Director of Orogen Limited where I practice land development engineering in the wider Wellington region. I have held prior roles that have enabled me to practice across New Zealand including time with Wellington City Council in their drainage and water supply department in the early 2000s.

5. From these various roles I have a acquired a wide range of experience and knowledge as a Chartered Professional Engineer. I have also gained experience in consulting on land development and civil engineering matters, and developed a strong understanding of the various technical guides referenced in the Horowhenua District Council (**HDC**) documents relevant to engineering matters at Tara-Ika.

6. As further background I have provided a list of recent land development projects that I have been involved with, in **Appendix A** to this evidence.

7. I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

PURPOSE OF MY EVIDENCE

8. I have been asked to prepare evidence for this hearing on behalf of James McDonnell Limited (**JML**).

9. My evidence will:

(a) address why the Proposed Plan Change 4 (**PC4**) provisions as currently proposed will make it difficult to achieve the objective of integrating the design of stormwater management facilities with open space areas; and

(b) clarify the concept of hydraulic neutrality for stormwater management.

10. In preparing my evidence I have reviewed:

(a) the Section 32 Report Appendices;

(b) the Prehearing Report – "Proposed Plan Change 4: Tara-Ika Growth Area - Structure Plan, Zoning, and Stormwater";

(c) the Section 42A Report, specifically:

(i) 5.4.3 Stormwater Management;

(ii) Appendix 3: Structure Plan Maps: SP.001, Planning Map 30; and

(iii) Appendix 9: GHD Technical Memorandum;

(d) the further submission of HDC, by Daniel Haigh dated 15 March 2021 (Further Submission 34);

(e) Submission 27 – Brendan McDonnell, on behalf of JML; and

(f) Further Submission 22: Roger Truebridge (which was done in conjunction with Brendan McDonnell, on behalf of JML).

11. I have attached the following documents to my evidence:

(a) **Appendix A** – Recent land development projects I have been involved with;

(b) **Appendix B** – GHD Plan 12536997-C001 from Further Submission 34;

(c) **Appendix C** – Orogen Drawing PL002 – Contour map; and

(d) **Appendix D** – Figure 1 – Conceptual stormwater management areas.

INTEGRATING STORMWATER MANAGEMENT AREAS WITH OPEN SPACE ZONES

Objective 6A.6

12. PC4 promotes the proposal to use open space areas for stormwater management. In line with this, Objective 6A.6 and the accompanying explanation states: (my **emphasis**)

> To provide high quality public open space that is accessible and can be used for a variety of purposes, **including stormwater management**.
>
> Explanation and Principal Reasons
>
> Open space that can be used for a range of recreational purposes is an important asset for both the wider community and the Tara-Ika community. Furthermore, recreation space contributes positively to residential amenity. **In addition, recreation space provides opportunity to manage stormwater during heavy rain events and to contributes to the ecology of an area.**

13. I support this objective.

Recommendation to align Stormwater Management Areas with Open Space Zones on the Structure Plan

14. Initially, as set out in the Further Submission 34, HDC sought to define the locations at Tara-Ika required for stormwater management, as shown on GHD Plan 12536997-C001 (forming part of that submission) and included as **Appendix B** to my evidence.

15. However, after further consideration, HDC decided instead to opt for a more flexible set of provisions which defer the final locations of such devices to the

subdivision stage, through requiring the provision of a stormwater management plan as required by rule 15A.8.1.1,

16. I am supportive of this approach, because in my view, insufficient design work had been carried out to accurately determine the optimum locations for stormwater management areas in the Tara-Ika catchments.

17. The same flexibility has not been afforded to the spatial arrangement of Open Space Zone, or the position of the Arterial and Collector Road networks. For reasons I explain below, the final arrangement and position of Open Space Zone, Arterial, and Collector Roads are influenced by stormwater design considerations. Therefore, integrated consideration is required to achieve the intended Objective. However, PC4 proposes to:

(a) zone areas identified for Open Space at Tara-Ika, thereby fixing the spatial location of open space areas; and

(b) fix the location of "Arterial" and "Collector" roads by making it a non-complying activity to change their locations at subdivision stage, because these roads are prominent locations and are driving elements for the land form. I do note however, that "Local" Roads are not constrained to the locations shown on the Structure Plan, allowing flexibility for these minor or residential access roads at subdivision stage.

Open Space Zones do not align with the location of Stormwater Management Areas

18. I have undertaken some preliminary design work on the locations for stormwater management wetlands and soakage basins for Tara-Ika. The outcome of this exercise demonstrates that the Stormwater Management Areas do not necessarily align to the proposed open space locations or to the proposed urban development layout shown on the PC4 maps or Structure Plan.

19. The natural topography of Tara-Ika falls in a north-west direction at a land form slope of 1m vertical to 80m horizontal height change (refer to drawing PL002 attached as **Appendix C**).

20. The slope of the landform means that Stormwater Management Areas envisaged by Objective 6A.3 will therefore be located in the north-western boundaries of land holdings in Tara-Ika. It is to these locations where natural runoff will fall and therefore they will need to be the locations of the wetlands and basin disposal areas contemplated by the Objective.

21. The GHD Plan in Further Submission 34 (included as **Appendix B** to this evidence) reflects the topography of Tara-Ika and defines the catchment boundary for the Koputaroa Stream over Tara Ika, which I agree with. What is interesting in this Plan is that the proposed locations for wetlands or basins are not integrated into the development design. Rather, they are simply a location and therefore, they do not reflect earthworks design and roading design required to create an integrated outcome.

22. I have developed an earthworks concept for part of Tara-Ika to understand catchments and to test the ability to deliver the Objective for integrated stormwater and open space design. Albeit preliminary, my work demonstrates the mechanics envisaged by the stormwater objectives, to capture and convey stormwater to an area for water quality treatment before disposal to land via soakage. This outcome is shown in **Appendix D** on my plan labelled Figure 1.

ANALYSIS OF CATCHMENTS

Queen catchment

23. The Queen catchment to the north of the zone captures runoff from 15 hectares of land from the Koputaroa boundary and conveys that to the northwest of the site. 1.5 hectares of land will be required for stormwater management of circa 9,590m^3 consisting of:

(a) a wetland of 0.86 hectares to treat the water quality volume from this catchment;

(b) a flood attenuation area to support events up to the 100 year design storm of 0.42 hectare; and

(c) an allowance for topography integration (slopes) and landscaping of 20% or 0.2 hectares.

Liverpool A catchment

24. The Liverpool A catchment captures runoff from 20 hectares of land from the Koputaroa boundary and conveys that to the west of the site. 2.12 hectares of land will be required for stormwater management of circa 16,300m^3 consisting of:

(a) a wetland of 1.3 hectares to treat the water quality volume from this catchment;

(b) a flood attenuation area to support events up to the 100 year design storm of 0.52 hectares; and

(c) an allowance for topography integration (slopes) and landscaping of 20% or 0.3 hectares.

Liverpool B catchment

25. The Liverpool B catchment captures runoff from 46.3 hectares of land from the Koputaroa boundary and conveys that to the west of the site. 2.4 hectares of land will be required for stormwater management of circa 26,700m^3 consisting of:

(a) a wetland of 1.38 hectares to treat the water quality volume from this catchment;

(b) a flood attenuation area to support events up to the 100 year design storm of 0.7 hectares; and

(c) an allowance for topography integration (slopes) and landscaping of 20% or 0.3 hectares.

Liverpool C catchment

26. The Liverpool C catchment captures runoff from 30.6 hectares of land and conveys that to the centre of the site. 2.42 hectares of land will be required for stormwater management of circa 22,840m^3 consisting of:

(a) a wetland of 1.38 hectares to treat the water quality volume from this catchment;

(b) a flood attenuation area to support events up to the 100 year design storm of 0.66 hectares; and

(c) an allowance for topography integration (slopes) and landscaping of 20% or 0.38 hectares.

Tararua catchment

27. The Tararua catchment captures runoff from 10.5 hectares of land and conveys that to the west. 1.3 hectares of land will be required for stormwater management of circa 8,300m^3 consisting of:

(a) a wetland of 0.75 hectares to treat the water quality volume from this catchment;

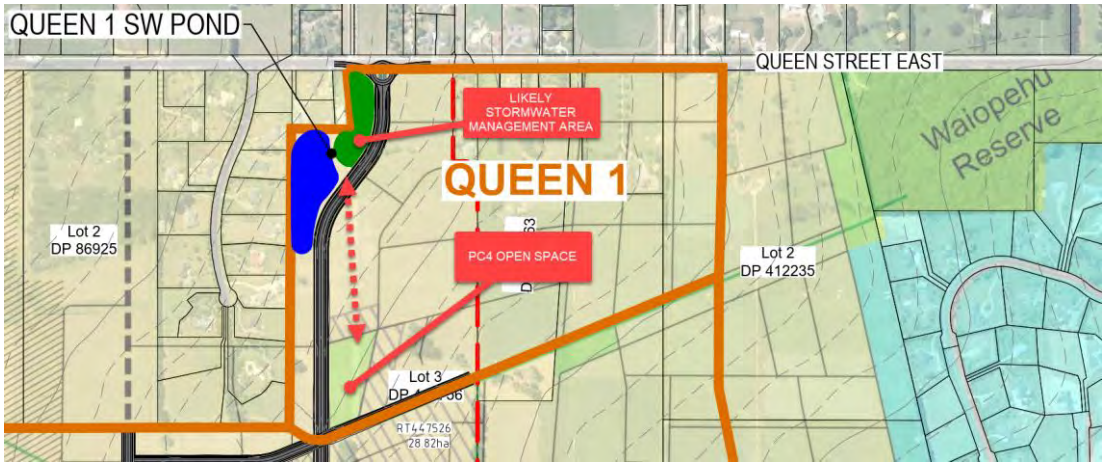
(b) a flood attenuation area to support events up to the 100 year design storm of 0.38 hectares; and

(c) an allowance for topography integration (slopes) and landscaping of 20% or 0.18 hectares.

28. This catchment assessment, together with the shapes shown on Figure 1 (in **Appendix D**) provide an indication of scale of these stormwater management areas. Further design consideration as to shape, orientation to roads, orientation to lots, and access integration and amenity use would be the next detailed step in the design process for these areas.

Resulting Stormwater Management Area vs Open Space Zone locations

29. What can be concluded following this stormwater approach is that the locations of the preferred stormwater management area do not necessarily align to where the proposed Open Spaces are located with some examples below:



Queen catchment

Liverpool A catchment

CONCLUSION ON LOCATION OF OPEN SPACE ZONE

30. Using the catchments I have analysed above as examples, 4.04 hectares of land is accessible as passive open space that has a runoff risk profile attached to it, and through good design could be used for open space purposes. The risk profile for a 100 year design event has a 1% chance of exceedance in any one year. This means that these passive areas would be subject to this risk.

31. My simplified assessment highlights the potential misalignment of stormwater management areas and Open Space Zone. The location for Open Space is proposed to be zoned in PC4, yet the stormwater objectives seek the

consideration of integrated design. The current provisions, in my view, cannot be realised as demonstrated here.

32. Therefore, my recommendations are as follows:

(a) Large catchments could be segregated into many smaller areas that could include integrated stormwater areas amongst the proposed development zones. This would result in potentially many stormwater areas across the zone that are integrated into the proposed housing areas providing both a stormwater function and open space amenity.

(b) Allow flexibility in the application of the Open Space locations and the location of key roads that define the stormwater catchments, to achieve the integrated outcomes sought in PC4.

(c) An integrated design approach controlled at the time of subdivision via the Stormwater Management Plan approval process provides a pathway for providing the flexibility required to achieve the desired outcomes.

(d) The Structure Plan arrangement of Open Spaces must only be used as a guide. The final location of Open Space Zone can be established at the subdivision stage once the local road alignments and spatial arrangement for stormwater basins has been confirmed through the proposed Stormwater Management Plans in Rule 15A.8.1.1.

33. An example of where an integrated design approach was used is the Awatea Road basins at Wigram Skies in Christchurch, shown below. The open space also has the function of a stormwater basin:

Wigram Skies – Awatea Road stormwater basin - Image from Google

POTENTIAL CONFLICT IN THE STORMWATER OBJECTIVE WITH THE POLICIES

34. I support the overall approach to stormwater management in PC4, including the new proposed Rule 15A.8.1.1 and its requirement to seek a Stormwater Management Plan with subdivision applications, as those plans will detail the proposed solutions for the development in accordance with the objectives.

35. However, in my review of Objective 6A.3 and its policies, I read a potential conflict. The conflict I see is one as an engineering designer and I consider it to be worthwhile clarifying to ensure that future developments are aligned to the intention of this Objective.

36. Objective 6A.3 is as follows: (my **emphasis)**

> **Objective 6A.3**
> Stormwater management in Tara-Ika will be resilient and environmentally sustainable, including:
> - Resilient to natural hazards and the likely effects of climate change;
> - Incorporating Water Sensitive Design;
> - **Minimise adverse effects from changes in the nature (including quality and quantity) of natural flows on downstream ecosystems.**

37. My interpretation of this objective, particularly the last bullet point, is that little or no change is to occur in the downstream catchment because of the proposed development of Tara-Ika.

38. To me, this means current pre-developed flows at Tara-Ika must continue to be conveyed, post-development, to the downstream catchments. This will mean the current natural flow to the downstream ecosystem is maintained.

39. I have reviewed the supporting policies and suggest the following additions to clarify this interpretation:

> **Policy 6A.3.2**
> *Require stormwater to be retained…(with allowance for climate change, and allowance for catchment predevelopment flow continuity), …following:*
> (i) limiting the extent of impervious areas;
> (ii) incorporating on-site treatment and disposal of stormwater into subdivision and development design;

(iii) provision of catchment-wide facilities like wetlands that are efficient and effective from both a construction and maintenance perspective.

(iv) Maintain predevelopment flows to the natural downstream ecosystems.

15A.8.1.1 Conditions for All Restricted Discretionary Activities

(v) *Stormwater Management Plan*

All applications...*(with allowance for climate change, and allowance for catchment predevelopment flow continuity)*.

Bullet point criteria amendment:

- Pre-soakage treatment is required for all runoff…sized to bypass flows greater than the Water Quality Flow, and sized to maintain predeveloped catchment flows to the receiving environment.

- The stormwater treatment devices (wetlands) shall be sized to accommodate the Water Quality Flow and Water Quality Volume of the contributing catchment…The stormwater soakage devices shall be sized to provide full retention and disposal of the 1 in 100 year ARI developed catchment runoff volume (with allowance for climate change, and allowance for catchment predevelopment flow continuity) with no overflows to the downstream environment beyond that of predeveloped flow rates.

40. With the changes suggested above, I support Rule 15A.8.1.1 and its requirement to seek a Stormwater Management Plan with subdivision applications, as that will detail the proposed solutions for the development in accordance with the objectives.

Darcy Brittliff

2 November 2021

Appendix A

Involvement in land development projects

Involvement with land development projects within the Wellington region:

(a) Porirua – Design and lead engineer for various commercial developments (large freight and workshop type developments) and the recent residential developments of Brookside Estate and Navigation Heights in Whitby (circa 150 lots per year covering earthworks, drainage, pavements and water sensitive design).

(b) The Banks, Whitby – Peer reviewer for detailed design of stormwater management in and around Duck Creek, erosion and sediment control detailed design for earthworks.

(c) Staithes Drive development project, Whitby – Project Director role included planning, project cost reporting, design, construction management, payment and compliance certifications.

(d) Woodridge – Design and lead engineer for 400-lot development proposed under the Wellington City Special Housing Acts area (HASHA) involving bulk infrastructure design.

(e) Upper Stebbings Valley – Engineering lead for Structure Plan to inform proposed District Plan for 60 hectares of residential development for Wellington City Council.

(f) Kāpiti Coast – Design Engineering Director for civil engineering issues on the Waikanae River Recharge project for Kapiti Coast District Council.

(g) Kāpiti Coast – Ngārara Farm infrastructure master plan 2020 Infrastructure Design Director for earthworks, stormwater, sewer, water supply and roading.

(h) Ngāti Toa - Infrastructure Design Director for the Infrastructure master plan 2020/21 for Takapūwāhia regeneration to support Iwi housing and mana aspirations in Porirua and subsequent application for the Kainga Ora Infrastructure Acceleration Fund (currently at evaluation stage).

(i) Dommett Street extension and Tamworth Crescent, Bellevue – Project Director for 80-lot subdivision for planning approvals, earthworks, stormwater, sewer, water supply and roading.

(j) Kelson – Due diligence investigation and cost estimation for civil works for 150-lot housing development.

Involvement with land development projects outside the Wellington region:

(a) Hastings – Lyndhurst suburb infrastructure planning and design engineer for an area encompassing 700 new homes in Hastings for the Hastings District Council. Involving stormwater, sewer, water supply, and roading design.

(b) Havelock North – Arataki suburb infrastructure planning and design engineer for an area encompassing 200 new homes in Havelock North. Involving stormwater, sewer, water supply, and roading design.

(c) Napier – Te Awa District Plan Change from rural to residential land use. I provided evidence on behalf of landowners in relation to an onsite stormwater management concept for their land in this hearing.

(d) Christchurch – North West Belfast Living G Zone planning hearing. I provided evidence on behalf of landowners owning 90 hectares of land in this zone and developed a stormwater management proposal that was then progressed through the Environment Court. Beyond this hearing, I led the obtaining of resource consents from Environment Canterbury for the system.

Appendix B

GHD Plan 12536997-C001 from Further Submission 34

A	FOR INFORMATION	TDS	DA		11/03/21
No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

0 100 200 300m
SCALE 1:10,000 AT ORIGINAL SIZE

GHD
Level 2, 57-64 The Square,
Palmerston North New Zealand
PO Box 447 Palmerston North
T 64 6 353 1800 F 64 6 353 1801
E palmmail@ghd.com W www.ghd.com

Drawn	T. DA SILVA	Designer	
Drafting Check		Design Check	
Approved (Project Director)			
Date			
Scale	This Drawing must not be used for Construction unless signed as Approved		

Client: HOROWHENUA DISTRICT COUNCIL
Project: TARAIKA GROWTH AREA
Title: STORMWATER BASIN FOOTPRINT

Original Size: A3
Drawing No: 12536997-C001
Rev: A

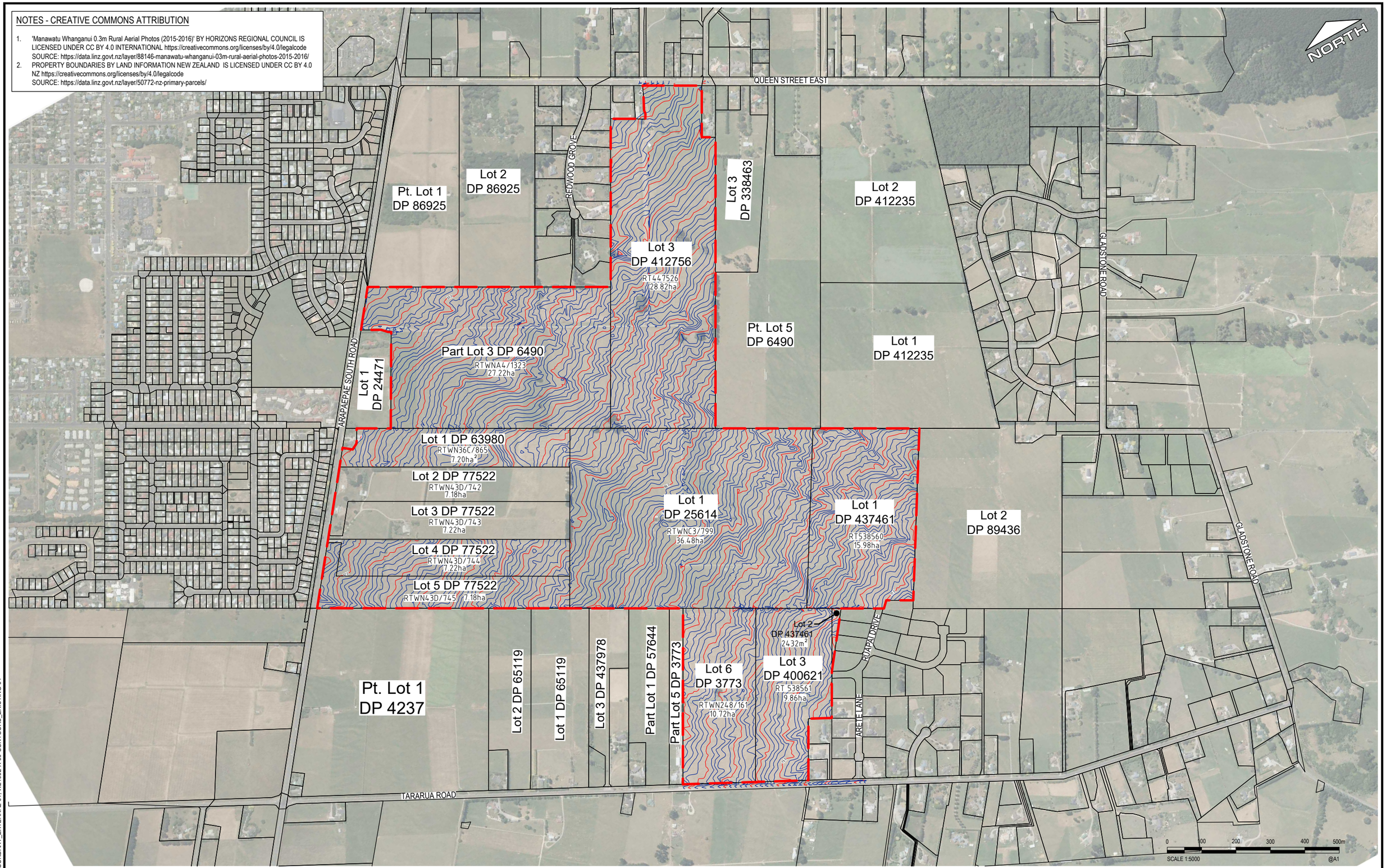
Plot Date: 15 March 2021 - 2:37 PM
Plotted By: Tyler Da Silva
Cad File No: N:\NZ\Palmerston North\Projects\51\12536997\CADD\Drawings\Stormwater\12536997-Taraika_WQ_Footprints.dwg

Appendix C

Orogen Drawing PL002 – Contour map

NOTES - CREATIVE COMMONS ATTRIBUTION

1. 'Manawatu Whanganui 0.3m Rural Aerial Photos (2015-2016)' BY HORIZONS REGIONAL COUNCIL IS LICENSED UNDER CC BY 4.0 INTERNATIONAL https://creativecommons.org/licenses/by/4.0/legalcode
   SOURCE: https://data.linz.govt.nz/layer/88146-manawatu-whanganui-03m-rural-aerial-photos-2015-2016/
2. PROPERTY BOUNDARIES BY LAND INFORMATION NEW ZEALAND IS LICENSED UNDER CC BY 4.0 NZ https://creativecommons.org/licenses/by/4.0/legalcode
   SOURCE: https://data.linz.govt.nz/layer/50772-nz-primary-parcels/



Issue	Date	Description	Des.	Veri.	App.
1	18/06/2021	FOR INFORMATION	CBR		DVB

		Date
Drawn	CBR	17/06/2021
Checked	DVB	18/06/2021
Designed		Date
Verified		Date
Approved	DVB	18/06/2021

orogen
LAND • CIVIL • SPATIAL
Unit 1a - 10 Surrey Street, Tawa
PO Box 56051 - Tawa - Wellington 5249

Client: PAUL MCDONNELL HOMES 2015 LIMITED

Project: TARA IKA
LEVIN
HOROWHENUA DISTRICT

Title: BASE INFORMATION
SITE EXTENT WITH CONTOURS

Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum: WANG2000 | Surveyor: C. Rodgers | Scale: 1:5000m | Original Size: A1

Drawing Number: W21062-00-PL002 | Issue: 1

DATE: 21 June 2021 5:36 PM
Reference Files: W21062-X-00-BOUNDARY_EXTERNAL-01; W21062-X-00-CONTOURS_EXISTING-01

Drawing File: P:_2021\W21062\cad\W21062-00-PL000-BASE-01.dwg

DO NOT SCALE DRAWING 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Appendix D

Orogen Figure 1 - Conceptual stormwater management areas for JML land

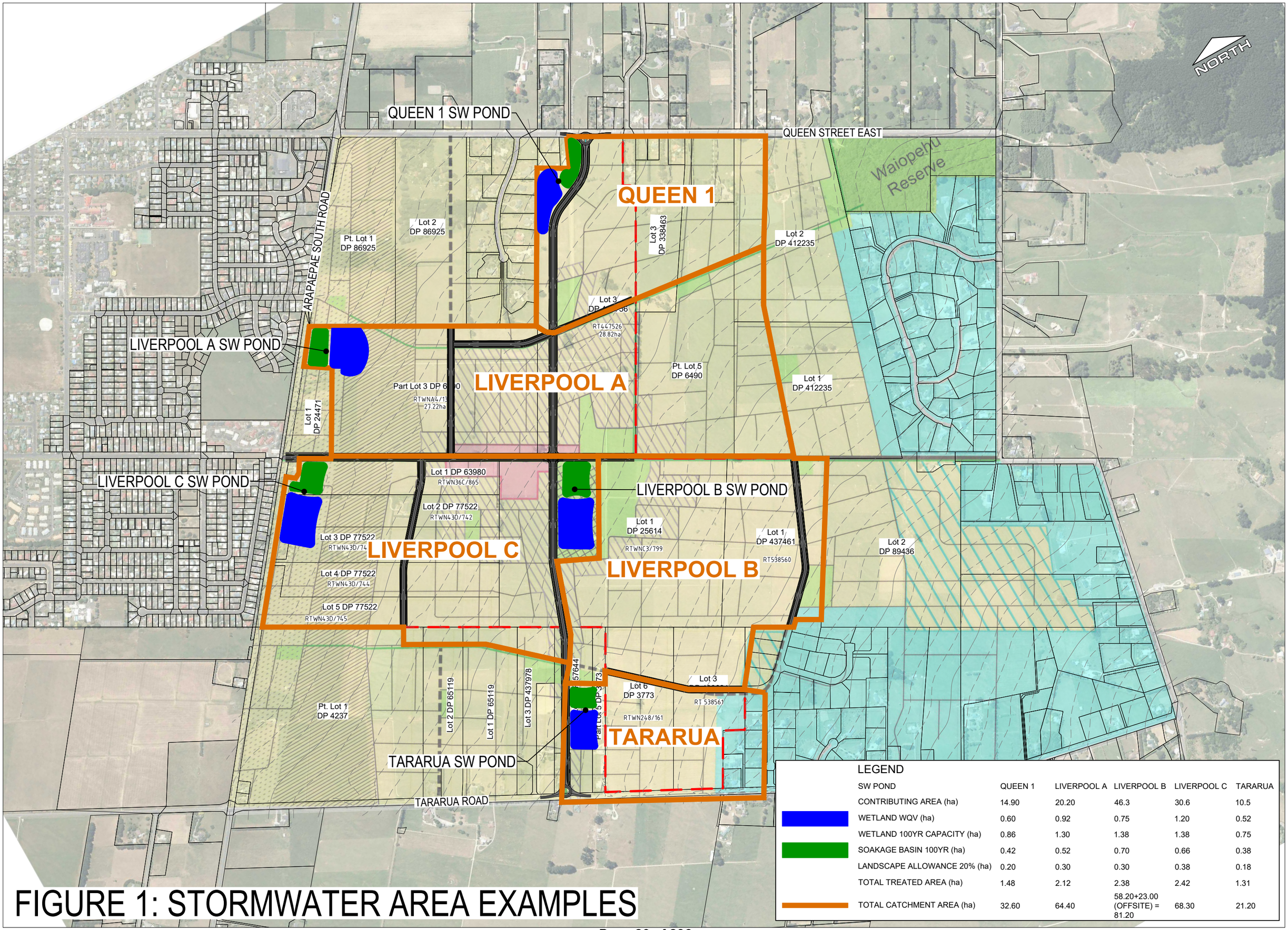


FIGURE 1: STORMWATER AREA EXAMPLES

Submitter 04/31 Redwood Grove Evidence – Planning

BEFORE HOROWHENUA DISTRICT COUNCIL

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	Horowhenua District Council's Proposed Plan Change 4 – Tara-Ika Growth Area

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STATEMENT OF EVIDENCE TOM ANDERSON

ON BEHALF OF THE RESIDENTS OF

11, 20, 21, 22, 26, 27, 32, 37, 39, 42A, 42B, 43 AND 43A REDWOOD GROVE AND 1040, 1046 AND 1052 QUEEN STREET EAST

---

2 November 2021

INCITE

Resource & Environmental Management

P O Box 2058

Wellington

Ph: 04 801-6862

Fax: 04 801-6865

Professional Qualifications and Experience

1. My name is Tom Anderson. I am a Principal Planner at and a Director of Incite, a resource management consulting firm. I hold a Bachelor of Science and a Master of Planning (with Distinction), both from the University of Otago. I am a full member of the New Zealand Planning Institute, am a former Chair of the Wellington Branch Committee of that institute. I am also a member of the Resource Management Law Association. I am an Independent Commissioner, certified under the Ministry for the Environment's *Making Good Decisions* programme.

2. I have 14 years professional experience in a range of Resource Management Act 1991 (RMA) matters, including district and regional consent applications, district and regional plan policy development, notices of requirement, feasibility/strategy studies and iwi/community consultation, as well as Council and Environment Court hearings.

3. In terms of planning policy matters I have been engaged by Council, infrastructure and private landowner clients to provide advice. This includes drafting private and public plan changes (including Section 32 and 42A reports), advising on submissions and providing evidence at hearings. This advice was initially given as an employee of GHD Limited and since 2011 as an employee of Incite.

4. On this basis, I consider myself to have a comprehensive understanding of planning policy matters.

5. For Plan Change 4 to the Horowhenua District Plan (PC4) I was engaged by the residents of 11, 20, 21, 22, 26, 27, 32, 37, 39, 42A, 42B, 43 and 43A Redwood Grove, and 1040, 1046 and 1052 Queen Street East (the Redwood Grove Residents) to provide advice on PC4. This included advising on the drafting of their submission, writing Appendix A to that submission, attending Council pre-hearing meetings, briefing the residents on the Council's Section 42A Report (s42A report), and narrowing the matters that are in contention in this evidence.

6. I have read and am familiar with the Code of Conduct for Expert Witnesses (section 5 of the Environment Court Consolidated Practice Note 2006). My evidence has been prepared in compliance with that code. In particular, unless I state otherwise, this evidence is within my area of expertise and I have not omitted to consider any material facts known to me that might alter or detract from the opinions I express.

Scope of Evidence

7. My evidence is structured into general subject areas as follows:

    - The need for PC4;
    - The Redwood Grove Residents Position;
    - General Comments on the s42A report;
    - Officer Recommendations in Contention; and
    - Final Comments.

8. **Appendix 1** contains a table which summarises the Redwood Grove Residents submission points, the s42A report recommendations on those submission points, and whether I support acceptance of the Officer recommendation or alternative relief as sought through this evidence. As such, the table is intended to provide a succinct 'one stop shop' for the Panel to identify what outcomes the Redwood Grove Residents are seeking from this hearing. The specific items of requested relief are also within my evidence.

The need for PC4

9. Section 3.1 of the s42A report outlines the purpose of PC4, which is to accommodate growth over the period to 2051. The number of additional dwellings forecast as required per year outlined in the s42A report are significant, and clearly require a planning policy change to be enabled. PC4 provides for this growth in largely a greenfield setting. Other options to achieve the identified additional dwelling forecast include densification of existing urban areas.

10. In providing for additional dwellings, PC4 gives rise to a positive social and economic wellbeing effect, through the provision of urban land, which is a finite resource.

Redwood Grove Residents Position

11. The position of the Redwood Grove Residents since I have been engaged by them for PC4 has not changed. They are begrudgingly accepting of the Plan Change but wish to retain as far as possible their existing environment. Their existing environment is described at Paragraph 36 of the s42A report as being *typical Greenbelt Residential character, with section sizes of 5,000m^2 or more*. I agree that this is the general characteristic of the Redwood Grove area.

12. As I understand it, and as is explained in the Redwood Grove Residents submission, through the pre-notification consultation process and on the Tara-Ika Masterplan as notified[1], the existing environment appeared to be retained.

13. Likewise, the zoning on the pre-notification structure plan considered by Council on 11 November 2020[2], shows the Redwood Grove area as being within the Low Density Residential Overlay.

14. However, at notification, the proposed Structure Plan and PC4 Planning Map 30 shows the Redwood Grove Area as zoned Residential.

15. The primary aim of the Redwood Grove Residents submission was to provide for an onsite amenity on their properties akin to what is currently achieved (and what was achieved from the aforementioned as notified masterplan and pre-notification structure plan), whilst allowing greenfield development to occur around them.

16. As you will be aware, the zoning in PC4 has evolved through the submissions process. However fundamentally nothing has changed from notification for the Redwood Grove Residents. They do not want Residential zoning applied to their sites.

General Comments on the s42A Report

17. s42A report was comprehensive and provided appropriate guidance as to why recommendations had been made.

18. Essentially, the reporting officer considers that the Redwood Grove Residents sites are large enough to be able to manage amenity within the sites themselves, and notes that the size of the sites is protected through private covenants which exist on the relevant Records of Title[3].

19. I understand this reasoning, and as such accept the officer recommendations on all submission points, except for submission points 04/31.01 and 04/31.02.

[1] Shown as Figure 3 in the Redwood Grove Residents submission
[2] Shown as Figure 4 in the Redwood Grove Residents submission
[3] A copy of these covenants was included as Appendix B to the Redwood Grove Residents Submission. For completeness, the covenants establish a minimum lot size of 4000m^2 and do not allow for the development of any new roads.

Officer Recommendations in Contention

20. Submission point 04/31.01 sought that the Redwood Grove Properties and neighbouring properties be within the 'low density residential overlay', which would reflect the covenants on the properties, as well as achieve consistency with objectives and policies in PC4.

21. Submission point 04/31.02 sought that the local road connections shown on the structure plan internal to the Redwood Grove Residents properties be removed, and to shift the arterial and collector roads east and west of the Redwood Grove Residents properties, so they are at least 100m away.

22. Essentially, both submission points sought that the zoning on the aforementioned pre-notification structure plan considered by Council on 11 November 2020 be implemented through PC4.

23. The s42A reporting officer rejected both points.

Discussion on Submission Point 04/31.01

24. In regard to submission point 04/31.01, the reporting officer considers that standard residential development in this area would be consistent with anticipated urban form under PC4, and that zoning it residential would achieve the direction set in the relevant PC4 objectives and policies[4]. I do note that the reporting officer considers that *the character of Redwood Grove will likely be different to the rest of Tara-Ika*[5]. In my view this is recognition that regardless of the zoning, the anticipated urban form under PC4 is not going to necessarily be achieved.

25. The as notified version of PC4, the high level urban form proposed in my view was essentially concentric circles of increasing residential density from the edges of the PC4 into the commercial core. This has changed post the submission process to a reducing density to the east only, as outlined in Paragraph 274 of the s42A report.

26. The three images attached as Appendix 2 show the proposed urban form as described above has changed during the course of this process. The blue hash Low Density Residential Overlay has shifted from essentially being the boundary of the PC4 area, to being greatly reduced in extent, and solely being located in the east of the area.

[4] Paragraphs 273 and 274 of the s42A report
[5] Paragraph 272 of the s42A report

27. The as notified version of urban form was unusual in my opinion in that areas within PC4 to the immediate east and west of Redwood Grove were subject to the Low Density Residential Overlay, but Redwood Grove was not.

28. The relief sought through the submission point was to essentially revert the zoning back to what was shown on the pre-notification structure plan considered by Council on 11 November 2020. In my view such a change would provide for the as notified objective and policy direction set under Objectives 6A.1 and 6A.4, and Policies 6A.4.1, 6A.4.2 and 6A.4.3.

29. These objectives and policies, amongst other matters seek that PC4 provides for a range of residential density, section sizes and housing types, while ensuring a high level of amenity.

30. In my opinion, having the Low Density Residential Overlay apply to Redwood Grove would achieve this direction, particularly when considering the reporting officer's view that *the character of Redwood Grove will likely be different to the rest of Tara-Ika*. Having Low Density Residential Overlay apply to Redwood Grove would mean the Plan Change offers part of the range of density, section size and housing types in an area which is more accessible to the proposed core and to the existing services offered in Levin itself.

31. As part of forming this view, I have specifically considered Policy 6A.4.1 which states that PC4 will provide *lower density residential development at the outer edge of Taraika*. In looking at the three iterations of the Low Density Residential Overlay on the Appendix 2 images, I consider that the structure plan as at 11 November 2020 (pre-notification) best achieves Policy 6A.4.1. This version of the structure plan provides lower density residential development around each outer edge of the PC4 area, whereas the s42A version only achieves this at the eastern edge of the area. In my view, the Low Density Residential Overlay being applied particularly to the northern and southern outer edges of the PC4 area will provide for an appropriate transition from the existing rural zoned land that adjoins these boundaries.

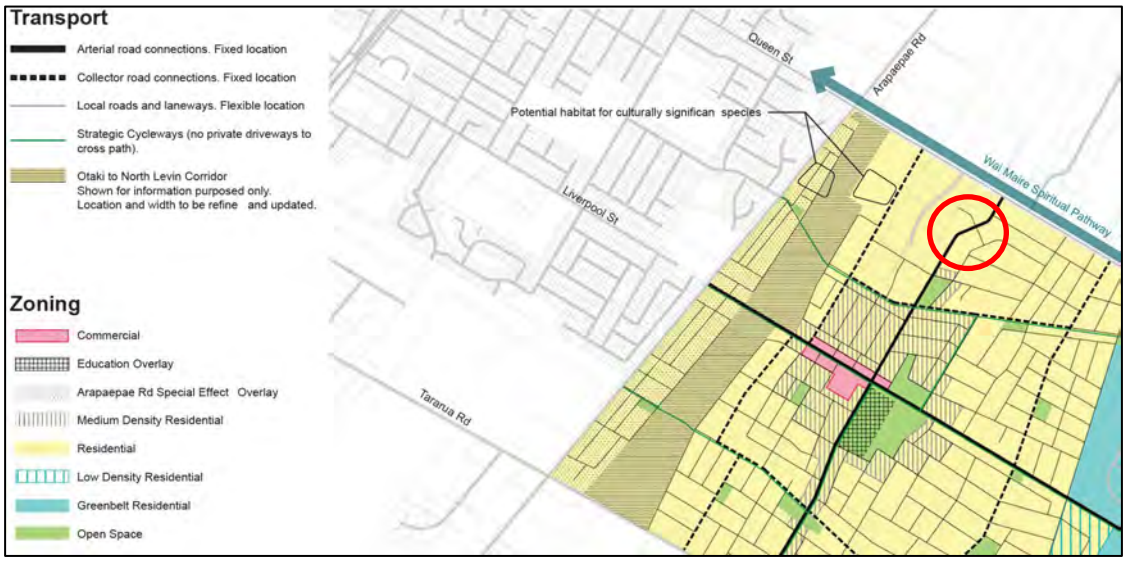
32. I have noted that while some tweaks to Objectives 6A.1 and 6A.4, and Policies 6A.4.1 and 6A.4.2 are recommended through the s42A report[6], the direction outlined above has not fundamentally shifted when compared to what was notified. I continue to consider that these objectives and policies are robust to achieve PC4, and support the tweaks recommended.

[6] No changes to Policy 6A.4.2 as notified are recommended in the s42A report.

Discussion on Submission Point 04/31.01

33. In regard to submission point 04/31.02, the Arterial Road (shown on the structure plan as being to the east of Redwood Grove), the basis for the rejection was that shifting the road would likely necessitate moving the commercial/community centre (zoned commercial), and a consideration that a loss of amenity from the location of the arterial road will be no greater than what is typically observed in urban environments[7].

34. I disagree that shifting the arterial road would necessitate moving the commercial zoned area. The road as shown on the structure plan clearly has a kink as it extends between the existing Queen Street East and the proposed commercial zone. I have circled this in red on the following image, which is taken from the Structure Plan as shown in Appendix 3 to the s42A Report.



35. The kink in the road could simply be moved further south, near the open space shown on the above image, and still link up with the commercial zone. This is what is shown on the pre-notification structure plan dated 11 November 2020.

36. In terms of amenity effects, roads, particularly arterial roads, give rise to noise. Waka Kotahi's *One Network Road Classification* states that arterial roads will have typical daily traffic in urban areas of 5,000 vehicles[8]. Traffic volume is one of a number of factors, including road surface, and traffic composition, which contribute to road noise[9].

[7] Paragraphs 204 to 206 of the s42A report
[8] Page 6 of Waka Kotahi's ONRC Performance Measures – A General Guide. Copy at https://www.nzta.govt.nz/roads-and-rail/road-efficiency-group/projects/onrc
[9] Page 9 of Waka Kotahi's Guide to the management of effects on noise sensitive land use near to the state highway network. Copy at https://www.nzta.govt.nz/resources/effects-on-noise-sensitive-land/

37. PC4 is going to change the current amenity enjoyed by the Redwood Grove Residents. While the resultant visual effects can be somewhat mitigated by the Redwood Grove Residents through on site planting and fencing, the resultant noise from the road is more difficult to determine, particularly given that at this stage of the process, the final location of the arterial road, and its surfacing, are not known. This creates uncertainty for the Redwood Grove Residents.

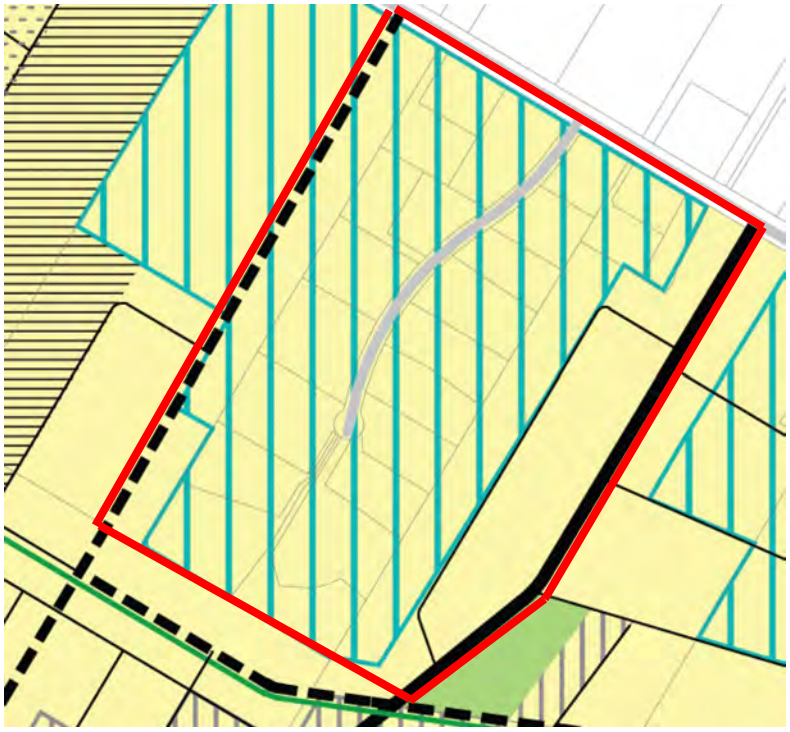
38. In order to provide a degree of certainty to the Redwood Grove Residents, they continue to seek that the arterial road is located as per the pre-notification structure plan dated 11 November 2020.

39. I have also considered the reporting officer's reasoning for rejecting that the collector road on the western side of the Redwood Grove Residents properties should not be moved. A collector road, with a lower volume of traffic will not have a significant effect on amenity. Further I agree that the potential for an adverse effect on the archaeological site to the west, being the homestead located on Prouse Trust Partnership's property, means that such a move of this collector road is not supported.

Requested Relief

40. The requested relief is as follows:

Amend the Structure Plan and Zoning Maps for the Redwood Grove area and its immediate surrounds (being the area bound by the red line in the image below) so that it reflects the structure plan version dated 11 November 2020. This would apply the Low Density Residential Zoning to the Redwood Grove Resident's properties, and result in the arterial road being located further to the east:



41. In considering the above requested relief, I have considered s32AA of the RMA. My assessment under s32AA is as follows:

Reason

The requested relief seeks to provide for the amenity of the existing and future Redwood Grove residents, without unduly impacting on the amenity that PC4 will create for future residents of the entire PC4 area.

How the requested relief achieves the purpose of the Resource Management Act

The requested relief provides for the social and economic wellbeing of the existing Redwood Grove Residents, managing their current physical resource, while allowing for the development of new housing in the surrounding areas.

Benefits including Opportunities for Economic Growth and Employment

There are no benefits to economic growth and employment.

Costs

There are no obvious costs that result from the requested relief, particularly when considering the covenants that are in place, and the reporting officer's opinion (which I agree with) that *the character of Redwood Grove will likely be different to the rest of Tara-Ika*.

Risk of Acting or Not Acting if Information is Uncertain or Insufficient

No risks around uncertain or insufficient information in relation to this matter have been identified.

Efficiency and Effectiveness

The efficiency of the recommended relief is high because the there are no obvious benefits or costs. The effectiveness of the recommended relief is high because they better enable the outcomes sought through the objective and policy direction of PC4.

Other Reasonably Practicable Options for Achieving the Objectives

Another reasonably practicable option is to retain the zoning and structure plan as proposed in the s42A report. This would have the disadvantage of not aligning as well with the objective and policy direction of PC4.

Final Comments

42. Overall, whilst I understand there is a need for an increase in land available for residential development in Levin, I can also understand the views of the Redwood Grove Residents. What is proposed through PC4 significantly changes the amenity that they currently enjoy.

43. I agree that due to the size of the properties, and the covenants that apply to them, the current amenity can be somewhat protected by implementing measures within their sites. However, I also hold the view that applying the Low Density Residential Overlay to this area will give effect to the objective and policy direction that PC4 sets, as it will assist in achieving the range of housing density and section sizes that is a stated outcome of the proposal.

44. I also agree that the National Policy Statement on Urban Development 2020 states that amenity values for people will change over time to meet the changing needs of people. This is what is

occurring at PC4 for the Redwood Grove Residents. However *the maintenance and enhancement of amenity values* remains an other matter for consideration under Section 7(c) in Part 2 of the RMA.

45. What is sought through this evidence, being a simple adjustment to the Structure Plan, will retain some of the existing amenity enjoyed by the Redwood Grove Residents, while still allowing for urban development to occur within the PC4 area to address the identified need for housing that will provide for the amenity of future residents.

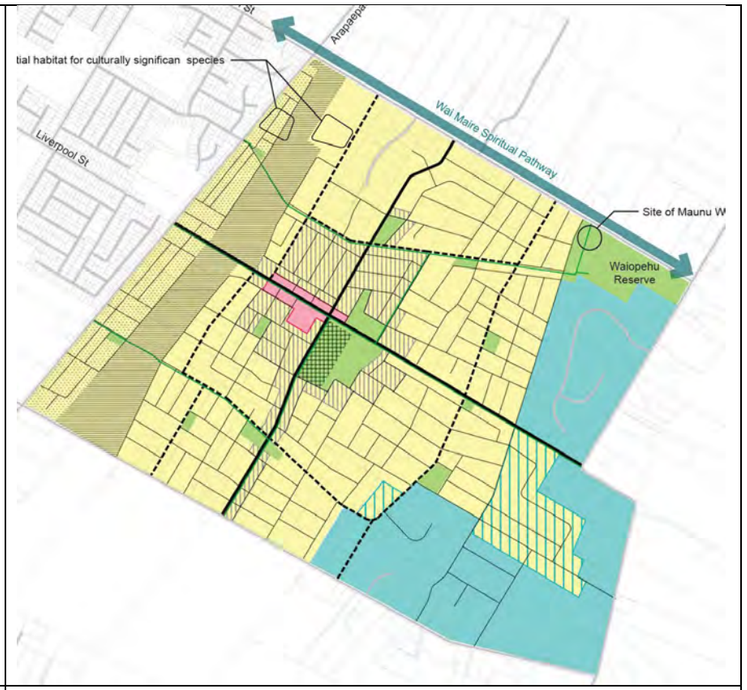
Tom Anderson

2 November 2021

Appendix 1 - Summary of Redwood Grove Residents Submissions Points, Officer Recommendation and Acceptance/Further Relief Sought to PC4

Redwood Grove Residents Submission Number	Submission Topic	Relief sought through submission	Officer Recommendation	Redwood Grove Residents decision sought through Hearing process
04/31.01	*Zoning*	Change rezoning of Redwood Grove properties and properties adjoining Redwood Grove to low density residential.	Reject	Amend the Structure Plan and Zoning Maps for the Redwood Grove area and its immediate surrounds (as shown on the image at Paragraph 40- of my evidence in chief) so that it reflects the structure plan version dated 11 November 2020. This would apply the Low Density Residential Zoning to the Redwood Grove Resident's properties, and result in the arterial road being located further to the east
04/31.02	*Structure Plan*	Remove the local roads connecting Redwood Grove and Tara-Ika and shift the arterial and collector roads east and west of Redwood Grove, so they are at least 100m away.	Reject	
04/31.03	*Infrastructure Servicing*	The submitter is concerned that the proposed infrastructure (including roading, three waters infrastructure, power, telecommunications, and gas) needed to service Tara-Ika will have a negative impact on the current amenity they enjoy.	Reject	Accept Reporting Officer Recommendation (note no relief was sought on this from the submitter, it was a statement that their amenity was going to change).
04/31.04	*Rating*	The submitter is concerned that the proposed rezoning will have a financial impact on Redwood Grove properties, through an increase in rates, given Council does not charge financial or development contributions.	Reject	Accept Reporting Officer Recommendation (note no relief was sought on this from the submitter).
04/31.05	*Commissioners*	The submitter sought that the Plan Change be heard by independent commissioners.	Reject	Accept Reporting Officer Recommendation (note no relief was sought on this from the submitter, it was a process request which has been fulfilled).
04/31.06	*Recognise and protect character of Redwood Grove.*	The submitter requests that in addition to Redwood Grove and adjoining properties being zoned Low Density Residential instead of Standard Residential as proposed, they also be subject to a 'buffer' changing the minimum site size for these properties to 2,000m^2.	Reject	Accept Reporting Officer Recommendation
04/31.07	*Recognise and protect character of Redwood Grove.*	Introduce a screening provision as a matter of discretion for subdivision as follows: 15A.8.1.2 Subdivision (a) Matters of Discretion (xxi) Any subdivision within the Redwood Grove Buffer is to provide screening on the common boundary with any property on Redwood Grove as per the direction detailed on Planning Map 30 (refer to amended map provided by submitter). In order to satisfy this matter of discretion, the application for subdivision must include details of any landscaping or fencing as per the direction detailed on Planning Map 30 and must specify mechanisms for ongoing maintenance and legal protection of any necessary screening.	Reject	Accept Reporting Officer Recommendation

Appendix 2 – Changes to Urban Form of PC4

		
Excerpt from Taraika Structure Plan 013 as considered by Council on 11 November 2020	*Taraika Structure Plan as notified*	*Taraika Structure Plan as per the s42A report*

Submitter 04/34 WKNZTA Evidence - Planning

BEFORE THE HOROWHENUA DISTRICT COUNCIL
INDEPENDENT HEARING PANEL

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	the hearing on the Horowhenua Proposed District Plan Change 4 – Tara-Ika Growth Area

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STATEMENT OF EVIDENCE OF AINSLEY JEAN MCLEOD ON BEHALF OF WAKA KOTAHI NZ TRANSPORT AGENCY

Planning

Dated: 2 November 2021

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INTRODUCTION

1. My full name is Ainsley Jean McLeod. I am a self-employed planner, trading as Ainsley McLeod Consulting. I have been engaged by Waka Kotahi NZ Transport Agency (**Waka Kotahi**) to provide expert technical support in the area of planning in relation to the Horowhenua Proposed District Plan Change 4 – Tara-Ika Growth Area (**Proposed PC4**).

Qualifications and experience

2. I have the following qualifications and experience relevant to this evidence:

   (a) I hold the qualifications of a Bachelor of Arts (Geography and Anthropology) and a Master of Regional and Resource Planning, both from the University of Otago. I am a full member of the New Zealand Planning Institute.

   (b) I have over 20 years' experience in planning practice, primarily as a consultant planner based in Wellington and Christchurch, during which time I have undertaken both consenting, designations and policy planning work. I have provided professional planning advice to a range of clients including central and local government, and the private sector.

   (c) I have particular expertise in respect of infrastructure and network utilities, having provided advice in relation to power transmission, distribution and generation, water and waste, rail and roading, and telecommunications projects. I have acted as an expert witness on a number of occasions before hearings panels, boards of inquiry and the Environment Court.

   (d) More specifically, I have provided expert planning and consultation advice and review to Waka Kotahi in respect of:

      (i) an appeal in respect of proposed plan change to the Proposed Waikato District Plan to provide for a mixed use industrial, commercial and residential development at Ohinewai (2021);

      (ii) the Te Ahu a Turanga: Manawatū Tararua Highway Project (2018 - 2021) (**TAaT**);

      (iii) an appeal in respect of an industrial subdivision and land use development adjacent to State Highway 1 in Marlborough (2017);

(iv) the Christchurch Northern Arterial Project (alongside a similar role advising Christchurch City Council in respect of the Christchurch Northern Arterial Extension) (2013 – 2015);

(v) the Christchurch Southern Motorway 2 and Main South Road Four-Laning Project (2010 – 2013);

(vi) the Christchurch Southern Motorway 1 Project (construction phase, 2009 – 2010);

(vii) the relocation of Transpower New Zealand Limited's transmission lines to enable the Transmission Gully Project (2010 - 2012); and

(viii) the development of district plans, such as the Christchurch Replacement District Plan and the Dunedin Second Generation District Plan, including the preparation of submissions and expert evidence.

3. I am currently assisting Waka Kotahi with the preparation of notices of requirement and applications for resource consents for the Ōtaki to North of Levin Project (**Ō2NL**).

4. I have been asked to provide expert planning evidence in respect of Waka Kotahi's submission and further submissions on Proposed PC4.

5. Having recently provided planning advice in respect of TAaT, and now Ō2NL, I have general familiarity with the planning context of Proposed PC4.

6. I have visited the site that is subject to Proposed PC4 on two occasions in recent months.

Code of conduct

7. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014. This evidence has been prepared in compliance with that Code, as if it were evidence being given in Environment Court proceedings. In particular, unless I state otherwise, this evidence is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Purpose and scope of evidence

8. This evidence:

(a) briefly sets out the statutory matters that are particularly relevant to the consideration of Waka Kotahi's submission and further submissions with reference to the statutory framework for decisions further referred to below;

(b) describes Waka Kotahi's submission and further submissions on the Proposed PC4;

(c) addresses (as relevant to the relief sought by Waka Kotahi) the recommendations made in the 'Horowhenua District Plan Change, Section 42A Report, Proposed Plan Change 4, Tara-Ika Growth Area' dated October 2021 (**Section 42A Report**); and

(d) recommends further amendments to the provisions of Proposed PC4, in addition to those recommendations made in the Section 42A Report.

9. In addition to the Proposed PC4 provisions and the documents referred to above, in preparing this evidence I have also reviewed the following documents insofar as they relate to the relief sought in Waka Kotahi's submissions:

(a) the 'Horowhenua District Plan Change Section 32 Report Proposed Plan Change 4 Taraika Growth Area' dated October 2020 (**Section 32 Report**);

(b) the Horizons Regional Council (**Horizons**) 'One Plan - The Consolidated Regional Policy Statement, Regional Plan and Regional Coastal Plan for the Manawatu-Wanganui Region' (**One Plan**) including updates to August 2018;

(c) the Horizons 'Mahere Waka Whenua ā-rohe Regional Land Transport Plan 2021 – 2031' (**Regional Land Transport Plan**');

(d) submissions and further submissions made by various parties; and

(e) the various pre-hearing meeting reports.

10. For the purpose of my evidence, I rely upon the evidence of:

(a) Dr Stephen Chiles that addresses the management of potential and likely road-traffic noise effects from Ō2NL on the area subject to Proposed PC4 with respect to public health;

(b) Mr Gavin Lister that, from an urban design, landscape, and amenity perspective, considers how Ō2NL has been, or could be, integrated into the planned overall development of the area subject to Proposed PC4;

(c) Dr Jack McConchie that addresses the management of stormwater and associated adverse effects within the areas subject to Proposed PC4, including in respect of integration with Ō2NL, and methods to address those effects; and

(d) Mr Phil Peet, that considers the inter-relationship between Proposed PC4, the current state highway network and Ō2NL and addresses the transport effects associated with Proposed PC4, particularly effects experienced prior to Ō2NL being operational.

11. My analysis and consideration of the matters raised in Waka Kotahi's submissions is informed by the statutory framework for decisions set out in the Resource Management Act 1991 (**RMA**) and the on-going guidance provided by the modified Long Bay test.[1] This statutory framework is generally referred to in the Section 42A Report and I will not repeat it here.

EXECUTIVE SUMMARY

12. Waka Kotahi's submission on Proposed PC4 generally supports the intent of the plan change but expresses concern that the provisions of Proposed PC4 may compromise Waka Kotahi's statutory obligations and have impacts on the state highway network, including SH57 and Ō2NL.

13. Waka Kotahi's submission seeks a range of amendments to the Proposed PC4 provisions to manage effects of, and on, the state highway network and to achieve integration with the transport and stormwater networks associated with the Tara-Ika Multi Zone Precinct.

14. My evidence considers Waka Kotahi's submission along with the recommendations included in the Section 42A Report with reference to the statutory framework for plan making.

15. The state highway network (including Ō2NL) is identified as a physical resource of regional or national importance by RPS Policy 3-1 of the One Plan. As such, the RPS Policies 3-2 and 3-3 apply to the state highway

[1] *Long Bay – Okura Great Park Society v North Shore City Council* EnvC A078/2008, 16 July 2008, at [34], *High Country Rosehip Orchards Ltd v Mackenzie District Council* [2011] NZEnvC 387 and *Colonial Vineyard v Marlborough District Council* [2014] NZEnvC 55.

network (including Ō2NL). These provisions enable, protect and direct the approach to the management of effects of such important infrastructure. Section 75(3) of the RMA requires that Proposed PC4 gives effect to these provisions.

16. It is my evidence that Proposed PC4 does not give effect to the provisions in Chapter 3 of the One Plan because the proposed plan change provisions do not:

    (a) have regard to the benefits of the state highway network (including Ō2NL);

    (b) ensure that the state highway network (including the Ō2NL Corridor) is identified and development that would adverse affect the operation, maintenance and upgrading of these resources is avoided as far as reasonably practicable;

    (c) ensure effective integration of transport or land use planning; or

    (d) protect the function of the strategic road network.

17. Relying in part on the expert evidence on behalf of Waka Kotahi, my evidence sets out a range of amendments that are necessary to give effect to the provisions of Chapter 3 of the One Plan, and the NPSUD directions that:

    (a) planning decisions contribute to well-functioning urban environments; and

    (b) local authorities engage with providers of development infrastructure and additional infrastructure to achieve integrated land use and infrastructure planning.

18. Subject to limited further amendments, the provisions I support also more effectively implement Proposed PC4 Objective 6A.1.

19. The amendments set out in **Attachment A** to my evidence:

    (a) amend the objectives and policies to address actual and potential adverse effects of, and from the state highway network (including Ō2NL);

    (b) replace the Arapaepae Road Special Treatment Overlay with a State Highway Overlay that takes in an area measure from the Ō2NL Corridor;

(c) include a new controlled activity rule for development in the State Highway Overlay, with accompanying standards to enable development to be designed in a manner that manages adverse effects, does not compromise the state highway network and results in a higher quality urban environment in the future; and

(d) makes use of range of other assessment and management planning tools to address potential adverse effects including effects on the safety and efficiency of the transport network and the potential effects of stormwater discharges.

20. My evidence concludes that these amendments are necessary and the most appropriate (in terms of the requirements of section 32 of the RMA) to give effect to the relevant provisions of the NPSUD and One Plan and achieve the purpose of the RMA, including by enable people and communities to provide for their social, economic and cultural well-being and their health and safety.

RELEVANT STATUTORY PROVISIONS

21. The Section 32 Report and Section 42A Report both include a commentary in respect of the statutory provisions that are relevant to considering Proposed PC4, and particularly the provisions of higher order documents that must be given effect to. I do not repeat these provisions here except to note that, in the context of Waka Kotahi's submission, the following are particularly relevant:

(a) Policy 1 of the National Policy Statement on Urban Development (**NPSUD**) that requires that *"planning decisions contribute to well-functioning urban environments"* that have a range of attributes including *"good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport"*; and

(b) Regional Policy Statement (**RPS**) Policy 3-4 of the One Plan that requires territorial authorities to "*proactively develop and implement appropriate land use strategies to manage urban growth, and they should align their infrastructure asset management planning with those strategies, to ensure the efficient and effective provision of associated infrastructure*."

22. In addition to the provisions set out above, I consider that there are further RPS provisions of the One Plan that are not listed in, or considered in, the

Section 32 Report and Section 42 Report that are relevant to determining the Proposed PC4. These are:

(a) Objective 3-1 that requires that regard be had "*to the benefits of infrastructure and other physical resources of regional or national importance by recognising and providing for their establishment, operation, maintenance and upgrading*".

(b) Policy 3-1 that requires territorial authorities to recognise the road and rail networks as mapped in the Regional Land Transport Strategy as being physical resources of regional or national importance and, in relation to the establishment, operation, maintenance, or upgrading of infrastructure and other physical resources of regional or national importance, have regard to the benefits derived from those activities.

(c) Policy 3-2 that requires territorial authorities to "*ensure that adverse effects on infrastructure and other physical resources of regional or national importance from other activities are avoided as far as reasonably practicable, including by using the following mechanisms:*

a. ensuring that current infrastructure, infrastructure corridors and other physical resources of regional or national importance, are identified and had regard to in all resource management decision-making, and any development that would adversely affect the operation, maintenance or upgrading of those activities is avoided as far as reasonably practicable,

b. ensuring that any new activities that would adversely affect the operation, maintenance or upgrading of infrastructure and other physical resources of regional or national importance are not located near existing such resources or such resources allowed by unimplemented resource consents or other RMA authorisations,

c. ensuring that there is no change to existing activities that increases their incompatibility with existing infrastructure and other physical resources of regional or national importance, or such resources allowed by unimplemented resource consents or other RMA authorisations,

…

h. ensuring effective integration of transport and land use planning and protecting the function of the strategic road and rail network as mapped in the Regional Land Transport Strategy."

(d) Policy 3-3 that requires territorial authorities, in managing any adverse environmental effects arising from the establishment, operation, maintenance and upgrading of infrastructure or other physical resources of regional or national importance, to:

"a. recognise and provide for the operation, maintenance and upgrading of all such activities once they have been established,

b. allow minor adverse effects arising from the establishment of new infrastructure and physical resources of regional or national importance, and

c. avoid, remedy or mitigate more than minor adverse effects arising from the establishment of new infrastructure and other physical resources of regional or national importance, taking into account:

i. the need for the infrastructure or other physical resources of regional or national importance,

ii. any functional, operational or technical constraints that require infrastructure or other physical resources of regional or national importance to be located or designed in the manner proposed,

iii. whether there are any reasonably practicable alternative locations or designs, and

iv. whether any more than minor adverse effects that cannot be adequately avoided, remedied or mitigated by services or works can be appropriately offset, including through the use of financial contributions."

23. Ō2NL is mapped in the Regional Land Transport Plan[2] and identified as a 'significant activity' and the second priority for the Manawatū Whanganui Region. Therefore, for the purpose of Policy 3-1 and Policy 3-2, Ō2NL can be considered a physical resource of regional or national importance and the enablement and protection provided by these RPS policies extends to

[2] I have confirmed with Horizons that the Regional Land Transport Plan should be understood to be the Regional Land Transport Strategy in policies 3-1 and 3-2.

Ō2NL. That is, section 75(3) of the RMA requires Proposed PC4 to give effect to RPS Policy 3-1 and RPS Policy 3-2 by:

(a) having regard to the benefits derived from the establishment, operation, maintenance, or upgrading of Ō2NL;

(b) ensuring that the Ō2NL corridor is identified and had regard to in all resource management decision-making;

(c) ensuring that adverse effects on Ō2NL from other activities are avoided as far as reasonably practicable; and

(d) ensuring effective integration of transport and land use planning and protecting the function of Ō2NL.

24. The requirement to "give effect to" is a strong statutory directive compared to other directives in the RMA and was interpreted in the *EDS* v *New Zealand King Salmon* Supreme Court case as meaning "to implement" [3].

25. In this regard, it is important to note the difference between plan-making and a resource consent process. The Section 42A Report generally expresses a view that Ō2NL is too uncertain, has no (or limited) legal weight – in part because no notice of requirement for a designation has been given for the Project. I consider that this approach is in effect applying a consenting process 'existing environment' test and does not reflect the statutory framework for plan making.

26. Conversely, and by way of example, RPS Policy 3-1 demonstrates that the provisions of RMA policies and plans can, and should, anticipate the future. In terms of the transport network, Policy 3-1 provides a clear direction that where a strategically important future road is identified it should be afforded the enablement, protection and management approaches of Policies 3-2 and 3-3.

27. It is my evidence that, in order to give effect to, and therefore implement, RPS Policies 3-1, 3-2 and 3-3 in the One Plan, amendments to the provisions of Proposed PC4 are necessary. These amendments are introduced later in my evidence and set out in **Attachment A**. In summary, the amendments I support:

[3] *Environmental Defence Society Incorporated* v *The New Zealand King Salmon Company Limited*, NZSC 38, 17 April.

(a) amend the objectives and policies to address actual and potential adverse effects of, and from the state highway network (including Ō2NL);

(b) replace the Arapaepae Road Special Treatment Overlay with a State Highway Overlay that takes in an area measure from the Ō2NL Corridor (as that Corridor is shown in Proposed PC4);

(c) include a new controlled activity rule for development in the State Highway Overlay, with accompanying standards to enable development to be designed in a manner that manages adverse effects, does not compromise the state highway network and results in a higher quality urban environment in the future; and

(d) make use of a range of other assessment and management planning tools to address potential adverse effects, including effects on the safety and efficiency of the transport network and the potential effects of stormwater discharges.

THE STATE HIGHWAY NETWORK AND PROPOSED PC4

28. In terms of planning context, the presence of an existing state highway and the need to upgrade that corridor has been anticipated for some time. The operative Horowhenua District Plan (**Operative District Plan**):

(a) identifies the presence of State Highway 57 (SH57) and shows that route as being subject to designation D4 in favour of Waka Kotahi for the purpose of 'State Highway 57 - To undertake maintenance, operation and use of, and improvement of a State Highway'; and

(b) includes Structure Plan 13 that applies to the area subject to Proposed PC4 and shows a 'transport corridor for future upgrades' immediately adjacent to SH57.

29. Proposed PC4 replaces Structure Plan 13 and, as notified, this Structure Plan maps the Ō2NL Corridor and an 'Arapaepae Rd Special Effects Overlay'. Proposed PC4 includes provisions that regulate activities within the Arapaepae Rd Special Treatment Overlay (Rule 15A.3.2), but not in the Ō2NL Corridor.

30. The Section 32 Report includes the following commentary in relation to Ō2NL:

"The preferred corridor for the O2NL highway is located within the development area, running almost parallel to State Highway 57 near the western extent of the development area. Early on in the Taraika Master Plan process described in Section 2.3 of this report, Waka Kotahi New Zealand Transport Agency (WKNZTA) were considering four different options for the O2NL. The selection of a preferred corridor, being the N4 corridor which runs almost parallel to Arapaepae Road/State Highway 57 through Taraika, has enabled planning to move forward. However, it has the potential to have a relatively significant impact on Taraika given that the identified corridor it is currently 300m in width and passes through the development area.

At the time of writing this report, WKNZTA had an identified 80-100m 'technically preferred alignment' within this 300m corridor and were undertaking community engagement on this. However, WKNZTA have yet to make any decisions about the alignment. WKNZTA have advised they will not make any such decisions until the end of 2021. WKNZTA expect to lodge the required resource consents and notice of requirement applications in 2022 . The exact nature and scale of effects cannot be determined until the final alignment has been selected and decisions made regarding matters such as road height and surfacing material, interchange locations, and local road connections.

Given the amount of uncertainty regarding the detail of O2NL, and that in the absence of any notice of requirements/consent applications or decisions the project has limited legal status, the highway does not feature strongly in Proposed PC4 as it is considered neither fair, reasonable, nor justifiable to impose associated restrictions at this juncture. As such, the Structure Plan that forms part of the plan change shows the O2NL corridor as an overlay, but with no specific accompanying rules associated.

Despite the above, it is very important that the highway and development in Taraika progress in a manner that results in a good outcome for both. For this reason, HDC have been working closely with WKNZTA to ensure they are aware of the plans for Taraika and plan on the basis that the proposed O2NL highway will pass through an urban development. WKNZTA have indicated their support for Taraika to HDC officers."

31. It is my observation that the conclusions reached, and rationale given, in the Section 32 Report underpin the planning response to Ō2NL in Proposed PC4

and the subsequent Section 42A Report. In my opinion these Section 32 Report conclusions are flawed because the Section 32 Report:

(a) acknowledges that the Operative District Plan anticipates a transport corridor for future upgrades in a similar location to the Ō2NL corridor, but fails to propose meaningful provisions to address the Ō2NL corridor;

(b) fails to acknowledge the statutory recognition of Ō2NL as a physical resource of regional or national importance in terms of RPS Policy 3-1, and concludes that the project has limited legal status; and

(c) inappropriately appears to apply an 'existing environment' type of test by suggesting that a notice of requirement for Ō2NL must be given before it can be taken into account in the Proposed PC4 provisions in any meaningful way, as opposed to applying the statutory framework for plan making.

32. On this basis, it is my view that the failures in the Section 32 Report may direct an outcome that:

(a) does not give effect to the higher order provisions; and

(b) is not the most appropriate way to achieve the purpose of the RMA.

WAKA KOTAHI'S SUBMISSION AND FURTHER SUBMISSIONS

33. Waka Kotahi's submission on Proposed PC4 generally supports the intent of the plan change but notes that the Proposed PC4 provisions may compromise Waka Kotahi's statutory obligations have impacts on SH57 and Ō2NL. Waka Kotahi's submission seeks:

(a) the extension of low-density residential zoning along the length of SH57 and the Ō2NL Corridor and 100 metres either side;

(b) further information and an integrated traffic assessment to respond to traffic impacts of development facilitated by the Proposed PC4;

(c) strengthened provision for open space and the north-south, east-west corridors;

(d) a range of transport related amenity improvements;

(e) additional provisions to manage adverse effects of road traffic noise;

(f) conversations in respect of the revocation of SH57;

(g) discussions in respect of integrated stormwater management and the avoidance of runoff entering the state highway network;

(h) standards to regulate signs that are visible from the state highways; and

(i) rules to limit state highway access for commercial activities.

34. Waka Kotahi's further submissions oppose in general terms the outcomes sought in a number of submissions on the basis that the outcomes would be inconsistent with Waka Kotahi's submission and seeks that the submissions be rejected in part. These submissions are:

(a) Phillipa and Pasanka Wickremasinghe (submission reference 04/09);

(b) Helen Olive Brown and Kelvin Shane MacPherson (submission reference 04/10);

(c) John William Brown and Jeny Doreen Brown (submission reference 04/11);

(d) Gwyneth Schibli (submission reference 04/15);

(e) Jennings Family Trust (submission reference 04/18);

(f) Julia Burgess (submission reference 04/20);

(g) Gill Morgan (submission reference 04/22);

(h) Kevin Daly (submission reference 04/23);

(i) Landlink Limited (submission reference 04/24);

(j) Horowhenua District Council officers (submission reference 04/25);

(k) James McDonnell Limited (submission reference 04/27); and

(l) Truebridge Associates Limited (submission reference 04/33);

35. On the basis that Waka Kotahi's further submission is confined to the extent to which the submission is consistent with Waka Kotahi's primary submission, I do not address the further submission in any detail below and instead directly address the relief sought by Waka Kotahi.

36. The remainder of my evidence addresses the matters raised in Waka Kotahi's submission. My evidence is generally structured to address each submission point as summarised (and coded) in the notified summary of submissions.

37. Where amendments to the provisions of Proposed PC4 are suggested in, and supported by, my evidence, these amendments are shown in blue underlined and ~~blue strikethrough~~ and are consolidated as **Attachment A** to my evidence.

ZONING IN THE VICINITY OF SH57 AND THE Ō2NL CORRIDOR

38. Waka Kotahi's submission seeks that the Low Density Residential Zone is applied to land in the vicinity of SH57 and the Ō2NL Corridor *"to ensure the anticipated amenity for residential dwellings is provided"*.[4]

39. Waka Kotahi's submission is opposed by the further submissions made by Truebridge Associates Limited,[5] Prouse Trust Partnership[6] and Kevin Daly[7].

40. In response, the Section 42A Report recommends that the submission be accepted in part and notes, with references to pre-hearing meetings, that:

> *"599. As a result of these discussions, WKNZTA advised they wished to amend their submission as follows:*
>
> > *"Waka Kotahi no longer wish to proceed with that part of the Waka Kotahi submission that requested a change in zoning for the indicative O2NL corridor or that looked to restrict development rights within the indicative O2NL corridor. The management of activities within the O2NL corridor will be addressed through the separate designation and approval process for the corridor. It is expected that the Notice of Requirement for the O2NL corridor will be lodged with the councils mid-2022."*
>
> *600. Other aspects of WKNZTA submission, including the request for additional reverse sensitivity provisions in relation to state highways and additional provisions to control signage visible from state highways remain. These aspects are considered elsewhere in this report."*

41. Based on the advice given by Waka Kotahi, I do not consider amendments to zoning further here. I address all other matters raised in Waka Kotahi's submission in the remainder of my evidence.

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[4] Submission reference 04/34.02. The submission summary for submission point 04/34.02 makes reference to zoning adjacent to the Ō2NL Corridor but does not address the zoning of land adjacent to SH57.
[5] Further submission reference FS04/22.13.
[6] Further submission references FS04/35.01, FS04/35.03 and FS04/35.04.
[7] Further submission reference FS04/94.03.

TRAFFIC IMPACTS

42. Waka Kotahi's submission identifies that the development of Tara-Ika will result in increased traffic on SH57 and increased east-west movements across SH57 that will impact on the safety and efficiency of the state highway network. The submission notes that Proposed PC4 has not been subject to an Integrated Traffic Assessment (**ITA**) and seeks the preparation of an ITA to assess the traffic effects that will result from the plan change ongoing conversations with the Council.[8]

43. The Section 42A Report recommends that the submission points be rejected and comments as follows:

"An ITA report has been prepared to support the plan change. The ITA will assist WKNZTA with its road improvement planning. In addition, upgrades to the Queen St/SH57 intersection is currently underway. …

An ITA has been prepared since WKNZTA's submission was lodged. The traffic crossing SH57 has been considered as part of the ITA. As noted earlier, the ITA concludes that this connection to SH57 is desirable, but is not critical. Other mitigation options include a left-in/left-out on the east-west link into Tara-Ika. As this connection is outside the plan change area however, this option may be investigated after the plan change and once the final design of the O2NL is known. No further changes are therefore recommended at this stage."[9]

44. In his evidence, Mr Peet considers the safety, efficiency and connectivity impacts on the state highway network of the development facilitated by Proposed PC4, including with reference to the ITA provided as Appendix 11 to the Section 42A Report.

45. Mr Peet's evidence concludes, when compared to the existing situation, that:

(a) Ō2NL can accommodate the traffic that will result from the development facilitated by Proposed PC4; but

(b) if substantial development occurs without, or in advance of, Ō2NL (or other mitigation measures), this development will result in the following significant traffic impacts:

[8] Submission references 04/34.03 and 04/34.07.
[9] Section 42A Report, paragraph 698.

(i) safety and level of service impacts as a result of delays on side road approaching State Highway 1 (**SH1**) and SH57; and

(ii) safety impacts, particularly for vulnerable road users, as a result of increased traffic on SH1 in central Levin.

46. Based on Mr Peet's conclusions, I consider that Proposed PC4 (and the development that the plan change facilitates) has the potential to have an adverse effect on the state highway network (including Ō2NL). RPS Policy 3-2 directs territorial authorities to ensure:

(a) that development that would adversely affect the operation, maintenance or upgrading of infrastructure corridors and other physical resources of regional or national importance is avoided as far as reasonably practicable; and

(b) effective integration of transport and land use planning and protecting the function of the state highway network including Ō2NL.

47. In response to Mr Peet's conclusions, and to give effect to RPS Policy 3-2, I have drafted the following amendments (set out in full in **Attachment A**) to the Proposed PC4 provisions:

(a) an amendment to Issue 6A.1 to recognise the importance of planned and existing state highways;

(b) amendments to Objective 6A.1 to seek a safe and efficient transport network as an outcome of Proposed PC4, including by managing effects on the state highway network (including Ō2NL);

(c) the inclusion of an additional clause in Policy 6A.1.1 to ensure that the state highway network (including Ō2NL) that is not consistent with Structure Plan 013 is not compromised by development in Tara-Ika;

(d) amendments to Policy 6A.1.7 to introduce a State Highway Overlay for the purposes of managing adverse effects of and on the state highway network (including Ō2NL);

(e) amendments to Policy 6A.2.2 to provide for development to be coordinated with the provision of, and upgrading to, infrastructure networks so that the state highway network is not compromised; and

(f) amendments to the Matters of Discretion in Rule 15A.8.2.2 to allow a consideration of the impacts on the state highway network particularly in respect of safety and level of service.

48. When considered as part of the Proposed PC4 provisions as a whole, it is my opinion that these amendments:

(a) are necessary to give effect to the provisions in Chapter 3 of the One Plan, and in particularly Policies 3-1, 3-2 and 3-4;

(b) in respect of Objective 6A.1, are the most appropriate way to achieve the purpose of the RMA by better (when compared to the notified and Section 42A Report provisions) protecting the state highway network as a nationally important physical resource and by enabling people and communities to provide for their safety; and

(c) are the most efficient and effective means to achieve Objective 6A.1.

AMENITY EFFECTS

49. Waka Kotahi's submission seeks to work with the Council to facilitate the development of urban form and connections to create safe and healthy streets through a combination of solutions.[10] This submission is supported in part by the further submission made by the Prouse Trust Partnership.[11]

50. The Section 42A Report recommends that this submission be rejected and comments that *"the exact road design and treatments will be determined at consent stage".*[12]

51. I generally agree with the Section 42A Report recommendation and particularly note that the Council has reserved broad discretion to consider the provision of roading and access as part of future resource consent processes. I also acknowledge that the quality of the urban environment is further guided in future consent processes by the policy framework, including Policy 6A.1.5 that requires subdivision to, amongst other matters, provide a high level of safety and amenity and to contribute positively to the public realm.

[10] Submission reference 04/34.05.
[11] Further submission reference FS04/35.02.
[12] Section 42A Report, paragraph 698.

OPEN SPACE

52. Waka Kotahi's submission seeks that the north-south and east-west corridors function should be strengthened in Proposed PC4 *"as part of discretionary matters to ensure that these open spaces provide connection to the multi modal infrastructure to be provided".*[13]

53. The Section 42A Report recommends that the submission be accepted in part and states:

"*The submitter later clarified that this statement was intended to support walking and cycling connections from the plan change area into Levin and sought for this to be achieved though subdivision matters of discretion*. …

The subdivision matters of discretion already make reference to the provision of public open space as well as new roads (which require footpaths) and cycleways. This, combined with the direction given by the Structure Plan, provides direction to developers on these matters, while still allowing for detailed design to occur at subdivision stage. I consider this approach effective and efficient at guiding provision of open space and walking/cycling infrastructure."[14]

54. I have reviewed the various matters of discretion that would be relevant to applications for subdivision consent within the zones that make up the Tara-Ika Multi Zone Precinct and acknowledge that these 'matters' include the ability for decision-makers to generally consider access and the provision of public open space. On this basis I agree with the conclusion reached in the Section 42A Report.

55. That said, I note that the Matters of Discretion for subdivision in the Residential Zones (Rule 15A.8.2.2) do not make explicit reference to the provision of footpaths, which is included in the similar provisions that applies in other zones. I suggest this is an oversight, and as such propose the following amendment to Rule 15A.8.2.2(a)(vi):

"~~(viii)~~(vi) The provision of access, any new roads, cycleways, footpaths and provision of linkages to existing roads~~, access over or under railway lines, the diversion of alteration of any existing roads, the provision of access, passing bays, parking and manoeuvring areas, and any necessary easements~~."

[13] Submission reference 04/34.04.
[14] Section 42A Report, paragraphs 311 and 318.

DEVELOPMENT STAGING

56. Waka Kotahi's submission seeks that the staging of development aligns with the Waka Kotahi Safe Networks Programme and the Ō2NL programme and seeks that the Council should reserve the ability to decline applications for subdivision consent where the state highway does not have the capacity for additional vehicle movements.[15]

57. The Section 42A Report does not directly address the potential for staging in respect of Waka Kotahi's submission and recommends that the submission be rejected for the following reasons:

" … In response, subdivision is already a Restricted Discretionary activity in the plan change area. Traffic effects are included as a matter of discretion, which would allow subdivisions to be assessed on a case-by-case basis. If there are significant traffic effects or conflicts, the activity status provides for the application to be declined. It is also noted however, WKNZTA still has a responsibility to provide a safe and efficient state highway network for users."[16]

58. In terms of staging, Mr Peet concludes that better staging of land use and transport infrastructure is needed to ensure a unified transport network that serves the district well.

59. In my opinion the matter of staging is traversed, to some extent, by Policy 6A.2.2 which directs coordination and alignment of development with infrastructure provision. In response to Mr Peet's evidence (and as addressed more fully earlier in my evidence), I have recommended amendments to this Policy to:

(a) ensure that the policy also applies to the state highway network and infrastructure outside of Tara-Ika; and

(b) to clarify the two-fold reason for achieving coordination and alignment, being to ensure infrastructure is not compromised by development and to provide adequate infrastructure to support development (consistent with Policy 10 of the NPSUD).

60. The amendments I propose to Policy 6A.2.2 are as follows:

"*Require subdivision and development to be managed, designed and staged to align with the coordinated provision and upgrading of ~~the~~*

[15] Submission reference 04/34.08.
[16] Section 42A Report, paragraph 698.

*infrastructure network*s *(including* local road and state highway ~~roading~~ *network*s*), public open space, streetscape and local service facilities* ~~within the Taraika Tara-Ika~~, including *as illustrated on Structure Plan 013*, so that:

- the safety, efficiency and effectiveness of infrastructure networks (including state highways) is not compromised; and
- the development of Tara-Ika is supported by the adequate provision of infrastructure networks, public open space, streetscape and local service facilities."

61. In terms of Council's ability to refuse an application for resource consent, I agree with the conclusion in the Section 42A Report and I acknowledge that subdivision is a restricted discretionary activity and that this means Council has the ability to refuse the application. I also acknowledge that Proposed PC4 includes relatively broad matters of discretion that allow a consideration of traffic effects. I therefore do not suggest any amendments to the Proposed PC4 provisions in this regard.

62. That said, as set out earlier in my evidence, in response to Mr Peet's description of potential traffic impacts that may arise in the absence of Ō2NL, I have suggested amendments to the Matters of Discretion in 15A.8.2.2 to explicitly direct a consideration of those impacts.

REVOCATION OF STATE HIGHWAY STATUS

63. Waka Kotahi's submission notes that parts of existing SH1 and SH57 may be revoked once Ō2NL is constructed (and is operating). The submission seeks that regard be given to revocation in respect of development in areas between the existing state highways and the Ō2NL Corridor; how access to these areas is achieved; and how east-west connections are provided. The submission goes on to also seek that conversations occur ensure integrated design of the roading network.[17]

64. The Section 42A Report comments as follows:

"I acknowledge Submitter 04/34's comments about the likelihood of State Highway 57 being revoked once O2NL is complete and agree that it will be important for Council and WKNZTA to work together on this process. However, this is subject to a separate process and relates to land that is outside of the plan change area. Therefore, I do not consider it necessary

[17] Submission reference 04/34.09.

or appropriate to make any changes to the plan change in relation to this matter."[18]

65. I agree with the Section 42A Report to the extent that it is not necessary to amend the plan change in anticipation of a future revocation process. I reach this conclusion because:

    (a) revocation is a process to remove the status of a road as 'state highway', under section 103 of the Land Transport Management Act 2003 (**LTMA**), in *response to* network changes, as opposed to revocation *causing* network changes; and

    (b) section 103(8) of the LTMA includes a direction for consultation with territorial authorities as part of the revocation process and therefore the 'conversations' sought by Waka Kotahi will occur as a statutory requirement in any case.

STORMWATER TREATMENT AND MANAGEMENT

66. Waka Kotahi's submission notes that poorly designed developments in the vicinity of state highways can result in runoff giving rise to additional loading on the highways' stormwater management and treatment system and flooding of those highways. Waka Kotahi's submission supports the requirement for stormwater to be retained within sites and seeks ongoing discussions with the Council and developers in respect to the management of stormwater and the mitigation of effects on the state highway network.[19]

67. Waka Kotahi's submission is opposed in part by the further submission made by Truebridge Associates Limited (jointly on behalf of Brendan McDonnell). The further submission seeks "*that the council continue to work with NZTA to [develop] an emergency stormwater wetland adjacent to the new road to protect the area against any type of flooding …"*[20]

68. The Council's Infrastructure Development Group's further submission includes a detailed commentary in respect of how stormwater treatment and management may be achieved alongside Ō2NL. The further submission seeks to achieve an efficient and pragmatic technical solution for stormwater treatment and disposal that fits with both PC4 and Ō2NL. The further submission seeks to introduce a 'Stormwater Purposes' special zone

[18] Section 42A Report, paragraph 606.
[19] Submission reference 04/34.10.
[20] Further submission reference FS04/22.14.

for areas shown on an attached drawing or other similar change to effectively manage stormwater.[21]

69. Waka Kotahi's submission is supported by the further submission made by Horizons. The further submission expresses concern that attenuation areas within the Ō2NL corridor cannot be considered within the Council's stormwater management framework and seeks that PC4 be amended to address the issues raised in relation to management of effects generated by development.[22]

70. The Section 42A Report acknowledges that dialogue between the Council and Waka Kotahi is on-going, as sought in Waka Kotahi's submission, but identifies differing project timeframes as a constraint to achieving a shared approach to stormwater treatment and management.[23] The Section 42A Report (with reference to the technical material and evidence included as Appendix 9 and Appendix 10 to that Report) concludes that:

"… I consider inclusion of 'outcome based' stormwater provisions to be an appropriate means of securing the quality outcome sought, while also allowing sufficient flexibility. These provisions have been drafted in conjunction with Council's stormwater advisor ... I recommend these apply to all restricted discretionary activities as this will capture subdivision, medium density development, integrated residential development, and new commercial buildings (all activities that have the potential to generate stormwater effects, if not appropriately managed). ..."[24]

71. In his evidence, Dr McConchie concludes that it is critical that a holistic stormwater management plan be developed by both Waka Kotahi and the Council to prevent future issues. Dr McConchie goes on to acknowledge that the relative timing of Proposed PC4 and Ō2NL means that a precise plan cannot yet be developed. In the interim, he suggests that Proposed PC4 includes provisions that require stormwater to be addressed as part of development proposals within the PC4 area and supports the general intent of amendments to the Proposed PC4 provisions recommended in the Section 42A Report.

72. I acknowledge the challenge presented by the differing timeframes of Proposed PC4 and Ō2NL. I consider that the general Section 42A Report approach of amending the provisions to require a stormwater management

[21] Further submission reference FS04/27.
[22] Further submission reference FS04/23.03.
[23] Section 42A Report, paragraph 495.
[24] Section 42A Report, paragraph 503.

plan as a condition applying to any restricted discretionary activity enables a thorough consideration of the potential adverse effects of stormwater discharges (and particularly the methods to avoid or mitigate the adverse effects) at the time a development or subdivision is proposed.

73. That said, I am of the view that further amendments to the provisions proposed in the Section 42A Report are necessary to more directly respond to the matters raised in Waka Kotahi's submission and to give effect to:

    (a) Policy 10(b) of the NPSUD by achieving integrated land use and infrastructure planning;

    (b) RPS Policy 3-2 of the One Plan by ensuring that adverse effects on Ō2NL (being a physical resource of regional or national importance) from other activities are avoided as far as reasonably practicable; and

    (c) RPS Policy 3-4 of the One Plan by proactively (within the noted constraints) implementing strategies to manage urban growth that align with asset management planning and ensure the efficient and effective provision of associated infrastructure.

74. To this end, the amendments to Proposed PC4 that I support, set out in Attachment A, are as follows:

    (a) the inclusion of an additional clause in Policy 6A.3.1 to provide clear direction that stormwater management should be aligned with the management of stormwater from state highways and not have an adverse effect on the development, operation, maintenance or upgrading of the state highway network;

    (b) consistent with the approach suggested in the submission made by the Council's Infrastructure Development Group, the inclusion of an additional clause in Policy 6A.3.2 to ensure that the Ō2NL Corridor is not relied on the for the disposal of stormwater from the development of Tara-Ika, except where integrated with the management of stormwater from Ō2NL;

    (c) the inclusion of explicit mention of the exacerbation of the existing flooding hazard in the Matters of Control (proposed Rule 15A.7.1.1) for

development in the 'State Highway Overlay' and Matters of Discretion (Rule 15A.8.2.1) for subdivision in the Residential Zones;[25]

(d) an amendment to Rule 15A.8.1.1 (Clause A) to make the standard that any stormwater management plan is to achieve an explicit requirement of the Rule (including consequential amendments);

(e) the inclusion of a new clause in Rule 15A.8.1.1 (Clause D) to require a stormwater management plan to address any runoff to the Ō2NL Corridor through an integrated approach for the management of potential adverse effects (implementing amended Policy 6A.3.1 and Policy 6A.3.2);

(f) the inclusion of a requirement for any stormwater management plan to include a process of monitoring, reporting and design review so that unforeseen adverse effects or situations where on-site soakage not achieve the anticipated outcome are addressed (allowing for the 'Plan B' suggested by Dr McConchie); and

(g) limited further refinements or clarifications to the stormwater management plan requirements, including those suggested in the evidence of Dr McConchie.

MANAGING NOISE IMPACTS OF Ō2NL

75. Waka Kotahi's submission seeks (as an alternative to amending the proposed zoning addressed earlier in my evidence), that no development occur within 100 metres of State Highway 57 and within 100 metres of the Ō2NL Corridor.[26] Waka Kotahi's submission, and the Section 42A Report,[27] makes reference to Waka Kotahi's 'Guide to the Management of Effects on Noise Sensitive Land Use Near to the State Highway' in respect to the noise effects of state highways and the methods used to manage such noise.

76. The Section 42A Report notes that the model district plan provisions included in the Waka Kotahi guidance are already proposed to apply to SH57 through the Arapaepae Special Treatment Overlay in the notified version of this plan change. The Section 42A Report goes on to say that "*while such provisions with general applicability could be introduced to the*

[25] The controlled activity for development in a 'State Highway Overlay' and associated matters of control are new provisions that I have proposed, and which I discuss below.
[26] Submission reference 04/34.06.
[27] Section 42A Report, paragraph 625.

Tara-Ika plan change, there could be significant difficulty in implementing such provisions at the current time. This is because the alignment and design of the new highway are not yet known. This means that neither the noise levels nor the buffer and effects area can be determined and therefore cannot be overlaid on District Plan maps."[28]

77. The Section 42A Report concludes that:

(a) it is not efficient or effective to introduce provisions to address potential interface effects now because a plan change might be required later to set a different effects area;[29]

(b) a combination of Ō2NL design mitigation and District Plan provisions is an appropriate way of managing this issue in the long term, but that it is not appropriate to introduce these provisions at the current time, which is ahead of finalised road design or an RMA applications for Ō2NL;[30]

(c) it is more appropriate for Waka Kotahi to seek a specific plan change in respect of Ō2NL;[31] and

(d) Ō2NL has no formal RMA status given it is yet to be subject of any RMA application and design work has not been completed and therefore it is not considered practical for PC4 to attempt to control or manage the integration or potential interface effects.

78. I agree that there is some complexity in managing the impacts of road traffic noise in the absence of a more certain design for Ō2NL. That said, and with reference to the evidence of Dr Chiles, I have drafted provisions (included in **Attachment A**) that I consider resolve this complexity and address the potential effects identified in Dr Chiles' evidence. These are addressed later in my evidence.

79. It is my observation that the Section 42A Report 'parks' the management of road traffic noise to a later date, as opposed to addressed those issues in Proposed PC4. I do not agree with this approach and consider that the Section 42A Report has not recognised, or has failed to give weight to, Ō2NL being a 'physical resource of regional or national importance' that is subject to enabling and protective provisions in the One Plan. In doing so the Section 42A Report:

[28] Section 42A Report, paragraphs 626 and 627.
[29] Section 42A Report, paragraph 627.
[30] Section 42A Report, paragraph 628.
[31] Section 42A Report, paragraph 629.

(a) incorrectly concludes that Ō2NL has no legal status;

(b) appears to defer to a future notice of requirement for a designation by applying an 'existing environment' type of test as opposed to taking direction from the statutory framework for plan making;

(c) does not consider the practical implications and the extent to which the opportunity to avoid adverse effects on human health will be lost – or, as Dr Chiles puts it 'the horse will have already bolted'; and therefore

(d) fails to give effect to the RPS provisions in Chapter 3 of the One Plan, and particularly Policies 3-2, 3-3 and 3-4.

80. The provisions I have drafted:

(a) replace the 'Arapaepae Road Special Effect/Treatment Overlay' with a new 'State Highway Overlay' that extends from Arapaepae Road 150 metres east to a line measured 150 metres from the centre line of the Ō2NL Corridor;

(b) apply a controlled activity status to development within this State Highway Overlay in the Residential Zones, with matters of control being confined to impacts of, and impacts on, the state highway network – that is, resource consent cannot be declined, but the design of a new development may be considered in respect of its relationship to and compatibility with the state highway network; and

(c) includes conditions that apply to the controlled activities that:

(i) provide a regulatory response to development near SH57 that is the same as the provisions included in the notified plan change; and

(ii) establish design standards for noise sensitive activities elsewhere in the State Highway Overlay.

81. It is my opinion that the State Highway Overlay provisions I propose are an efficient, effective and appropriate response to the need to give effect to the relevant higher order provisions while not unduly constraining development in the vicinity of the state highway network. When compared to the relief sought in Waka Kotahi's submission the provisions:

(a) are directly related to an anticipated adverse effect;

(b) do not prevent development (given the controlled activity status);

(c) do not alter the 'yield' or zone that applies to the land subject to the overlay;

(d) provide an opportunity to avoid impacts on human health that would otherwise be lost; and

(e) more generally enables development that will result in a higher quality urban environment in the medium and long term.

82. While framed in the Waka Kotahi submission as a 'reverse sensitivity' effect, as Dr Chiles explains in his evidence the thrust of the Waka Kotahi submission (and the provisions I have proposed) is to protect the amenity and health of residents in close proximity to Ō2NL. I consider it would represent poor resource management to effectively ignore this issue in the PC4 provisions. As Dr Chiles explains, effective measures can be taken in the design of any future development that precedes Ō2NL to address this issue; on the other hand it will not be practicable for Ō2NL to fully 'internalise' noise effects on developments that do not incorporate any such measures.

SIGNS

83. Waka Kotahi's submission seeks that:

(a) Waka Kotahi's signs requirements form part of the performance standards assessment for any site visible from the State Highway; and

(b) digital signs that are visible from the State Highway are a non-complying activity.[32]

84. The Section 42A Report recommends that Waka Kotahi's submission be accepted in part and concludes:

"… Compliance with WKNZTA's signage would sufficiently control any potential adverse effects from signage, including the effects of digital billboards. However, I consider non-complying activity status too onerous for all signage. To allow Council to decline an application or to impose conditions when necessary, a Restricted Discretionary activity status is considered more appropriate where signs breach the relevant standards, with consideration being restricted to the effects of the standard(s) being

[32] Submission reference 04/34.11.

breached. The WKNZTA submission does not specify which design standards they would like to see introduced to the Plan to manage signage near State Highways. WKNZTA may like to provide this information at the hearing to ensure the most appropriate and up to date standards are introduced."[33]

85. I have considered the outcome sought by Waka Kotahi, being the regulation of signs and particularly digital signs, that are visible from the state highway network, in the context of the Operative District Plan and the provisions of Proposed PC4. In this regard, I note that the plan change provisions embed the related zone provisions in the plan change. That is, a permitted activity in Chapter 15 is also permitted in the Residential Zone of the Tara-Ika Precinct, and so forth.

86. On this basis, that rules that regulate signs in Chapter 15 would be embedded in Proposed PC4. I have reviewed the Chapter 15 rules and consider that these rules limit the size, scale, design (and prevent the illumination) of signs as a permitted activity.

87. Where signs trigger the needs for a resource consent, the Matters of Discretion in (for instance) 15.8.12 enable a consideration of "the impact of the sign on traffic safety and the efficiency of the transport network" and provide for the need for "approval of NZTA where the sign fronts a State Highway".

88. In my opinion, these existing provisions are sufficient to address adverse effects of signs on the safety and efficiency of the state highway network and no amendments to the Proposed PC4 provisions are necessary.

COMMERCIAL ACTIVITIES NEAR A STATE HIGHWAY- ACCESS

89. Waka Kotahi's submission seeks that commercial activities adjoining or gaining direct access to a State Highway are non-complying activities.[34]

90. The Section 42A Report recommends that the submission be rejected for the following reasons:

"In response, none of the proposed Commercial Zone fronts onto a state highway. Commercial activities outside the Commercial Zone would trigger a requirement for resource consent. State Highway 57 is a limited access road, this is a matter that would be referred to WKNZTA as part of any consent application to gain access from the State Highway. As such, the

[33] Section 42A Report, paragraph 698.
[34] Submission reference 04/34.12.

existing plan and proposed plan change provisions are considered appropriate to manage this issue."[35]

91. I agree with the Section 42A Report to the extent that the Commercial Zone as proposed does not adjoin the SH57. I also acknowledge that SH57 does have status as a limited access road. That said, I do not agree with the Section 42A Report conclusion that the existing plan and proposed plan change provisions are appropriate to manage access to the state highway network (including Ō2NL) because:

    (a) limited access road status does not address all adverse effects on the state highway network because this status limits the number and location of accesses per property, but does not have any influence on design to enable access to be gained via a local road and does not control the type of activity served by the access;

    (b) no consideration is given to the opportunity for early design to ensure property accesses are not required to Ō2NL; and

    (c) no consideration has been given to RPS Policy 3-2 of the One Plan and the need to ensure that adverse effects on the state highway network (including Ō2NL) are avoided where practicable.

92. It is my opinion that, in order to give effect to RPS Policy 3-2, and also to implement Objective 6A.1 (as amended by my evidence), it is necessary and appropriate to include a standard requiring that access for any development (rather than just commercial activities) is achieved from a road that is not part of the state highway network. I have included such provisions in **Attachment A**. In respect of Ō2NL, such provisions assist in the achievement of a well designed,safe and high quality urban environment and, in the case of SH57, is consistent with the conclusions reached in the evidence of Mr Peet.

Ainsley McLeod

2 November 2021

[35] Section 42A Report, paragraph 698.

ATTACHMENT A OF THE EVIDENCE OF MS MCLEOD FOR WAKA KOTAHI NZ TRANSPORT AGENCY: AMENDMENTS TO THE PROPOSED PLAN CHANGE 4 PROVISIONS SUPPORTED IN EVIDENCE

The following sets out the amendments to the provisions of the Proposed Plan Change 4 that are proposed by and/or supported in evidence.

The Section 42A Report amendments are shown in black underline and ~~strikethrough~~ and the further amendments supported in evidence are shown in blue ~~underline~~ and ~~strikethrough~~. References to various provisions uses the numbering as updated in the Section 42A Report amendments.

STRUCTURE PLAN 013

Amend the 'Transport' key on Structure Plan 013 (SP.001 Rev D) as follows:

"~~O~~Ō*taki to North of Levin (Ō2NL) Corridor ~~Shown for information purposed only. Location and width to be refine and updated~~.*"

Amend Structure Plan 013 (SP.001 Rev D) to show a 'State Highway Overlay' extending from State Highway 57 east to a line measured 150 metres from the centre line of the Ō2NL Corridor as shown below:

[The amended Structure Plan 013 (SP.001 Rev D) is shown at the end of Attachment A.]

as a consequence, **amend** the 'Zoning' key on Structure Plan 013 (SP.001 Rev D) as follows:

"~~Arapaepae Rd Special Effect~~ State Highway Overlay"

6A OBJECTIVES/POLICIES: TARA-IKA MULTI ZONE PRECINCT

Amend the Issue Discussion for Issue 6A.1 'Overall Principles for Development in Tara-Ika' as follows:

*" … State Highway 57 separates ~~Taraika~~ Tara-Ika from the rest of the urban area of Levin. The preferred corridor of the ~~O~~Ō*taki to North of Levin highway (Ō2NL) is also located in ~~Taraika~~ Tara-Ika (near to existing State Highway 57)~~, creating a risk of severance between Taraika Tara-Ika and the rest of Levin~~.*

It is important to provide a planning framework that recognises the importance ~~Due to the alignment~~ of ~~future~~planned and existing state highways. Otherwise, there is a risk that ~~Taraika~~ Tara-Ika will develop in a way that is disconnected from the urban area of Levin and associated services. Unless addressed, this will have a negative impact on the amenity of the resulting development and the well-being of residents. …"

Commented [AM1]: Drafting note: amended to better align with direction given in One Plan Regional Policy Statement provisions.

Commented [AM2]: Drafting note: suggests a narrower concept – must be a known future highway.

Amend Objective 6A.1 as follows:

"~~To achieve a~~An integrated and well connected development that reflects cultural values and local identity, represents good urban design, is supported by a ~~well~~

~~connected~~ safe and efficient transport ~~roading~~ network ~~that supports a range of transport modes~~ and has the facilities, social infrastructure, infrastructure and amenities necessary to contribute to the health, safety, and wellbeing of residents. This includes:

- Encourage housing at a range of densities;
- Provision for a local-scale commercial centre;
- Access to quality public open space;
- A range of accessible transport modes, including s~~S~~afe and efficient walking and cycling options;
- ~~Well connected, safe and efficient roading network;~~
- Design that reflects Muaūpoko cultural values and local history and identity;
- Protection of culturally significant sites;
- Environmentally sensitive design;
- Encouraging subdivision and development design to enable energy efficiency and reduced energy consumption;
- Within the ~~Arapaepae Road Special Treatment~~ State Highway Overlay, development where the actual and potential adverse effects of, and on, the state highway network (including the Ō2NL Corridor) are avoided or mitigated ~~that is appropriate for the site in terms of scale, access and compatibility with surrounding land uses~~."

Commented [AM3]: Drafting note: relocated to site with reference to walking and cycling in the listed matters below.

Commented [AM4]: Drafting note: deleted as repeats the outcome expressed in the opening clause.

Commented [AM5]: Drafting note: amended to give effect to Policy 3-2 and Policy 3-3 of the One Plan.

Amend Policy 6A.1.1 as follows:

"Subdivision, infrastructure and land development in ~~Taraika~~ Tara-Ika must be consistent with Structure Plan 013. Subdivision and land development that deviates from the current or future implementation of the Structure Plan will only be considered where an alternative is proposes that will achieve the following:

- *The same or similar level of connectivity within ~~Taraika~~ Tara-Ika;*
- *The same or similar level of connectivity between ~~Taraika~~ Tara-Ika and the existing urban area of Levin;*
- *Protection of opportunities for future land adjacent to ~~Taraika~~ Tara-Ika to be connected to ~~Taraika~~ Tara-Ika in the future;*
- *Public recreation space of an equivalent functionality as that shown on the Structure Plan and that is within walking distance of a similar number of properties as shown on the Structure Plan;*
- *A streetscape that maintains an appropriate expression of street hierarchy and consistency of treatment along any arterial or collector street;*
- *the development, operation, maintenance or upgrading of the state highway network (including the Ō2NL Corridor) is not compromised by incompatible activities.*

Amend Policy 6A.1.7 as follows:

"*Provide for development ~~a range of land uses~~ within the ~~Arapaepae Road Special Treatment~~ State Highway Overlay where the actual and potential adverse effects of,*

and on, the state highway network (including the Ō2NL Corridor) are managed so that the ability to develop, operate, maintain or upgrade the state highway network is not compromised ~~to allow flexibility to deliver a context specific response that recognises both the unique attributes of the site and the need to appropriately manage adverse effects, including safe and efficient access and avoiding or minimising reverse sensitivity effects~~."

Amend Policy 6A.2.2 as follows:

"Require subdivision and development to be managed, designed and staged to align with the coordinated provision and upgrading of ~~the~~ infrastructure networks (including local road and state highway ~~roading~~ networks), public open space, streetscape and local service facilities ~~within the Taraika Tara-Ika~~, including as illustrated on Structure Plan 013, so that:

- *the safety, efficiency and effectiveness of infrastructure networks (including state highways) is not compromised; and*
- *the development of Tara-Ika is supported by the adequate provision of infrastructure networks, public open space, streetscape and local service facilities."*

Amend Policy 6A.3.1 as follows:

"Require an integrated approach to managing stormwater from ~~Taraiki~~ Tara-Ika to ensure:

- *the quality and quantity of runoff does not have an adverse effect on Punahau (Lake Horowhenua), the Koputaroa Stream, or other downstream environments;*
- *alignment with the management of stormwater from state highways (including within the Ō2NL corridor) or otherwise ensure that run-off from Tara-Ika does not have an adverse effect on the development, operation, maintenance or upgrading of the state highway network.*

Amend Policy 6A.3.2 as follows:

"Require stormwater to be retained and disposed of within the Tara-Ika Growth Area for up to a 1 in 100 year annual return interval rainfall event (with allowance for climate change), and treated and managed utilising the best practicable option to mitigate the effects of stormwater by including the following:

(i) limiting the extent of impervious areas;

(ii) incorporating on-site treatment and disposal of stormwater into subdivision and development design;

(iii) provision of catchment-wide facilities like wetlands and basins that are efficient and effective from both a construction and maintenance perspective and avoid culturally significant sites

Commented [AM6]: Drafting note: amendments made to give effect to the RPS provisions of the One Plan.

Commented [AM7]: Drafting note: expanded to provide direction in respect of the impacts on networks beyond Tara-Ika consistent with the evidence of Mr Peet. These amendments also better reflect the need for Ō2NL to support the development of Tara-Ika.

Commented [AM8]: Drafting note: generally aligns with the provisions for development infrastructure and additional infrastructure in the NPSUD.

Commented [AM9]: Drafting note: additional clause included to clarify that an integrated solution would require consideration of stormwater management from the state highway network (consistent with the evidence of Mr McConchie) and to ensure that the management of stormwater from Tara-Ika does not have an impact on the state highway network.

(iv) except where integrated with the management of stormwater from Ō2NL, not being located within the Ō2NL Corridor noted on Structure Plan 013."

Commented [AM10]: Drafting note: included to ensure that, in the absence of integration with Ō2NL (as preferred by Mr McConchie), stormwater management does not have an adverse effect on the development of Ō2NL (Policy 3-2 of the One Plan RPS).

15A RULES: TARA-IKA MULTI-ZONE PRECINCT

Amend 15A.2 Controlled Activities to include a new controlled activity rule as follows:

"***15A.2.X All Zones – State Highway Overlay***

(a) Any development within the State Highway Overlay noted on Structure Plan 013."

Commented [AM11]: Drafting note: A new controlled activity for the expanded 'State Highway Overlay' to replace the restricted discretionary activity starting point in the Arapaepae Road Special Treatment Overlay as notified.

Delete Rule 15A.3.2(a) Residential Zone as follows:

"~~(a) Any development within the Arapaepae Road Special Treatment Overlay noted on Structure Plan 013~~"

Commented [AM12]: Drafting note: deleted and replaced, in part by 15A.2.X and 15A.3.1(x) because the provisions should apply to all zones.

Amend Rule 15A.4.1 All Zones to include the following:

Commented [AM13]: Drafting note: to clarify the default provisions, assuming that the default was to discretionary Rule 15A.4.1 in any case.

"(x) Except as provided for by Rule 15A.5.1(x), any development within the State Highway Overlay noted on Structure Plan 013 that does not comply with the controlled activity conditions in Rule 15A.7.1.1(b) or restricted discretionary conditions in 15A.8.2.1(b)."

Amend Rule 15A.5.1 All Zones to include the following:

Commented [AM14]: Drafting note: a default provision for situations where a development or subdivision includes access directly to a state highway.

"*(f) Subdivision that does not comply with Rule 15A.8.2.2(b)(ii)~~15A.8.1.2(b)(ii)~~, 15A.8.2.2(b)(iv), 15A.8.3.4(b)(ii)~~15A.8.2.4(b)(ii)~~, 15A.8.4.1(b)(ii)~~15A8.3.1(b)(ii)~~, or 15A.8.5.1(b)(ii)~~15A8.4.1(b)(ii)~~.*

…

(x) Any development that does not comply with controlled activity condition in Rule 15A.7.1.1(b)(iv) or restricted discretionary activity condition in Rule 15A.8.2.1(b)(iv)."

Amend 15A.7 Matters of Control and Conditions for Controlled Activities as follows:

"*~~There are no Taraika Tara Ika Precinct specific Matters of Control.~~ Note: The matters of control and conditions for controlled activities contained within the relevant zone chapter for the relevant activity type also apply.*

The matters over which Council has reserved its control and the conditions are detailed below for each controlled activity.

15A.7.1 All Zones

15A.7.1.1 Development within the State Highway Overlay (Refer to Rule 15A.2.X)

(a) Matters of Control

Commented [AM15]: Drafting note: More explicit and confined direction when compared to the matters of discretion as notified in 15A.8.2.1 (renumbered). For instance, vibration is not included.

(i) Compatibility of the proposed development with the state highway network (including the Ō2NL Corridor).

(ii) The extent to which the proposed development includes measures to avoid or mitigate actual or potential adverse noise and visual effects of the state highway network (including the Ō2NL Corridor).

(iii) Adverse effects on the state highway network (including the Ō2NL Corridor), including the exacerbation of the existing flooding hazard, and the extent to which mitigation measures enable the establishment, operation, maintenance and upgrading of the state highway network;

(iv) The regional and national importance of the state highway network;

(v) The outcome of any consultation with Waka Kotahi NZ Transport Agency.

(b) Conditions

(i) Any development within the State Highway Overlay must comply with 15A.6 Conditions for Permitted Activities, except that permitted activity condition 15A.6.2.6 does not apply to a noise barrier required by clause (iv)(A) below.

(ii) Any development within the State Highway Overlay must be located at least [x] metres from [add the measure from Arapaepae Road/State Highway 57 point here as notified]

(iii) Any development that includes a noise sensitive activity must:

A. provide a 3 metre high noise barrier (bund, wall or combination of the two) located between the sensitive activity and the centreline of the Ō2NL Corridor on Structure Plan 013 (and permitted activity condition 15A.6.2.6 does not apply to this barrier); and

B. for above ground-level habitable spaces of new buildings, or alterations to existing buildings, be designed, constructed and maintained to achieve the indoor design noise levels from the centreline of the Ō2NL Corridor on Structure Plan 013 set out in Table 15A-X:

Table 15A-X Indoor Design Limits

Building Type	Occupancy/Activity	Maximum Indoor Design Noise Level $L_{Aeq(24h)}$
Residential	Living spaces, sleeping spaces (including visitor accommodation and retirement accommodation)	40dB
Education	Assembly halls	35dB
	Conference rooms, drama studios	40dB
	Lecture rooms and theatres, music studios	35dB

Commented [AM16]: Drafting note: To apply the same development standards as apply to activities outside of the Overlay (ensuring that the provisions aren't read as being less stringent in respect of other development controls).

Commented [AM17]: Drafting note: Included as a trigger so that the conditions that apply to the Arapaepae Road Special Treatment Overlay (as notified) continue to apply in the same way. There is a need to confirm the distances and measure point from the notified version.

Commented [AM18]: Consistent with the recommendations in the evidence of Dr Chiles.

	Libraries	*45dB*
	Sleeping areas in educational facilities	*40dB*
	Teaching areas	*40dB*
Health	*Overnight medical care, wards*	*40dB*
	Clinics, consulting rooms, theatres, nurses' stations	*45dB*
Cultural Buildings	*Places of worship, marae*	*35dB*

Note: This table is informed by Waka Kotahi guidance material on managing State Highway noise. The purpose of this table is simply to specify the noise level standards for different types of activities. It should not be taken as an indication of what types of activities will more broadly be considered acceptable in this location.

C. If windows must be closed to achieve the design noise levels in (B), the building must be designed, constructed and maintained with a ventilation and cooling system. For habitable spaces a ventilation cooling system must achieve the following:

- *Ventilation must be provided to meet clause G4 of the New Zealand Building Code. Noise from the system must not exceed 30 dB LAeq(30s) when measured 1 m away from any grille or diffuser.*
- *The occupant must be able to control the ventilation rate in increments up to a high air flow setting that provides at least 6 air changes per hour. Noise from the system must not exceed 30 dB LAeq(30s) when measured 1 m away from any grille or diffuser.*
- *The system must provide cooling controllable by the occupant that can maintain the temperature at no greater than 25°C. Noise from the system must not exceed 30 dB LAeq(30s) when measured 1 m away from any grille or diffuser.*

D. A design report prepared by a suitably qualified and experienced acoustics specialist must be submitted with the building consent application for construction or alteration of any building containing a noise sensitive activity in or partly in the State Highway Overlay.

(iv) Access to the development must be achieved from a road that is not part of the state highway network (including Ō2NL)."

Amend 15A.8.1.1 Conditions for All Restricted Discretionary Activities as follows:

"*(i) Stormwater Management ~~Plan~~*

A. Stormwater must be retained and discharged to ground within the Tara-Ika Growth Area for up to a 1 in 100 year average recurrence interval (ARI) rainfall event (with allowance for climate change).

B. All applications for restricted discretionary activities must include a stormwater management plan that ~~which~~ sets out how stormwater will be managed via both onsite and centralised treatment and soakage facilities (i.e. wetlands and soakage basins) to achieve the standard in A. ~~in a manner that ensures stormwater is retained and disposed of within the Tara-Ika Growth Area for up to a 1 in 100 year average recurrence interval (ARI) rainfall event (with allowance for climate change).~~

C. The stormwater management p~~P~~lan required by B shall be consistent with the more stringent of the Horowhenua District Plan Subdivision and Development Principles and Requirements 2014 and NZS 4404:2010 (Land development and subdivision infrastructure).

D. The stormwater management plan required by B must demonstrate how the achievement of the Standard in A ensures that stormwater runoff as a result of the subdivision or development that discharges to the Ō2NL Corridor noted on Structure Plan 013 is:

- compatible with the Ō2NL stormwater treatment and management system; or
- at pre-development rates so that the discharge of stormwater will not have an impact on the safe and efficient operation, maintenance, development and upgrade of the state highway network (including the Ō2NL Corridor).

E. The stormwater management plan required by B ~~and~~ shall include the following:

- The size, design, location and ~~expected~~required maintenance of stormwater management devices (e.g. rainwater tanks, on-lot soakage, wetlands and soakage basins), including those to be vested with Council.
  - Pre-soakage treatment is required for all runoff from all impervious surfaces excluding roofs and other on-lot impervious areas (patios, shed etc.) but including private driveways and parking areas. The primary method of treatment shall be through centralised end-of-pipe stormwater wetlands that are sized and located to efficiently service the Tara-Ika ~~Grwoth~~Growth Area in an integrated manner. Wetlands shall include a high flow bypass into an adjoining/downstream soakage basin for disposal, sized to bypass flows greater than the Water Quality Flow.
  - The stormwater treatment devices (wetlands) shall be sized to accommodate the Water Quality Flow and Water Quality Volume of the contributing catchment, excluding the roof and on-lot impervious areas that are connected to appropriately sized on-lot soakage devices. The contributing catchment includes adjoining development blocks within Tara-Ika and must consider the future developed upstream catchment. The stormwater soakage devices shall be sized to provide full retention and ~~disposal~~discharge to ground of the 1 in 100 year

ARI runoff volume (with allowance for climate change) with no overflows to the downstream environment.

- *Overland flow paths for the greater than 100-year ARI rainfall event (with allowance for climate change) and proposed mechanisms for managing these. The reduction of runoff volume and flow from on-lot soakage disposal cannot be considered in the sizing calculations for the 100-year ARI overland flow path, in order to ensure sufficient capacity is available during extreme events.*

    - *Calculations undertaken to prepare the stormwater management plan. These should be carried out in the following manner:*
    - *The 12-hour nested design storm specified by Wellington Water in "Reference Guide for Design Storm Hydrology" (2019) shall be applied to Tara-Ika stormwater design calculations.*
    - *Design storms shall be developed with HIRDS v4 rainfall data (or later version, if available) for the development site using the RCP 8.5 (2081-2100) climate change scenario.*
    - *The soakage rate for each on-lot soakage devices to receive roof runoff from roofs and other impervious areas (excluding driveways and parking areas) shall be determined by carrying out soakage testing in accordance with Horowhenua District Plan Subdivision and Design Requirements and Principles, with a safety factor of 1.5 applied to the testing results (i.e., divide soakage rate result by 1.5). Evidence of the site-specific soakage testing must be provided, including the suitability of soil layers at the location and depth of the proposed on-lot soakage. In the absence of soakage testing or for the purposes of initial design a soakage rate of 100mm per hour will be applied. Rainwater tank volume shall not be considered in the sizing of on-lot soakage.*
    - *The Water Quality Volume (WQV) and the Water Quality Flow (WQF) used to size treatment devices shall be calculated using the method specified in Wellington Water's "Water Sensitive Design for Stormwater: Treatment Device Design Guideline" (2019).*
    - *A process of monitoring, reporting and design revision to either confirm compliance with clause A, C and D or otherwise alter the design and management of stormwater to achieve compliance.*

Acceptable design standards for treatment and soakage devices include Wellington Water's "Water Sensitive Design for Stormwater: Treatment Device Design Guideline" (2019), or Auckland Council's "Stormwater Management Devices in the Auckland Region" (2017).

Advice Note: Pre-application meetings with Council are strongly encouraged."

Commented [AM19]: Drafting note: assuming the standard in A is achieved this must relate to a greater than 100-year ARI evidence.

Amend 15A.8.2.1 Development within the Arapaepae Road Special Treatment Area as follows:

"***~~15.8.8.1.1~~15A.8.2.1 Non-Compliance with Rule 15A.7.1.1(b)(iii) Development within the ~~Arapaepae Road Special Treatment~~ State Highway Overlay ~~(Refer to 15A.3.2(a))~~***

(a) Matters of Discretion

~~(i) Reverse sensitivity effects, including:~~

- *~~Noise~~*
- *~~Vibration~~*
- *~~Visual~~*
- *~~Traffic~~*

(i~~i~~) Compatibility of the proposed development with ~~surrounding and~~ the state highway network (including the Ō2NL Corridor)~~anticipated land uses~~.

~~(iii) Safe and efficient access.~~

(ii) The extent to which the proposed development includes measures to avoid or mitigate actual or potential adverse noise and visual effects of the state highway network (including the Ō2NL Corridor).

(iii) Adverse effects on the state highway network (including the Ō2NL Corridor), including the exacerbation of the existing flooding hazard, and the extent to which mitigation measures enable the establishment, operation, maintenance and upgrading of the state highway network;

(iv) The regional and national importance of the state highway network;

(v) The outcome of any consultation with Waka Kotahi NZ Transport Agency.

(b) Conditions

…

(iii) A design report prepared by a suitably qualified and experienced acoustics specialist must be submitted with the building consent application for construction or alteration of any building containing a noise sensitive activity in or partly in the ~~Arapaepae Road Special Treatment~~ State Highway Overlay.

(iv) Access to the development must be achieved from a road that is not part of the state highway network (including Ō2NL).

(c) Non-notification

(i) under section 77D of the RMA, an activity requiring resource consent under Rule 15.7.1 shall not be publicly notified ~~or limited notified~~, except where:

Commented [AM20]: Drafting note: 'adverse effects' is used instead of 'reverse sensitivity' effects. Noting that reverse sensitivity effects are a subset of adverse effects. This is preferred because it better captures the effects on the state highway network – such as traffic effects.

Commented [AM21]: Drafting note: reference to limited notification is deleted to enable Council to decide to notify Waka Kotahi in the usual way, in situations where there may be an adverse effect on the state highway network.

That is appropriate given the importance of the state highway network including as recognised in statutory planning instruments.

- *The Council decides special circumstances existing (pursuant to Section 95A(9); or*
- *The applicant requests public notification (pursuant to Section 95A(3)(a)*

Amend 15A.8.2.2 Subdivision to include the following additional Matters of Discretion:

"*(a) Matters of Discretion*

1. *… Rule 15A.8.2.2(vi):*

~~"(viii)~~(vi) The provision of access, any new roads, cycleways, footpaths and provision of linkages to existing roads, access over or under railway lines, the diversion of alteration of any existing roads, the provision of access, passing bays, parking and manoeuvring areas, and any necessary easements."

~~(x)~~(vii) The management of traffic generated and potential adverse effects on the safety and efficiency of the street network, including:

- *impacts on the level of service provided by state highways as a result of delays on the state highway network or on side roads approaching the state highway network, measured using the US Highways Capacity Manual Level of Service criteria; and*
- *impacts on the safety of travel on the state highway network, including at intersections, measured with reference to Waka Kotahi NZ Transport Agency guidance.*

Note: The adverse effects on the state highway network listed above are not likely to be significant once Ō2NL is constructed and operational.

…

(xix) Within the State Highway Overlay:

- *the regional and national importance of the state highway network;*
- *whether the design and layout of the subdivision enables future land uses to avoid or mitigate actual or potential adverse noise and visual effects of the state highway network (including the Ō2NL Corridor);*
- *whether the design and layout of the subdivision enables the avoidance or mitigation of adverse effects on the establishment, operation, maintenance and upgrading of the state highway network, including the safety and efficiency of the state highway network;*
- *the outcome of any consultation with Waka Kotahi NZ Transport Agency."*

In addition, **amend** 15A.8.2.2 Subdivision as follows:

"(b) Conditions

…

(iv) *All subdivisions shall comply with the requirements as specified in Chapter 21 except that access to all new allotments must be achieved from a road that is not part of the state highway network (including Ō2NL).*"

…

(c) Non-notification

(i) under section 77D of the RMA, an activity requiring resource consent under Rule 15.7.1 shall not be publicly notified ~~or limited notified~~, except where:

- *The Council decides special circumstances existing (pursuant to Section 95A(9); or*
- *The applicant requests public notification (pursuant to Section 95A(3)(a)*

Commented [AM22]: Drafting note: reference to limited notification is deleted to enable Council to decide to notify Waka Kotahi in the usual way (in situations where there may be an adverse effect on the state highway network.

Transport

- Arterial road connections. Fixed location
- Collector road connections. Fixed location
- Local roads and laneways. Flexible location
- Strategic Cycleways (no private driveways to cross path).
- Otaki to North Levin Corridor
  Shown for information purposed only.
  Location and width to be refine and updated.
- State Highway Overlay

Zoning

- Commercial
- Education Overlay
- Arapaepae Rd Special Effect Overlay
- Medium Density Residential
- Residential
- Low Density Residential
- Greenbelt Residential
- Open Space

McIndoe Urban + local

North: A
Scale: 1:15,000@A3
Issued For: Information
Job Number: 1805 -0982
Revision: D
Project: Taraika Master Plan
Drawing Title: Structure Plan
Drawing No: SP.001

Submitter 04/34 WKNZTA Evidence – Stormwater

BEFORE THE HOROWHENUA DISTRICT COUNCIL
INDEPENDENT HEARING PANEL

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	the hearing on the Horowhenua Proposed District Plan Change 4 - Tara-Ika Growth Area

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STATEMENT OF EVIDENCE OF DR JOHN (Jack) ALLEN McCONCHIE ON BEHALF OF WAKA KOTAHI NZ TRANSPORT AGENCY

Stormwater

Dated: 2 November 2021

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INTRODUCTION

1. My full name is Dr John (Jack) Allen McConchie. I am currently employed as the Technical Principal (Hydrology & Geomorphology) by WSP (NZ). I have been engaged by Waka Kotahi NZ Transport Agency (**Waka Kotahi**) to provide expert technical support in the areas of hydrology and stormwater management in relation to the Horowhenua Proposed District Plan Change 4 – Tara-Ika Growth Area (**PC4**).

Qualifications and experience

2. I have the following qualifications and experience relevant to this evidence. I hold a Bachelor of Science degree with First Class Honours (from Victoria University of Wellington) and a PhD (also from Victoria University of Wellington).

3. I am a member of several professional and relevant associations including the:

   (a) New Zealand Hydrological Society;

   (b) American Geophysical Union;

   (c) New Zealand Geographical Society;

   (d) Australia-New Zealand Geomorphology Group; and

   (e) Environment Institute of Australia and New Zealand.

4. I am a certified RMA hearings commissioner (2011-present) and have been an Independent Professional Adviser to Waka Kotahi since 2011.

5. I was the New Zealand Geographical Society representative on the Joint New Zealand Earth Science Societies' Working Group on Geopreservation. This Working Group produced the first geopreservation inventory; published as the New Zealand Landform Inventory.

6. Prior to the start of 2008, I was an Associate Professor with the School of Earth Sciences at Victoria University of Wellington. I taught undergraduate courses in hydrology and geomorphology, and a postgraduate course in hydrology, hydrogeology and water resources.

7. For more than 40 years my research and professional experience has focused on various aspects of hydrology and geomorphology, including: slope and surface water hydrology (including water quality), hydrometric analysis,

groundwater dynamics, landscape evolution, and natural hazards. Within these fields I have edited one book. I have written, or co-authored, 10 book chapters and over 50 internationally-refereed scientific publications; including several papers focusing on the effects of urban development on hydrological processes, how adverse effects might be mitigated, and the potential effects of land use and climate change on hydrological processes.

8. I have considerable experience in stormwater-related projects, including those involving the development of large scale infrastructure. This includes numerous hydrological effects assessments relating to urban development. I developed the on-site soakage guidelines and assessment methodology for Waipā District Council.

9. I prepared a range of technical reports and provided expert evidence to support a change to the Taupō District Plan to recognise the extent and magnitude of the flood hazard. The flood hazard from Lake Taupō and its six major tributaries was assessed. I also provided technical evidence to the Environment Court in respect of Taupō District Council's Plan Change 20 to re-zone land use adjacent to the Kuratau River.

10. I have extensive experience responding to natural hazards; particularly flooding and slope instability. This includes: Cyclone Alison in the Ruahine Range (1975); the Hutt Valley rainstorm (1976); extensive landsliding in Wairarapa (1978); Cyclone Bola (1988); Waikato floods (1998); and the Manawatū floods (2004). Most recently I assisted with the North Canterbury Transport Infrastructure Recovery (NCTIR) Agency and the Flaxbourne-Ward community responses to mitigate the effects of the Kaikōura Earthquake (2016).

11. I have considerable experience working on major infrastructure projects including the Hamilton North Bypass; Western Link Road; Kopu Bridge; Tauranga Eastern Link Road; Basin Bridge; Transmission Gully; Peka Peka to Ōtaki (**PP2Ō**) Expressway; Petone-Grenada Link Road, and the realignment of SH3 at both Mt Messenger and Awakino Gorge. This experience gives me an in-depth understanding of climate, hydrology, flooding, and erosion and sediment transport processes as they interact with infrastructure.

12. I provided technical evidence on behalf of Waka Kotahi to Hearing Stream 4 – Water Quality and Stormwater, in regard to Wellington Regional Council's proposed Natural Resources Plan.

13. Finally, I have considerable local experience having worked on various hydrology and groundwater-related projects in and around Horowhenua and Manawatū over the past 20 years; including the PP2Ō Expressway and Te Ahu a Turanga: Manawatū Tararua Highway. I have provided technical advice to Horizons on a number of applications for resource consents involving works related to streams and rivers. This experience has given me an in-depth understanding of climate, hydrology, and hydrological processes of the area subject to PC4.

Code of conduct

14. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014. This evidence has been prepared in compliance with that Code, as if it were evidence being given in Environment Court proceedings. Unless I state otherwise, this evidence is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Purpose and scope of evidence

15. This assessment provides a review of:

    (a) the geomorphic setting, including potential overland flow paths and flood storage areas;

    (b) the hydrological setting and hydrological processes, including the existing flood hazard;

    (c) the potential effects of urban development on hydrological processes;

    (d) the proposed stormwater management at Tara-Ika, including on-site soakage and the Zero-discharge strategy;

    (e) previous experience regarding on-site soakage;

    (f) stormwater management and treatment within the Ō2NL Project;

    (g) the interaction of the Ō2NL Project with the Tara-Ika Growth Area;

    (h) options for integrated stormwater management; and

    (i) the need for controls on future development of Tara-Ika to avoid adverse and unintended consequences.

EXECUTIVE SUMMARY

16. The proposed Tara-Ika Growth Area lies on a sequence of coalescing alluvial fans, formed by highly mobile rivers and streams of various sizes; including the Ōhau River, and many waterways draining the foothills of the Tararua Range.

17. The topography of the proposed Tara-Ika Growth Area is generally flat and undulating with a natural depressions running approximately North-West; from the hill country towards Lake Horowhenua. Even without any development, ponding and overland flow is expected within these natural depressions during intense or prolonged rainfall events.

18. The topography and geology mean that the Tara-Ika Growth Area has an existing flood hazard, which is likely to be exacerbated by the predicted effects of potential climate change. Since urban development within Tara-Ika will result in increased potential runoff, because of the greater area of impervious surfaces e.g. roofs, roads, pavements etc. any development will need to be undertaken so as to not exacerbate the flood hazard.

19. Urban development, and the change in land use proposed, have the potential to affect runoff processes. Depending on the scale of development, and the mitigation measures adopted, urbanisation can cause floods to occur more frequently, peak higher and faster given the same rainfall event, have a greater volume, but also subside more quickly.

20. The culmination of the stormwater planning, analyses, and investigations for Tara-Ika have led Horowhenua District Council (**HDC**) to adopt the current preferred strategy, referred to as the *"Zero-discharge Approach"*. Under this approach, all stormwater runoff from design events up to the 100-year Average Recurrence interval (**ARI**), or 1% Annual Exceedance Probability (**AEP**), rainstorm (including the effects of climate change) is retained within the development area.

21. In my opinion, the stormwater design standards suggested by HDC are conservative (i.e. greater design rainfalls and the potential effects of climate change than could have been adopted). However, whether these will be able to be implemented remains largely unknown. These standards will act as a major constraint and whether they can be implemented will depend on the final configuration of the Tara-Ika Growth Area.

22. It is possible that some of the increased runoff that will result from development within Tara-Ika can be managed by on-site soakage. However, the efficiency

and effectiveness of on-site soakage will depend on the magnitude of the design rainstorm and the density of residential development. The effectiveness of on-site soakage will decrease both with the increasing magnitude of the rainstorm and the density of development.

23. Consequently, both the magnitude of the design rainfall and the maximum density of residential development are critical criteria for any change to the District Plan.

24. However, evidence from around New Zealand is on-site soakage is generally less effective than anticipated and that such systems can be problematic. Consequently, it is essential that HDC have a 'Plan B' should on-site soakage and Zero-discharge from Tara-Ika not be achieved.

25. The Ōtaki to North of Levin Project (**Ō2NL Project**) will be using swales and wetlands within the designation to store, treat and attenuate all runoff during a 1% AEP design rainfall, increased to allow for the effects of 100-years of climate change.

26. These treatment devices will be located in areas which currently receive excess runoff from that area in which Tara-Ika will be developed. Consequently, any increased runoff as a result of the development of Tara-Ika will impact on the efficiency and treatment provided for runoff from the Ō2NL Project.

27. Any increased runoff from Tara-Ika will mean that the capacity and efficiency of the treatment devices associated with Ō2NL will be compromised more often and to a greater degree than their design specifications.

28. Consequently, it is essential that any stormwater management strategy for Tara-Ika considers, and accommodates, any potential effects on the efficiency and effectiveness of stormwater management and treatment associated with Ō2NL.

29. The increased runoff from Tara-Ika, and its potential effects, should be clearly identified and quantified. How this increased runoff will interact with the stormwater management and treatment system for Ō2NL should also be quantified.

30. Given the existing natural and inherent interaction of stormwater runoff from both Tara-Ika and the Ō2NL Expressway, integrated stormwater management is desirable.

31. Integrated management of stormwater could start with the identification and quantification of the location and volume of stormwater runoff able to be stored and treated upstream of Ō2NL, both within the designation and further upstream. This would then set the maximum amount of runoff from both sources that can be stored and treated.

32. Once the volume of the treatment devices required for Ō2NL has been determined, the residual volume available to store and attenuate runoff from Tara-Ika would be clearly defined. Responsibility for developing the total volume of storage could then be allocated.

33. Once the total availability of stormwater storage available to support the development of Tara-Ika is determined, a clear and precise stormwater management strategy should be developed for the Tara-Ika Growth Area. This strategy should provide for the complete and holistic development of the entire area and not a series of discrete 'developments' within the wider Tara-Ika Growth Area.

34. Landowners / developers must commit to complying with that overall strategy, and to continue maintaining any stormwater treatment devices on their property so that they achieve the required stormwater management goals.

35. Because of the integrated nature of stormwater runoff from Tara-Ika and the Ō2NL Project it is critical that a holistic stormwater management plan be developed by both Waka Kotahi and HDC. Failure to do this will likely lead to issues should the management of stormwater and flooding be problematic at some stage in the future.

36. Partly because of the relative timing of PC4 and O2NL, it is not possible to have in place a precisely calibrated, integrated stormwater strategy at this stage. In the meantime, it is important the final provisions of PC4 appropriately place the onus of dealing with stormwater on developers / landowners. Ms McLeod has recommended amendments to the provisions to that end, which I support.

GEOMORPHIC SETTING

37. The proposed Tara-Ika Growth Area lies on a sequence of coalescing alluvial fans, formed by highly mobile rivers and streams of various sizes; including the Ōhau River and the many waterways draining the foothills of the Tararua Range (*Figure 1*). The alluvium deposited by these rivers and streams ranges from coarse gravels to clay; depending on the size of the stream and the

position of the thalweg (the deepest and fastest channel) when the sediment was deposited. This already complex mosaic of alluvium is further complicated by the mobile nature of the rivers and streams, potential truncation of stream channels by strike-slip motion on any faults, and changes in sediment supply from the headwaters.

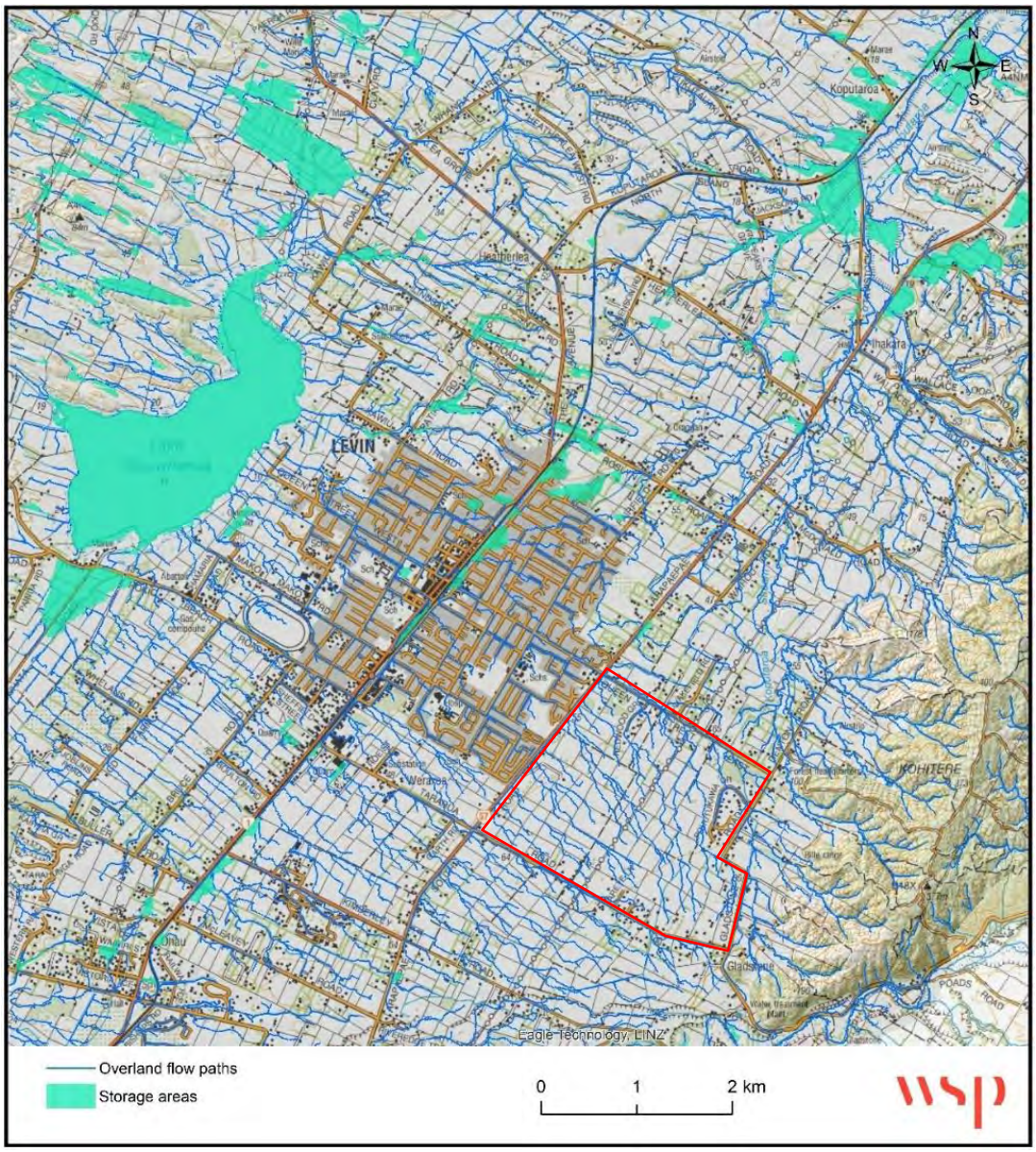

Figure 1: Location of Tara-Ika and potential overland flow paths and flood storage areas.

38. Over time, sea level has also fluctuated by 100-130m because of the changing climate. This led to significant differences in the distance of the coast from any particular point, and therefore the nature and energy of both alluvial and marine processes. During glacial conditions the shoreline was about 30km west of its current 'interglacial' position. Marine sediment is consequently interfingered with the alluvium from the rivers. Climatic oscillations between glacials (with lower sea levels, steeper river gradients, reduced vegetation cover, and

greater erosion) and interglacials (with conditions similar to today) have also affected conditions. Finally, there is likely to have been both vertical and horizontal movement on any faults in the area. The net effect of the interaction of all these processes is an extremely complex three-dimensional mosaic of coarse to fine sediment formed by either alluvial or marine processes.

39. Because of the location of Tara-Ika relative to the coast, and the age of the sedimentary deposits, the area is mantled with loess i.e. a fine-grained silt. Silt has been shown to cause major issues with the efficient and effective functioning of on-site soakage systems. The presence of this material may therefore be problematic for the efficiency and effectiveness of on-site soakage at Tara-Ika.

40. Given the nature and origin of these sediments, they are relatively easier eroded and re-entrained by the same or similar processes that led to their deposition. This means that as well as the landscape accumulating sediment, it has also been randomly and preferentially eroded. The interaction of all of these processes over time has led to present landscape at Tara-Ika.

HYDROLOGICAL SETTING

41. The topography of the proposed Tara-Ika Growth Area is generally flat and undulating, with a natural depression running approximately SE-NW; from the hill country towards Lake Horowhenua (*Figure 2*). Even without any development, ponding and overland flow is expected within these natural depressions during intense or prolonged rainfall events.

42. The topography, geology, and proximity to the Tararua Range mean that Tara-Ika is prone to flooding. Any development will therefore need to both recognise and not exacerbate the existing flood hazard.

43. Detailed computational hydraulic modelling, using a rain-on-grid approach, has identified flood prone areas in the vicinity of the Ō2NL Project. The models have been calibrated to recorded flood events and therefore provide a reliable indication of the likely flood hazard under a range of design rainfall events.

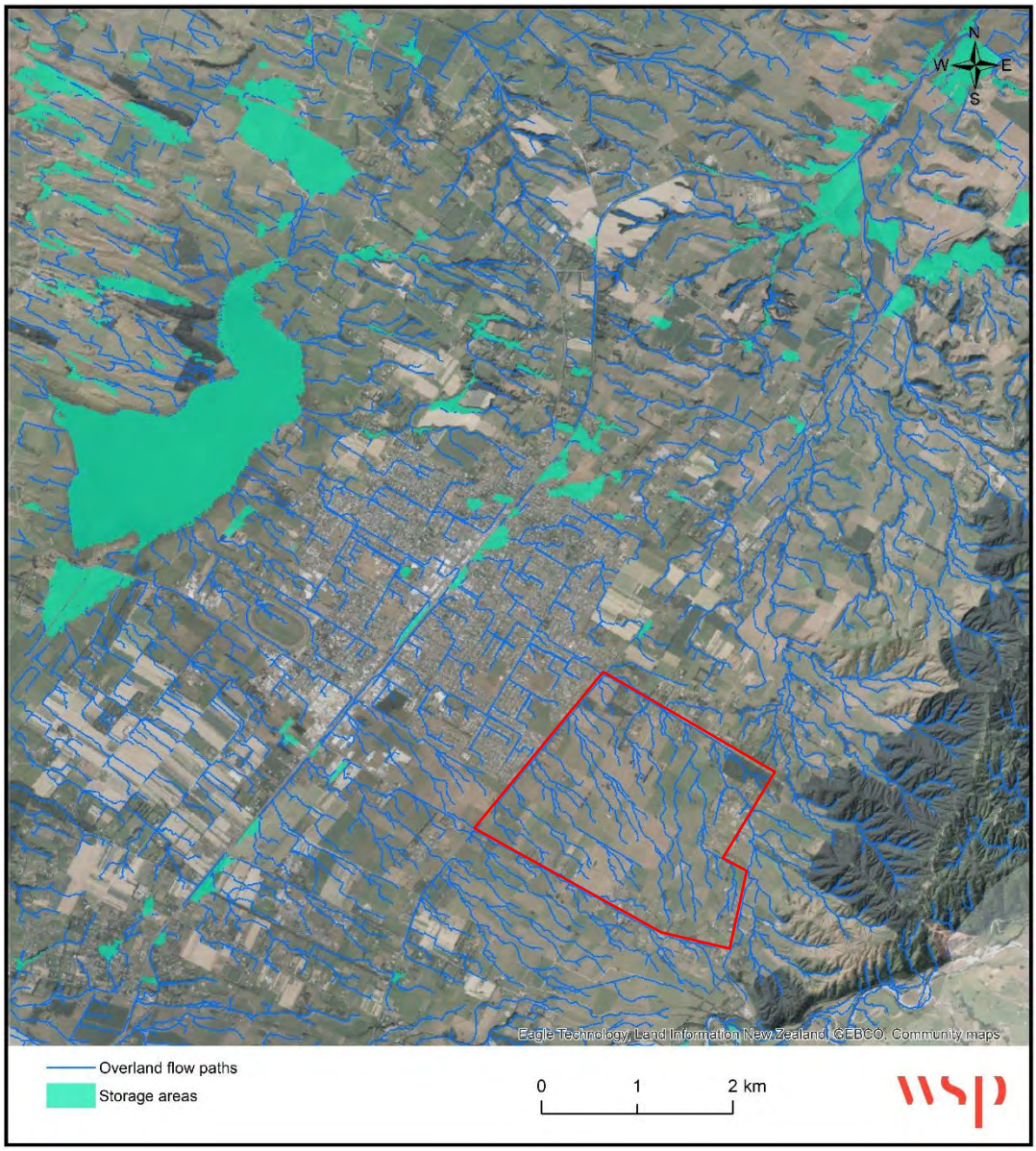

Figure 2: ***Natural drainage lines and topographic depressions within Tara-Ika and the wider area.***

44. During the 10% AEP design rainfall, under the current climate, most of the potential overland flow paths across Tara-Ika become active stream channels (*Figure 3*). While the extent of flooding is less towards the eastern extent of Tara-Ika, and particularly in the North-East corner, both the extent and depth of flooding increases downstream towards the Ō2NL corridor and Arapaepae Road.

45. During the 1% AEP design rainfall, adjusted for the potential effects of climate change, the extent and depth of flooding across most of Tara-Ika increases. While the North-East corner remains flood free, much of the area towards the Ō2NL Project and Arapaepae Road becomes inundated (*Figure 4*).

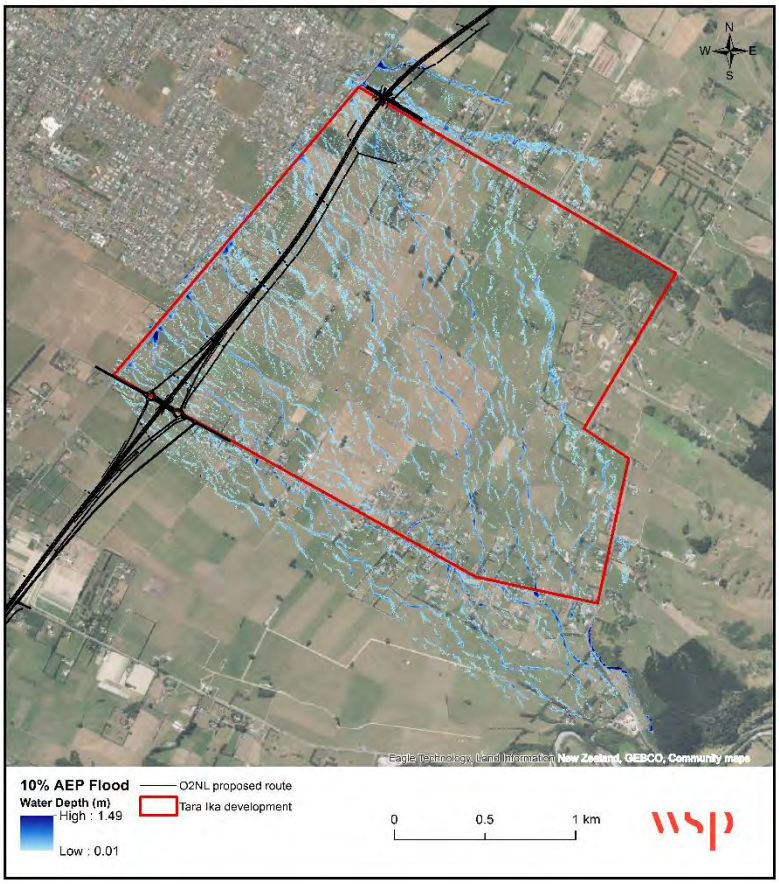

Figure 3: ***Existing flood hazard during a 10% AEP rainfall event under the existing environment and current climate.***

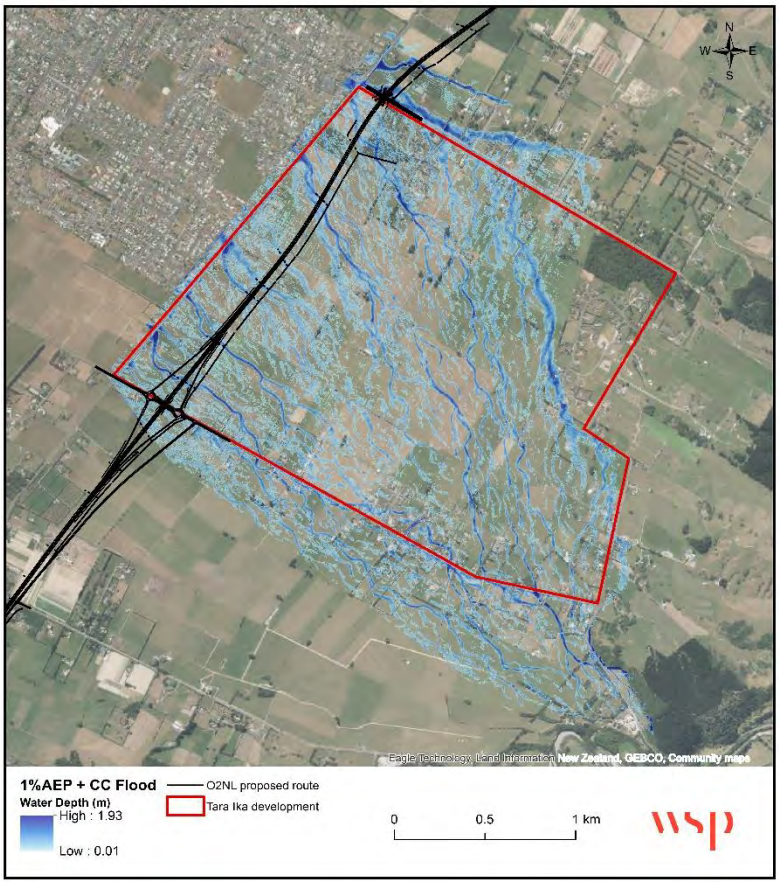

Figure 4: ***Flood hazard during a 1% AEP rainfall event, increased to allow for the predicted effects of climate change over the next 100 years.***

HYDROLOGICAL PROCESSES

46. The potential hydrological effects of the proposed Tara-Ika Growth Area are directly related to the interaction of these works with the passage of any runoff from the point that rainfall lands on the ground surface to its 'sink' in a surface water body.

47. When precipitation occurs over the land, much of the water never reaches the ground surface because it is intercepted by vegetation. Some moisture is stored on the leaf surfaces, some is evaporated back into the atmosphere, and the remainder falls to the ground. For the moisture that reaches the ground, the soil, acting as a filter, determines the path this water takes to reach the coast *(Figure 5*).

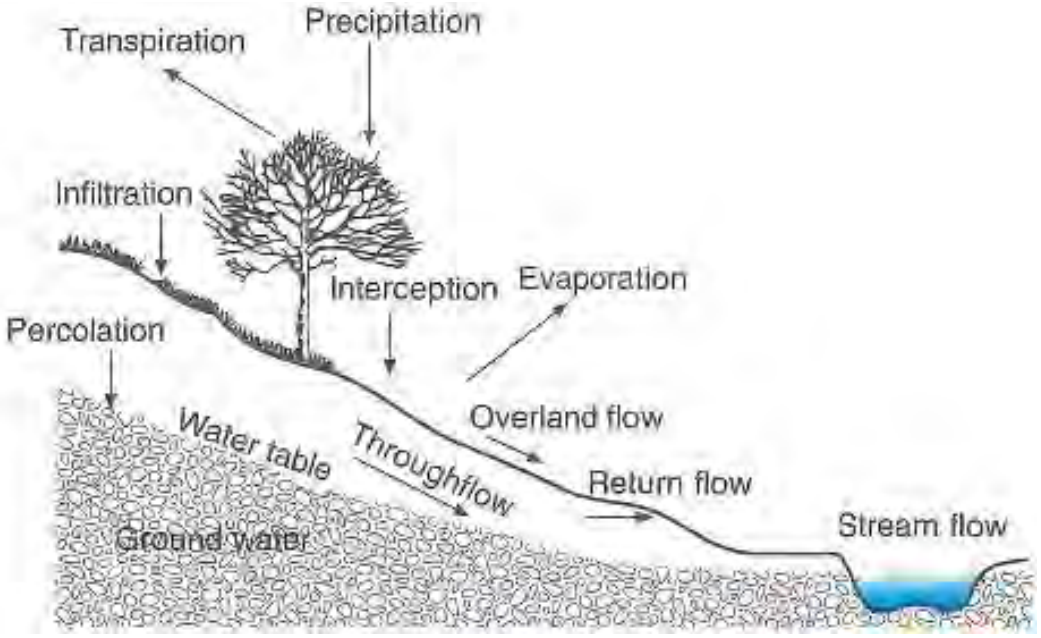

Figure 5: Various pathways and storages within a hillslope.

48. On reaching the ground, some of the precipitation infiltrates the soil surface and is either held within the soil by capillary forces or percolates to the groundwater. The rest will first fill any depressions on the surface, and then start to move as overland flow downslope towards any surface watercourses.

49. The total volume, timing and characteristics of runoff therefore includes three mechanisms (*Figure 6*):

    (a) Overland flow (water flowing across the land surface);

    (b) Throughflow (water flowing through the soil or unsaturated zone); and

    (c) Groundwater flow (water flowing through the groundwater or saturated zone).

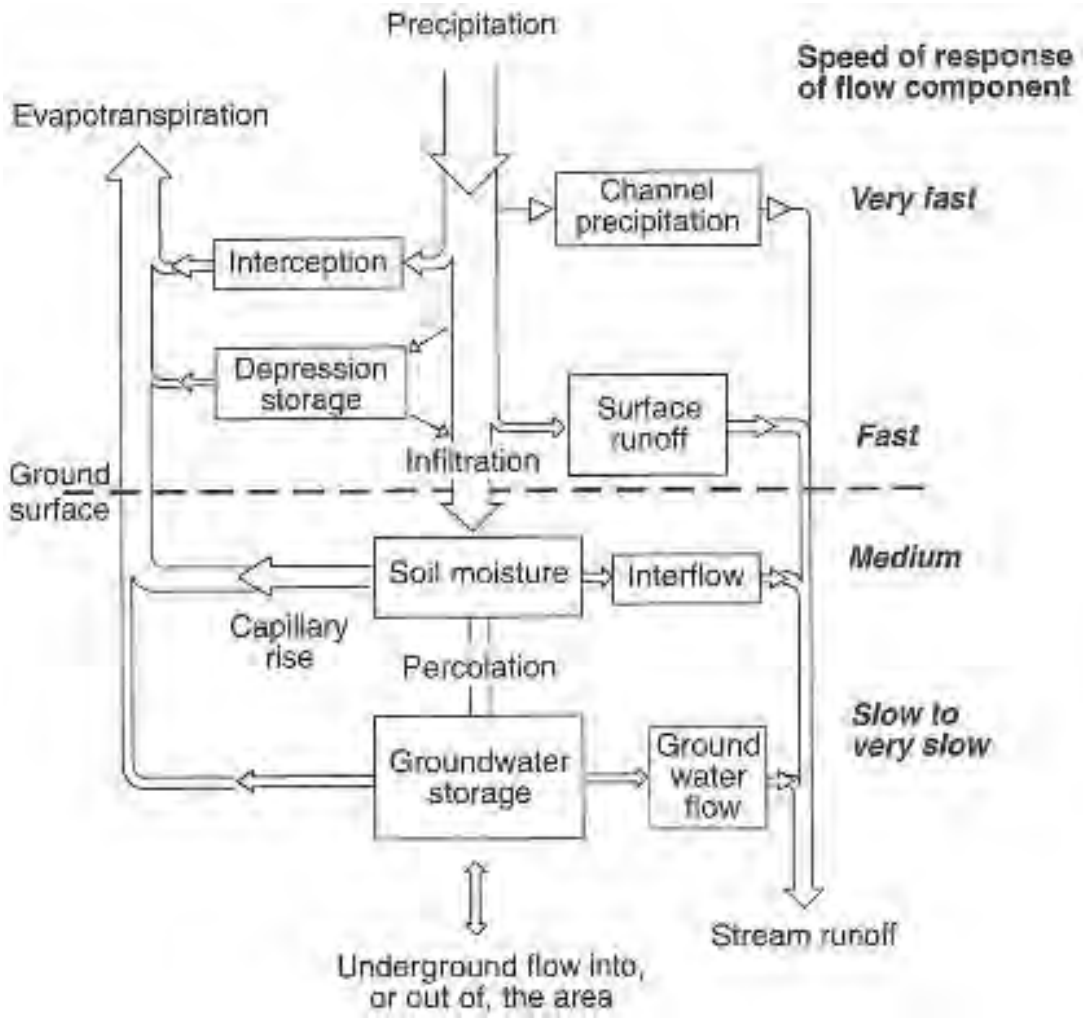

Figure 6: Processes by which moisture moves across and through a slope and generates runoff.

50. The relative importance of each of these mechanisms to runoff generation depends on conditions in the catchment and the rainfall characteristics (i.e. duration, depth, and the spatial and temporal variability).

51. When the rate of rainfall exceeds the infiltration capacity of the soil, or the soil storage is saturated, any excess rainfall is collected on the surface before traveling downslope as a thin film of water; with the velocity of flow increasing with water depth.

52. On well-vegetated and flatter slopes, surface runoff is rare. However, where slopes are steep, and the soil compacted, thin or non-existent, surface runoff is more common. Therefore, one of the potential hydrological effects of the earthworks and paving within Tara-Ika will be an increase in the volume and velocity of surface runoff. The provision of upgraded and efficient stormwater networks will also increase the volume and velocity of runoff.

53. The soil acts as a filter which determines which flow paths operate, the length of these flow paths, the velocity of flow, the storage and mitigation of the effect

of any rainstorm event, and the continuity of any surface flow. Consequently, development of Tara-Ika has the potential to affect each of these runoff processes. It has the potential to increase the volume, velocity, and variability of runoff, and therefore increase the availability of energy to do work e.g., erosion and transport of sediment.

EFFECTS OF URBAN DEVELOPMENT

54. The development of Tara-Ika has the potential to affect runoff characteristics and potentially the flood hazard. Changes include:

    (a) An increase in the percentage of impervious ground cover. As the soil is paved and sealed, the amount of water than can infiltrate the surface decreases, with a consequential increase in runoff (including the volume, peak and time to rise) during any storm.

    (b) The removal of vegetation which acts as a buffer between the impact of rainfall and the soil surface. Vegetation intercepts rain, so a considerable volume of water never reaches the ground surface to make its way into a stream. The root network and litter layer increase the infiltration of water through the soil surface and slow down and increase the length of flow paths any precipitation must take to reach a stream. A natural vegetation cover binds the soil, absorbs the impact of high intensity rainfall, and stores and uses water, reducing and delaying the volume of water reaching the stream.

        It should be noted, however, that the vegetation cover at Tara-Ika has already been heavily modified. It is therefore likely that most of the 'beneficial effects' of a good vegetation cover have already been lost. Any further change between the existing baseline and the proposed environment is therefore likely to be relatively small.

    (c) The provision of sewers and stormwater drains concentrate rainfall very quickly and allow rapid runoff, although this effect will be mitigated by the generally flat terrain at Tara-Ika. In urban areas, the natural drainage network may be destroyed completely (often filled in to provide float land for buildings etc.) and replaced with an artificial 'channel' system designed to accommodate runoff from a specific design event.

    (d) The drainage of swamps and bogs. During storms these areas act as 'ponds' which slow runoff, reducing the magnitude of the flood peak and attenuating the flood event.

(e) Modification of the landform may also alter stream slope and catchment area, affecting the timing and volume of runoff.

55. The development of Tara-Ika will therefore affect runoff processes. Depending on the scale of development, and the mitigation measures adopted, urbanisation can cause floods to occur more frequently, peak higher and faster given the same rainfall event, have a greater volume, but also subside more quickly.

56. HDC has suggested that the hydrological effects of the proposed land use change will be avoided and mitigated through the use of on-site soakage and treatment and a Zero-discharge strategy.

TARA-IKA STORMWATER MANAGEMENT

57. HDC has provided a Technical Memorandum that summarises the *"Tara-Ika Growth Area: Summary of stormwater management analysis and strategy".*[1] The purpose of the memorandum was to summarise the stormwater analysis that has been completed and present a recommended stormwater management strategy and design criteria for the Tara-Ika Growth Area.

58. While the memorandum, and specifically its appendices, do provide some results of field investigations and analysis, it remains largely a strategy document. While some information is provided on various elements of this strategy, I believe that it is not possible to provide a robust assessment of its likely success with the information available currently.

59. Fundamental to the proposed stormwater management strategy are:

(a) the nature of the existing flood hazard; and

(b) the location and dynamics of existing overland flow paths.

60. In my opinion, the standards suggested are conservative (i.e. greater design rainfalls and the potential effects of climate change than could have been adopted); however, whether these standards will be implemented remains largely unknown. These standards will act as a major constraint and whether they can be implemented will depend on the final configuration of the Tara-Ika Growth Area. Experience in other areas around New Zealand suggests that

[1] Appendix 9 to the HDC Section 42A Report (page 231 of the appendices PDF).

on-site soakage is significantly more problematic, and more prone to failure, than anticipated at the planning or consenting stage.

61. The key interrelationships between development within the Tara-Ika Growth Area, the stormwater management strategy, and the Ō2NL Project are identified, but only at a very high level. These linkages are critical to the success of stormwater management within the Tara-Ika Growth Area, including the proposed Ō2NL Project corridor.

Zero-discharge approach

62. The culmination of the stormwater planning, analyses and investigations has led the applicant to adopt the current preferred strategy, referred to as the *"Zero-discharge Approach"*. Under this approach, all stormwater runoff up to the 100-year ARI event, including the effects of climate change, is retained within the development area and ultimately discharged to the ground. The key components of this approach include:

    (a) capture of runoff from roofs for reuse in dedicated greywater systems;

    (b) soakage of runoff from roofs (in excess to that needed for re-use), up to the 10-year ARI storm in on-lot soakage devices;

    (c) conveyance and treatment of runoff from all non-roof impervious surfaces in stormwater treatment wetlands, located primarily within the Ō2NL Project corridor;

    (d) retention and soakage of runoff up to the 100-year ARI flow (including climate change effects) in soakage basins. Ideally these basins are co-located with the treatment wetlands; however, the expected footprint requirements of the basins will require flexibility in siting; and

    (e) discharge of runoff in excess of the 100-year ARI event within the Ō2NL Project corridor or along existing overland flow routes.

63. This approach is argued to provide HDC and landowners with greater certainty and confidence in the feasibility of stormwater servicing in the Tara-Ika Growth Area in terms of consenting, and a clear way forward to enable development to proceed. This approach, and some of its key components, especially during larger rainfall events, is intimately associated with the Ō2NL Project.

64. As part of the initial development of the Zero-discharge Approach, GHD undertook a high-level stormwater runoff analysis to determine conceptual

wetland and soakage basin footprints using relatively conservative assumptions around development density and soakage capacity. This analysis confirmed that a Zero-discharge strategy was possible for the proposed Tara-Ika Growth Area. However, this conclusion is contingent on:

(a) the baseline environment with regard to the existing flood hazard and overland flow paths;

(b) the design rainfall and climate change parameters adopted;

(c) the density of development within the Tara-Ika Growth Area; and

(d) the design parameters adopted for detention storage, wetland treatment etc.

65. Implementation of the Zero-discharge Approach and Tara-Ika Stormwater Management Strategy are intimately connected to the Ō2NL Project and its stormwater management devices.

66. There are both synergies and potential risks associated with the interaction of stormwater management at Tara-Ika and the proposed Ō2NL Project. For example, there are advantages for all stormwater from both projects to be treated in an integrated and holistic manner. However, treatment devices for an integrated scheme will need to be larger or more numerous. The optimum location of treatment devices for the Ō2NL Project may also not be those best suited for Tara-Ika. Furthermore, the greater discharge of overland flow from Tara-Ika into the Ō2NL Project, during large design events, has implications for the security and resilience of the Ō2NL State Highway, if not appropriately managed.

Conclusions

67. In my professional opinion:

(a) The proposed development of, and the stormwater management strategy for, the Tara-Ika Growth Area needs to be placed in the context of the existing environment, particularly the existing flood hazard and overland flow paths.

(b) Despite the existing flood hazard, it is likely that the Zero-discharge Approach could be implemented at some level. The key variables when applying this strategy will be the density of development, and the structure and spatial arrangement of the Tara-Ika Growth Area.

(c) Stormwater management at Tara-Ika will need to move from being a 'strategy' to being 'operationalised' i.e. how will it function?

(d) Optimising the Zero-discharge Approach, while minimising any risk, will need to be informed by comprehensive hydrological modelling; using both continuous time series as well as specific design events. It is only through the use of continuous time series that antecedent conditions can be incorporated into the development. There is currently considerable uncertainty in the hydrological behaviour of the site and wider environment.

(e) Any stormwater management strategy for the Tara-Ika Growth Area is intimately connected with the Ō2NL Project.

(f) It is essential that HDC works with Waka Kotahi to optimise stormwater management in the area. There are advantages if all stormwater from both projects is treated in an integrated and holistic manner.

PRACTICAL EXPERIENCE

68. A 'Zero-discharge' approach to stormwater management is not unique to the Tara-Ika Growth Area. Such an approach has been used by various other councils around New Zealand, including Waipā District.

69. I worked with Waipā District Council (**WDC**) to develop the on-site soakage guidelines applied to various urban developments throughout their district.

70. For example, the Cambridge North Structure Plan[2] promotes maximising on-lot and on-site soakage to manage stormwater runoff; and to reduce the actual or potential adverse effects of the development and associated stormwater discharge on the receiving environment. With respect to managing stormwater, the Structure Plan proposed managing stormwater to:

(a) maximise soakage of stormwater;

(b) provide sufficient drainage paths to prevent flooding of sections;

(c) provide detention of stormwater prior to discharge to ensure that existing flood conditions within the Mangaone Stream are not adversely affected; and

[2] Waipā District Council (WDC) 2004: Cambridge North Deferred Residential Zone Structure Plan (Decisions version). Report prepared for Waipā District Council by Tonkin & Taylor, February 2004.

(d) provide treatment of stormwater to improve the quality of any discharged stormwater.[3]

71. The Cambridge North Residential Zone (**CNRZ**) is located north of Cambridge in the Waikato. It covers an area of approximately 175ha, and forms part of a larger rural catchment of approximately 827ha that drains to Mangaone Stream.

72. The CNRZ lies on material from the Hinuera Formation, which is a previous floodplain of the Waikato River. This has major implications for on-site soakage. For example, the area is predominately flat to gently undulating, with only a 4m elevation change across the CNRZ. This means that the hydraulic gradient is also flat, leading to relatively slow groundwater drainage. The CNRZ therefore has a very similar origin, topography and characteristics as the Tara-Ika Growth Area.

73. To facilitate and maximise the use of on-site stormwater soakage, WDC prepared guidelines covering the testing and analysis required to underpin the design of soakage devices within Cambridge North.[4]

74. Those initial guidelines were subsequently updated: to incorporate additional groundwater monitoring data; include the implications of this data on soakage design; and to take account of additional knowledge gained through construction activities and the poor performance of some soakage systems.[5] It was noted at the time that:

> *Some soakage devices already installed within Cambridge North have performed very poorly and have required remediation works. Of particular importance to the performance of on-site soakage systems is the presence of silt and/or clay horizons or lenses within the soil profile. Experience at Cambridge North has shown that even thin, relatively impermeable layers may significantly reduce the performance of a soakage device. Similarly, high groundwater is also likely to cause poor performance.*

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[3] Tonkin and Taylor 2010b: Cambridge North Residential Zone Structure Plan, Stormwater Modelling Report. Report prepared for Waipā District Council, June 2010. 73p + appendices.

[4] Tonkin and Taylor 2004: Cambridge North Residential Zone, Guidelines for On-site Stormwater Soakage. Report prepared for Waipā District Council, June 2004.

[5] Tonkin and Taylor 2010a: Cambridge North Residential Zone, Guidelines for On-site Stormwater Soakage. Report prepared for Waipā District Council, May 2010. 11p + appendices.

75. A peer review of the revised guidelines identified that there were still a number of issues relating to the use of on-site stormwater soakage.[6] In particular, questions remained regarding:

(a) the inferred depth to groundwater, and groundwater level variability;

(b) the general appropriateness of the CNRZ for on-site stormwater soakage;

(c) the methodology for determining *in situ* soakage rates at a specific site;

(d) the methodology for determining the size of soakage devices; and

(e) the subjectivity necessary when assessing results and consent applications.

76. It was concluded that:

(a) under certain conditions on-site soakage can be an effective and efficient method of stormwater management;

(b) effective soakage systems, however, require both a high moisture storage potential within the soil, and relatively rapid soakage through the soil;

(c) the characteristics of the CNRZ can constrain the potential effectiveness of on-site soakage. Highly variable groundwater conditions and subsurface permeability result in considerable uncertainty regarding the potential soakage conditions at specific sites; and

(d) experience in other areas has shown that soakage devices have a high failure rate, often caused by silt and clay in the stormwater clogging the surfaces of the drainage device. This is a potential problem in the CNRZ because of local conditions.

77. I was therefore asked to update the soakage guidelines with the aims of providing:

(a) a technical review of the information available relating to the physical characteristics of the CNRZ which affect on-site soakage;

[6] Opus, 2010: Waipā District Council; Stormwater soakage guidelines – peer review. Report prepared for Waipā District Council by Opus International Consultants Ltd, August 2010, Project No. 3-CW798.00/1ES

(b) information necessary to assess the potential of on-site soakage devices to manage stormwater within the CNRZ;

(c) a robust testing procedure to assess the on-site soakage potential at specific locations;

(d) a simple, consistent methodology for assessing the soakage potential at specific locations;

(e) a simple, consistent methodology for designing on-site soakage devices;

(f) consequently, a standard procedure to assist developers and others in assessing on-site soakage potential;

(g) guidance to WDC staff for assessing consent applications which involve the use of on-site soakage devices to manage stormwater; and

(h) information to support and complement an update of the CNRZ Structure Plan.

78. It was noted that the default position is that *"on-site soakage should only be adopted where detailed site-specific analyses have confirmed its potential effectiveness."*

On-site soakage

79. The objective of on-site soakage is to maximise the disposal of stormwater runoff within the immediate area. This reduces the environmental impact of urban development and retains the pre-development catchment characteristics with regard to ground soakage and runoff during small rainfall events. On-site soakage can also provide significant advantages with regard to water quality; particularly reducing total suspended solids which are removed by the natural filtering processes operating within the soil profile.

80. With regard to the Tara-Ika Growth Area, on-site stormwater runoff from roofs and driveways during frequent rainfall events can potentially be disposed of via appropriately designed soakage devices on individual lots. However, local variations in drainage properties can result in significant changes in potential drainage behaviour over short distances. Successful on-site soakage at any location does not guarantee that a similar system will function adequately on an adjacent property. Therefore, prior to adopting soakage devices as the preferred method of disposing of stormwater a detailed site assessment is

essential. Failure to complete appropriate investigation and testing will compromise the likely success of any stormwater management solution.

81. To be effective, on-site soakage requires:

    (a) sufficient empty pore volume within the profile above the groundwater level to 'store' storm runoff;

    (b) a hydraulic conductivity within the unsaturated zone sufficient to transmit any rainfall to the empty pores above the water table; and

    (c) a soakage device to buffer the difference between the timing of surface runoff and its volume, and the hydraulic conductivity and storage of the soil.

82. The efficiency and effectiveness of on-site soakage can therefore be adversely affected by:

    (a) a rise in groundwater level, reducing storage;

    (b) low permeability strata or lenses, restricting subsurface flow;

    (c) under-sized soakage devices, which cannot contain the storm runoff; and

    (d) poorly maintained soakage devices, with reduced permeability.

83. Experience in other areas has shown that soakage devices have a high failure rate, often caused by silt and clay in the stormwater clogging the surfaces of the soakage device.[7] It is therefore essential that a pre-treatment facility is integral to the design of all on-site soakage devices.

Subsequent experience

84. Prior to preparing this evidence, I contacted WDC to enquire as to their experiences with on-site soakage. In general, on-site soakage has not worked as efficiently and effectively as had been hoped.

85. Robin Walker, Programme Manager, WDC reported that *"I can only comment in terms of the council infrastructure in CBN which pessimistically was essentially designed assuming the private on-lot devices gave minimal effect.*

[7] Auckland City Council 2003: Soakage design manual. 39p + appendices.

Holistically, Council promotes on-lot device installation on build but we are poor on ensuring their continual use, maintenance and general status as fit for purpose."

86. Tony Coutts, Senior Development Engineer, WDC reported that *"On the consenting side, we have had difficulty with consultants trying to use other acts (Building Act in particular) to avoid compliance to the strategy. We are able to manage this accordingly with stating adherence to the overarching SW discharge permits, but it doesn't stop the combativeness of having to alter the initial design. Communication with the developers on these requirements and how to they communicate this to the sellers is key. The most effective way is blanket consent notices referring to specific design standards which developers do not like, but it is effective in terms of compliance.*

As the subdivisions are within the 2–5 year mark, there haven't necessarily been too many onsite complaints, but time will tell if lot owners keep up the maintenance of such devices."

87. Ricardo Duffy, Stormwater Engineer, WDC provided two examples of situations where there have been issues with on-site soakage. *"The first is an industrial area on Allwill Drive where perforated pipes have been used to provide on-site soakage. The perforations have become blocked with silt and the system does not handle higher intensity rainfalls. Despite undergoing annual maintenance, there are still issues with silt blocking the perforations and reducing the effectiveness of the devices.*

The Pukekura Subdivision is all on-site soakage. However, silt blocks the catch pits and, despite the subdivision being only 2-3 years old, two streets flooded during a recent rainfall event."

88. It is generally recognised that on-site soakage, particularly in higher density residential areas, can be problematic. The efficiency and effectiveness of on-site soakage is often less than anticipated when that stormwater treatment option was promoted.

STORMWATER MANAGEMENT WITHIN THE Ō2NL PROJECT

89. The Ō2NL Project will pass through the western extent of the Tara-Ika Growth Area and consequently will receive any runoff from the area to the east (*Figure 7*).

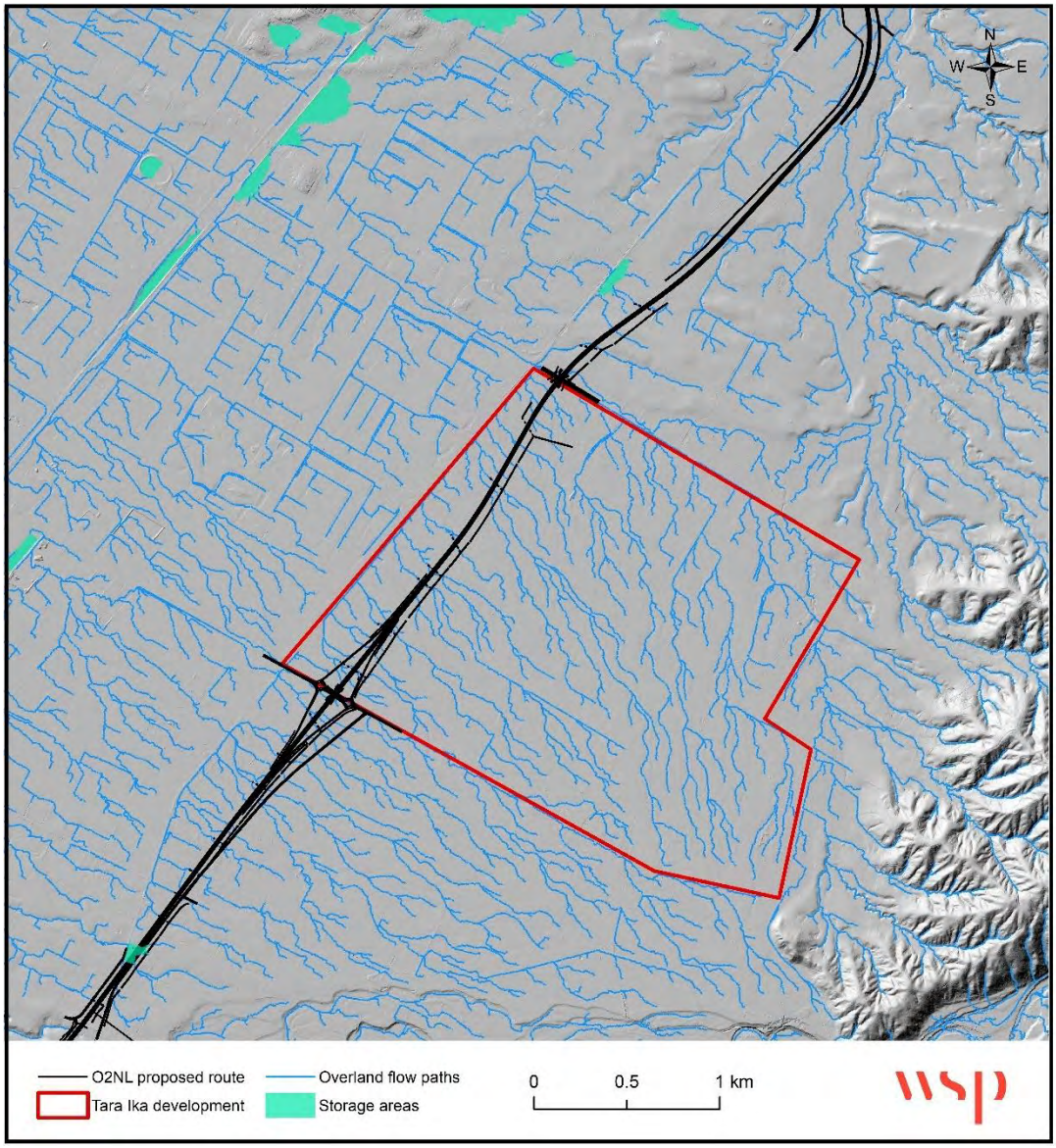

Figure 7: Location of the O2NL Project corridor and potential overland flow paths through Tara-Ika.

90. The design of stormwater management and treatment for the construction and operation of the Ō2NL Project is aligned with the design specifications of Waka Kotahi who continue to engage with iwi project partners, stakeholders and regulators. The aims of the stormwater design philosophy, with potential relevance to Tara-Ika, include:

(a) managing the flood risk upstream of the main alignment by allowing for sufficient flow area under the carriageway;

(b) allowing passage of flows under the highway and discharge within the same catchment wherever practical and to follow the existing landform;

(c) providing safe overland flow paths in times of extreme flooding;

(d) providing for fish and aquatic organism passage and access to upstream catchments where required;

(e) providing for natural stream bed mobility processes through culverts and bridges;

(f) creating conditions for the development of appropriate ecological habitats in constructed stream diversions;

(g) managing peak discharge from the main paved alignment to be equal to, or less than, existing flow rates;

(h) treating runoff from all new impervious surfaces to reduce waterborne contaminants and sediment to protect the receiving environment;

(i) adopting water sensitive design solutions such as treatment swales, wetlands and/or other appropriate devices; and

(j) providing drainage via open channels and avoid piping where possible.

91. The Ō2NL Project runs predominantly north/south past Tara-Ika while most of the watercourses run east/west from the hills to the sea (*Figure 7*). Therefore, the Ō2NL Project crosses several watercourses that drain excess runoff from Tara-Ika.

92. These flow paths are permanent, intermittent, or ephemeral. Generous culverts will retain near-normal stream flow conditions during low to medium flows and allow significant storm event runoff (meeting the specifications of the Bridge Manual for a 1% AEP flood in 2130 including the potential effects of predicted climate change) and sediment to pass Ō2NL.

93. The Ō2NL Project's stormwater run-off collection, conveyance systems are designed to manage up to a 1:100 AEP event, including the predicted effects of climate change. The initial surface and collection systems are designed to accommodate a 10-minute duration rainfall event.

94. Stormwater will be shed from the road as sheet flow, and in the vicinity of Tara-Ika, into one of the following:

(a) Vegetated batter slopes: These will occur where the road is constructed in a fill and the vegetated swale is lower down the fill slope. Some stormwater runoff treatment is available where sheet flow can percolate

over and through heavily vegetated fill batter slopes before draining into the swales.

(b) Open channel vegetated swales: The swale surface will be lined with selected vegetation appropriate to the road environment and useful for long-term side slope stabilization under stormwater flow conditions. The vegetation will be selected for mature size constraints and in the base of the channel they could be used for some stormwater pre-treatment qualities.

(c) Open channel conveyance swales: In areas where conveyance of flows is of prime importance, the swale can contain fewer plants and more grass or stone coverage to reduce the size of the cross section compared to the flow. The swale will afford negligible treatment to flows.

95. Stormwater will be collected and conveyed to the primary low points along Ō2NL and discharged into pond areas before finally discharging into the receiving environment. Besides the visual and ecological amenity provided by the vegetation and spaces, the pond areas will provide the following functions as part of stormwater management and mitigation of stormwater collection:

(a) Water quality treatment: Part of the pond area (likely around 25-35% of the total area) will be a dedicated constructed wetland designed to pass the water quality rainfall event (up to 10mm/hr rainfall intensity) and treat the runoff to remove >75% of contaminants including hydrocarbons, particulates, heavy metals, litter, plastics, and other road runoff contaminants.

(b) Infiltration and soakage to ground (where feasible): Where soils allow, treated stormwater at the end of the constructed wetland, or inside the attenuation parts of the pond areas, can be disposed to soakage galleries or infiltration fields.

(c) Attenuation of peak discharge rate: The overall pond areas will have a holding volume up to the 24-hour duration, 1% AEP flood flow minus a throttled outlet flow volume. The pond area will be held until the throttled outlet flow discharges the volume into the receiving environment at a rate that is low enough to minimise downstream scour and flooding effects.

(d) Discharge to receiving watercourses: The final point of discharge from the stormwater pond areas will include specifically designed orifice outlets to control pond water level and throttle outflow. The outlet orifice

will be designed to optimise the available pond volume up to the 1% AEP design event. Larger events will also flow out of the pond via the designated overflow spillway.

96. A key outcome of this design philosophy is therefore the use of swales and wetlands to both attenuate and treat runoff from Ō2NL. Infiltration to ground will be encouraged to maintain the existing water balance. Wherever possible, existing hydraulic connections, both laterally and vertically will be maintained and enhanced. This design philosophy is therefore very similar to the Zero-discharge approach proposed for Tara-Ika.

INTERACTION OF TARA-IKA WITH Ō2NL

97. As described above, stormwater management and treatment of runoff from Ō2NL will use the natural topography of the landscape for the formation of swales and wetlands. These will principally be on the upslope i.e. eastern, side of the State Highway in the vicinity of Tara-Ika so that they can treat and attenuate runoff before discharge to the lower catchments.

98. The stormwater treatment devices will be optimised to achieve the maximum efficiency and effectiveness of treatment in a given location.

99. These treatment devices, however, will be located in areas which currently receive excess runoff from that area in which Tara-Ika will be developed. Consequently, any increased runoff as a result of the development of Tara-Ika will impact on the efficiency and treatment provided for runoff from Ō2NL.

100. The Zero-discharge strategy for Tara-Ika clearly states that any runoff, in excess of that which can be 'managed' on site, will be discharged to the Ō2NL corridor.

101. Consequently, it is essential that any stormwater management strategy for Tara-Ika considers, and accommodates, any potential effects on the efficiency and effectiveness of stormwater management and treatment associated with Ō2NL.

102. The increased runoff from Tara-Ika, and its potential effects, should be clearly identified and quantified. This is critical for 'over design' events. How this increased runoff will interact with the stormwater management and treatment system for Ō2NL should also be quantified.

103. Absent an integrated solution, any increased runoff from Tara-Ika will mean that the capacity and efficiency of the treatment devices associated with Ō2NL State Highway will be compromised more often, and to a greater degree, than their design specifications.

OPTIONS FOR INTEGRATED STORMWATER MANAGEMENT

104. Given the existing natural and inherent interaction of stormwater runoff from both Tara-Ika and the Ō2NL Project, integrated stormwater management is essential.

105. In my opinion, the potential effects of the Ō2NL Project on stormwater runoff are much easier to define and quantify than the potential effects of Tara-Ika.

106. Integrated management of stormwater could start with identification and quantification of the location and volume of stormwater runoff able to be stored and treated upstream of Ō2NL, both within the designation and further upstream. This would then set the maximum amount of runoff from both sources that can be stored and treated.

107. An initial estimate of the potential volume of runoff able to be stored could be obtained using a high resolution Digital Terrain Model (DTM). An example of this, assuming that Ō2NL raises the terrain by one metre, is shown in *Figure 8*.

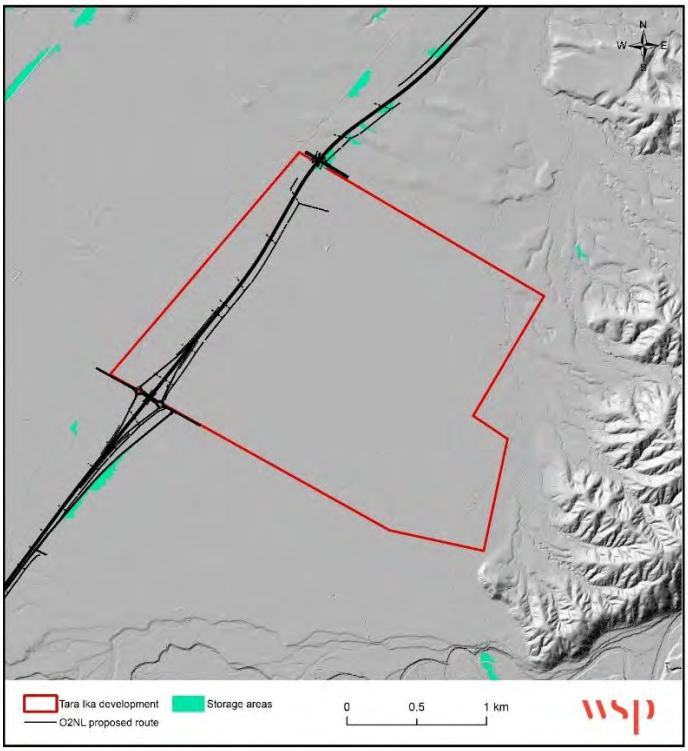

Figure 8: Example of potential flood storage areas assuming the O2NL Project raises the terrain by one metre relative to existing ground level.

108. Once the volume of the treatment devices required for Ō2NL has been determined, then the residual volume available to store and attenuate runoff from Tara-Ika can be clearly defined. Responsibility for developing the total volume of runoff storage, attenuation and treatment could then be allocated.

109. Once the total availability of stormwater storage available to support the development of Tara-Ika is defined, a clear and precise stormwater management strategy should be developed for the Tara-Ika Growth Area. This strategy should provide for the complete and holistic development and not a discrete series of 'developments' within the wider Tara-Ika Growth Area.

110. Given the possibility that the Zero-discharge strategy does not work as envisaged, HDC should also have a 'Plan B' to manage any additional runoff from Tara-Ika. It should not be assumed that this runoff can be 'passed' downstream to the Ō2NL treatment devices (absent an integrated and agreed approach between Waka Kotahi and HDC).

111. Landowners / developers will need to commit to complying with that overall strategy, and to continue maintaining any stormwater treatment devices on their property.

112. Because of the integrated nature of stormwater runoff from Tara-Ika and the Ō2NL Project it is critical that a holistic stormwater management plan be developed by both Waka Kotahi and HDC. Failure to do this will likely lead to issues should the management of stormwater and flooding be problematic at some stage in the future.

113. Partly because of the relative timing of PC4 and Ō2NL, it is not possible to have in place a precisely calibrated, integrated stormwater strategy at this stage. I have therefore noted the new provisions in the section 42A report from HDC and support their general intent. In particular, I support:

    (a) the design event being the 1% AEP rainfall, increased to allow for the predicted effects of 100-years of climate change;

    (b) the Zero-discharge strategy for the disposal of all stormwater within the Tara-Ika Growth Area; and

    (c) the requirement for developers to demonstrate a robust approach to stormwater, supported by comprehensive field testing, including the provision of a stormwater management plan.

114. However, until there is a precisely calibrated hydrological model and an integrated stormwater strategy for both Tara-Ika and Ō2NL, it is important the final provisions of PC4 appropriately place the onus for dealing with stormwater on developers / landowners. I believe that this onus must be ongoing and not just during, and immediately following, site development which tends to be the experience in other locations around New Zealand.

115. Ms McLeod has recommended amendments to the provisions to that end, which I support. In particular, I consider:

    (a) Under Rule 15A.7.1.1 (a) the Matters of Control should include the exacerbation of the existing flood hazard.

    (b) Under Rule 15A.8.1.1 (i) A -the word 'disposed' needs to be changed to 'discharged to ground', which I think is the intention.

    (c) Under Rule 15A.8.1.1 (i) E "expected maintenance" in my opinion is too weak and this should be changed to 'required maintenance'. For the same reason as above, the reference to disposal should be 'discharged to ground'.

    (d) Under Rule 15A.8.1.1 (i) E – the paragraph starting "Overland flow …" is currently misleading and contradictory to the stated design standard. The clause should apply to events greater than the 100-year ARI or 1% AEP rainfall event.

116. In my opinion, the provisions should require appropriate implementation by developers. This should include appropriate drainage standards, measurement techniques, and monitoring standards. On-site soakage must be supported by site-specific testing and analysis on each individual lot. Responsibility for the ongoing efficient and effective functioning of any on-site soakage device should remain with the developer for a minimum of 10-years.

117. Finally, the provisions should require that the stormwater treatment in Tara-Ika align with treatment of runoff from Ō2NL. This alignment should ensure that there is no adverse impact on Ō2NL from runoff from Tara-Ika.

Dr John (Jack) McConchie
2 November 2021

Submitter 04/34 WKNZTA Evidence – Urban Design

BEFORE THE HOROWHENUA DISTRICT COUNCIL
INDEPENDENT HEARING PANEL

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	the hearing on the Horowhenua Proposed District Plan Change 4 – Tara-Ika Growth Area

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STATEMENT OF EVIDENCE OF GAVIN CRAIG LISTER ON BEHALF OF WAKA KOTAHI NZ TRANSPORT AGENCY

Integrated Design

Dated: 2 November 2021

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INTRODUCTION

1. My full name is Gavin Craig Lister. I am a landscape architect and urban designer. I am a founder of Isthmus Group, a practice that specialises in landscape architecture, architecture, and urban design.

2. I have been engaged by Waka Kotahi NZ Transport Agency (**Waka Kotahi**) to provide expert technical support on the integration of infrastructure and urban / landscape design in relation to the Horowhenua Proposed District Plan Change 4 – Tara-Ika Growth Area (**PC4**).

Qualifications and experience

3. I have the following qualifications and experience relevant to this evidence:

   (a) Master of Urban Design (University of Sydney, 2007).

   (b) Post-graduate Diploma in Landscape Architecture (Lincoln College, 1988).

   (c) Bachelor of Arts (University of Auckland, 1985).

   (d) Fellow and registered member of Tuia Pito Ora – New Zealand Institute of Landscape Architects (NZILA).

4. I have 33 years' experience providing design input to, and assessing the effects of, different project types throughout New Zealand. Relevant experience to this hearing includes:

   (a) Master planning and evidence in support of plan changes for mixed density urban developments, including:

      (i) Hobsonville Point in Auckland;

      (ii) 'The Mission' in Napier; and

      (iii) 'Clayden Road' (North Warkworth) PC40, in Auckland.

   (b) Acting as an advisor to Councils for urban development, including the Board of Inquiry into the Ruakura Plan Change, subsequent Ruakura Variation to Proposed Hamilton District Plan, and the Iona Plan Change to the Hastings District Plan.

   (c) Acting as an Independent Commissioner for Plan Changes for land rezoning for urban development, including the former Tamaki Campus of Auckland University, PC5 Whenuapai (still in progress), PC12 Hobsonville, and PC13 Cromwell, Central Otago.

(d) Membership of Auckland Council's Panel of Independent Commissioners (2014-present), the Auckland Council Urban Design Panel (2007-2017), and Eke Panuku's Technical Advisory Group (2018-present).

(e) Familiarity with assessment and resource management matters as they relate to landscape, visual, and urban design matters. I wrote the landscape and urban design assessment guidelines for Waka Kotahi NZ Transport Agency (**Waka Kotahi**) and co-authored '*Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines*', for Tuia Pito Ora / NZILA, 2021.

(f) Assessment and design for infrastructure projects, including the Auckland East-West Link urban highway, the Basin Bridge project, Transmission Gully highway, and the Urban and Landscape Design Framework (ULDF) for Ara Tūhono (the Pūhoi to Warkworth highway) and Albany Highway.

Code of conduct

5. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014. This evidence has been prepared in compliance with that Code, as if it were evidence being given in Environment Court proceedings. In particular, unless I state otherwise, this evidence is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Scope and summary of evidence

6. My evidence considers the anticipated development of Tara-Ika and the provisions of PC4 from an urban design, landscape, and amenity perspective. In doing so I focus on how the proposed Ōtaki to North of Levin Project (**Ō2NL**) has been or could be integrated into the planned overall development of Tara-Ika.

7. My evidence is that it is good practice to integrate urban development and infrastructure, and that such integration should be reflected in the PC4 provisions with respect to Tara-Ika and Ō2NL. Objectives and policies relating to such integration should specifically address Ō2NL, and the provisions that apply to 'Arapaepae Rd Special Effects Overlay' should in general terms also apply to the interface between Tara-Ika and Ō2NL. Such

provisions would promote efficient development and good quality design. I make suggestions in my evidence to that end.

Ō2NL DEVELOPMENT AND ROUTE SELECTION

8. I have been involved with Ō2NL since 2011. During this time, I provided input to the route selection process and urban / landscape design matters. I participated in meetings with Council, mana whenua, and the community, and provided input to multi criteria analysis (**MCA**) processes. In summary, the route selection firstly identified a broad eastern corridor in preference to western or central corridors. The eastern corridor included passing to the east of Levin. Alternative routes within the eastern corridor were then compared at finer scales.

9. As part of the MCA processes, in May 2017 I prepared a memo comparing routes N4 (effectively the current proposed Ō2NL route) and N5 (which swung in an arc roughly 1km to the east of Levin) in terms of both the 'Greenbelt Residential Deferred' zoning and Structure Plan 13 in effect at the time, and investigations that Horowhenua District Council were undertaking into potential urban development in the area east of Levin.

10. In March 2018 I prepared a report[1] comparing four route options (N4, N5, N8, and N9)[2] in terms of the District Plan provisions (Greenbelt Residential Deferred' zoning / Structure Plan 13) and the draft 'Horowhenua Growth Strategy 2040' that had been released for consultation the previous month (February 2018).[3] That strategy envisaged urbanisation of part of the area east of Levin. A concept plan had also been developed referred to as 'Gladstone Green' which illustrated how development might occur.

11. My report favoured N9 with respect to the urbanisation signalled in the draft Growth Strategy because that route most closely coincided with the perimeter of the identified potential urban development area. Option N4 (the current Ō2NL route) was considered less favourable because it would sever the potential urban area from Levin and cause amenity effects for housing on both sides of the highway. Option N4 did, however, fit the district plan provisions in place at the time because it would provide a boundary between the urban area and the planned semi-rural large lot residential character. It was also adjacent to the transport corridor depicted on Structure Plan 13.

[1] Implications of Route Options on Eastern Growth Area Levin, 1 March 2018, Gavin Lister, Isthmus.
[2] Routes N4 and N5 are described above. N9 followed a straight alignment parallel with the edge of Levin and roughly 1km to the east (adjacent to a transmission line). N8 swung in an arc roughly 2km east of Levin adjacent to the hills.
[3] Horowhenua District Council, 'Horowhenua Growth Strategy 2040 Draft for Consultation', February 2018.

TARA-IKA STRUCTURE PLAN

12. In July 2021 I reconsidered[4] three of the route options (N4, N5, and N9)[5] in light of proposed Plan Change 4 and the Tara-Ika Structure Plan, which presents a different situation from that considered earlier.

13. The proposed Tara-Ika Structure Plan (which is based on a master plan prepared by McIndoe Urban and Local) covers a larger area than indicated in the earlier draft Growth Strategy and Gladstone Green concept. It includes higher density development and is more integrated around a local centre. Route N4 (i.e. Ō2NL) crosses near the edge of this precinct, thereby reducing potential effects on its planned neighbourhood centre and internal connectivity. Whereas the N9 option was near the edge of the urban area depicted earlier, it would pass through the middle of Tara-Ika.[6] The report therefore concluded that, if the proposed PC4 had been in place at the time, option N4 would have been the preferred option. This is hardly surprising given that the proposed Tara-Ika Structure Plan (and PC4) was designed in the knowledge of the Ō2NL corridor. In effect, the larger and more integrated urban area represented by Tara-Ika is a viable response because of the N4 alignment.

14. I consider the Tara-Ika Structure Plan (and the master plan on which it is based) is good urban design. Specifically, it has an appropriate neighbourhood centre, a well-connected internal street network (including active mode paths), and sensible connections between Tara-Ika and Levin given the constraints of the existing SH57 and the planned Ō2NL. It provides for a mix of residential typologies including higher density development around the centre. It has an open space network that is connected and accessible to the community. The grid-like form is consistent with Levin's character (its sense of place) and with the flat natural setting backdropped by hills.

15. While Ō2NL will unavoidably create severance between Tara-Ika and Levin, as does the existing SH57, the proposed structure plan addresses that by configuring the street network to the two existing arterial roads of Queen Street East and Tararua Road, and a central spine road on the Liverpool Street alignment. The structure plan also indicates two additional 'strategic

[4] Proposed Plan Change 4 (Taraika Growth Area)', Landscape + Visual + Urban Design, 14 July 2021, Gavin Lister, Isthmus.
[5] N8, the most eastern option, was eliminated earlier. It was not favoured from a landscape perspective because of its effects on the Gladstone and Denton Road areas.
[6] N5 would similarly have passed through the middle of Tara-Ika through the neighbourhood centre. It would have been considered a fatal flaw.

cycleways' over Ō2NL: The northern of these aligns with Meadowvale Drive and provides access to Waiopehu College, and the southern aligns with the southern side of Levin's residential areas and would provide an alternative to negotiating the highway interchange on Tararua Road.

16. A MCA process is currently in process to examine options for connections between Levin and Tara-Ika. Representatives of Horowhenua District Council have participated in this process.

17. In summary, the route planning for Ō2NL and plans for the future urban development east of Levin have been carried out cognisant of each other over several years. The Tara-Ika master plan is designed in response to Ō2NL, and the Ō2NL design has been (and continues to be) tailored in response to proposed urban development. I consider this represents good practice and an integrated approach.

PLAN CHANGE 4 PROVISIONS

18. However, I consider that integration is not fully reflected in the proposed Plan Change 4 objectives and policies, and in the rules relating to the interface between Ō2NL and urban development.

Objectives and policies

19. The 'Issues Discussion' does acknowledge the severance risk created by the preferred Ō2NL alignment and the existing SH57. It says that the Tara-Ika master plan responds to such risks to achieve "*a **connected and integrated** future-proof development that represents good urban design and provides a high level of residential amenity*." It says, "*it is important that subdivision, development, and land use activities **are coordinated** to occur in locations and at densities that enable sustainable and efficient use of land and delivery of infrastructure and contribute to a high amenity environment.*" (**emphasis added**).

20. However, despite identifying the importance of such coordination and integration, Ō2NL is mentioned only one other time in PC4 (to help explain why a commercial centre is important within Tara-Ika). The Plan Change introduction does not mention Ō2NL despite the corridor being a significant element of the Tara-Ika master plan and the Wellington Northern Corridor (of which Ō2NL is part) being a factor supporting the growth on which Tara-Ika is based.

21. Objective 6A.2 does refer to coordination of infrastructure and urban development in general terms. It states that "***Efficient delivery of infrastructure*** *within Taraika will enable development while protecting environmental values and achieving a high level of* ***residential amenity***." Policy 6A2.2 is to "*Require subdivision and development to be managed, designed and staged* ***to align with the coordinated provision and upgrading of the infrastructure network*** *(including roading network), public open space, streetscape and local service facilities within the Taraika, as illustrated on Structure Plan 013*" (**emphasis added**).

22. In summary, the integration and coordination, and the resultant good urban design and amenity outcomes, identified in the issues, objectives and policies would be more clearly promoted by directly framing objectives and policies with reference to the planned Ō2NL project. This would represent efficient integration of development between Ō2NL and Tara-Ika. It would also be consistent with Objective 6(a) of the National Policy Statement on Urban Development (**NPSUD**) that local authority decisions on urban development that affect urban environments are integrated with infrastructure planning and funding decisions.

Rules: Arapaepae Road Special Treatment Overlay

23. Structure Plan 013 identifies an 'Arapaepae Rd Special Effects Overlay'[7] which covers the area between the existing SH57 and the Ō2NL corridor indicated on the Structure Plan. Within the overlay, development is a restricted discretionary activity (Rule 15A.3.2(a)). The **matters of discretion** comprise:

    (i) reverse sensitivity effects including noise, vibration, visual, and traffic;

    (ii) compatibility with surrounding and anticipated land uses; and

    (iii) safe and efficient access.

    The **conditions** require buildings to be constructed to maintain specified "indoor noise levels[8] from Arapaepae Road / State Highway 57", including the provision of ventilation / cooling if achieving such noise levels rely on windows being closed, and the provision of an acoustics report with building consent applications (Rule 15.8.1.1). These measures are a sensible and

[7] Note that Rules 15A.8.3.2 and 15A.8.1.1 refer to the "Arapaepae Road Special **Treatment** Overlay" while the Structure Plan refers to the "Arapaepae Rd Special **Effects** Overlay".
[8] For example, 40dB $L_{Aeq(24h)}$ for residential living and sleeping spaces (including visitor and retirement accommodation)

integrated approach with respect to SH57. The same general approach to Ō2NL would likewise be sensible and represent a coordinated and integrated approach. It would be consistent with Waka Kotahi's submission point 04/34.06 and the amendments recommended in Ms Ainsley McLeod's evidence.

24. To highlight the matter, it is likely that the section of SH57 would be revoked on completion of Ō2NL when the traffic carried by the existing highway is redirected to the new highway. In other words, the rules address the effects of traffic on an existing section of highway that is likely to be revoked, but not the planned redirection of that traffic to the Ō2NL highway corridor depicted on the Structure Plan. This not only misses the opportunity to coordinate urban development with Ō2NL, but also to configure urban design to a repurposed Arapaepae Road which I discuss further below at paragraph 26.

25. If the matters of discretion in Rule 15.8.1.1 (i.e. visual aspects of reverse sensitivity, compatibility with surrounding and anticipated land uses) were generally to be applied to Ō2NL, they would enable the configuration of the street network, lots, and buffer space adjacent to Ō2NL to be considered in a coordinated way. For example, one approach to such situations is to locate single-loaded streets adjacent to the designation so that dwellings have outdoor living spaces on the opposite side to the highway. The separation provided by such local streets increases the buffer from dwellings and provides the opportunity for street landscaping to soften the highway and any noise walls. Such an approach is, in fact, depicted on the non-statutory Tara-Ika master plan.

26. As Mr Chiles explains in his evidence, such an approach can also lend itself to such typologies as terrace housing which helps reduce noise to the wider residential areas as well as containing visual effects. I note such higher density housing is contrary to an aspect of Waka Kotahi's submission point 04/34.02 which sought to restrict density within 100m of the corridor that Waka Kotahi has subsequently decided it no longer wishes to advance, and it would be consistent with Council's recommendation to increase the housing density in this area. It too, would help give effect to the NPSUD.

27. Provisions seeking coordination between urban development and Ō2NL would also enable the urban design to be tailored to the eventual designation boundaries. The Ō2NL corridor indicated on the Structure Plan is relatively wide and the designation boundaries may well be drawn in closer to the highway once the final design is settled. This would enable, for example, the

configuration depicted on the master plan to be refined at the interface with Ō2NL.

28. This may be especially relevant to the narrow area between Arapaepae Road and the Ō2NL corridor. It would represent integrated and efficient design to coordinate urban development of this area to the likely future status of SH57 as a local road, and to suit the final designation boundaries thereby maximising the depth of this sliver of land.

RECOMMENDED AMENDMENTS

29. I consider the recommended amendments to the provisions in Ms Ainsley McLeod's evidence address the matters discussed in my evidence:

    (a) The recommended amendments to Issue 6A.1 and Objective 6A.1 would recognise the importance of integrating urban development and infrastructure in a way that addresses connectivity, amenity, and efficiency.

    (b) The recommended amendments to Policy 6A.1.7 would address effects of state highways on urban development, and vice versa.

    (c) The recommended amendments to Policy 6A.2.2 would promote coordination and integration of urban development and infrastructure and would appropriately respond to the context presented by the existing SH57, its potential revocation, and the planned Ō2NL.

    (d) The recommended amendments to the Structure Plan with respect of the 'Proposed State Highway Overlay' would enable the provisions listed above to address the interface of urban development and Ō2NL (in addition to the existing SH57), and especially the narrow area between the existing SH57 and Ō2NL.

    (e) The recommended amendments to 15A Rules and matters of discretion (15A.8.2.1, 15A.8.2.2(a)(xix)) would be consistent with, and give effect to, the objectives and policies above. They would require that development within the 'State Highway Overlay' be considered with respect of compatibility with the state highway, potential amenity effects (noise and visual) for future residents of the highway, and potential adverse effects of development on the highway network.

Gavin Lister

2 November 2021

Submitter 04/34 WKNZTA Evidence – Noise

BEFORE THE HOROWHENUA DISTRICT COUNCIL
INDEPENDENT HEARING PANEL

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	the hearing on the Horowhenua Proposed District Plan Change 4 – Tara-Ika Growth Area

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STATEMENT OF EVIDENCE OF STEPHEN GORDON CHILES ON BEHALF OF WAKA KOTAHI NZ TRANSPORT AGENCY

Road-Traffic Noise

Dated: 2 November 2021

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INTRODUCTION

1. My full name is Dr Stephen Gordon Chiles. I have been engaged by Waka Kotahi NZ Transport Agency (**Waka Kotahi**) to provide expert technical support in the area of road-traffic noise in relation to the Horowhenua Proposed District Plan Change 4 – Tara-Ika Growth Area (**PC4**).

Qualifications and experience

2. I am an acoustics engineer, self-employed by my company Chiles Ltd.

3. I have the following qualifications and experience relevant to this evidence:

   (a) Doctor of Philosophy in Acoustics from the University of Bath, and Bachelor of Engineering in Electroacoustics from the University of Salford, UK.

   (b) I have been employed in acoustics since 1996, and I have previously held positions as a research officer at the University of Bath, a principal environmental specialist for Waka Kotahi, and as a consultant for the international firms Arup, WSP, and URS, and for the specialist firms Marshall Day Acoustics and Fleming & Barron.

   (c) I was an Independent Commissioner for plan changes for Queenstown and Wanaka Airports and a plan variation for Port Nelson, which dealt particularly with noise effects on sensitive land uses around those sites.

   (d) I have previously been engaged to advise Auckland Transport (roads), KiwiRail (railways), Christchurch City Council (airport) and Environment Canterbury (port) on noise effects on sensitive land uses near different types of infrastructure.

   (e) I jointly led the review of Waka Kotahi's "Guide to the management of effects on noise sensitive land use near to the state highway network",[1] and am currently supporting further review and development of the way Waka Kotahi addresses this issue.

   (f) I advised Waka Kotahi and KiwiRail with respect to draft provisions for a potential National Planning Standard addressing adverse effects on new sensitive land uses, or alterations to existing uses, near road and rail corridors.

[1] Waka Kotahi, Guide to the management of effects on noise sensitive land use near to the state highway network, September 2015.

(g) I have undertaken acoustics assessments and design for various Waka Kotahi projects including Te Ahu a Turanga - Manawatū Tararua Highway, Peka Peka to North Ōtaki, Transmission Gully, Ara Tūhono - Warkworth to Wellsford, Christchurch Southern Motorway 2, Waikato Expressway Cambridge and Tamahere Sections, National War Memorial Park, Tauranga Eastern Link and Mt Victoria Tunnel Duplication.

(h) I was previously responsible for producing draft provisions for Clause G6 of the New Zealand Building Code, relating to design of residential buildings to control environmental noise including road-traffic noise, for the Ministry of Business, Innovation and Employment.

(i) I am convenor of the New Zealand reference group for "ISO" acoustics standards and a member of joint Australian and New Zealand committees for acoustics standards. I was Chair of the 2012 New Zealand acoustics standards review, Chair for the development of the 2010 wind farm noise standard, and a member for the 2008 general environmental noise standards.

4. I am a member of a number of relevant associations and hold registrations including:

(a) Chartered Professional Engineer; and

(b) Fellow of the UK Institute of Acoustics.

Code of conduct

5. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014. This evidence has been prepared in compliance with that Code, as if it were evidence being given in Environment Court proceedings. In particular, unless I state otherwise, this evidence is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Purpose and scope of evidence

6. This evidence relates to the management of potential and likely road-traffic noise effects from the planned Ōtaki to North of Levin Expressway (**Ō2NL**) on the proposed Tara-Ika Growth Area, with respect to public health. I will address the following:

(a) noise effects a state highway, such as Ō2NL, will have on nearby residential dwellings;

(b) methods to manage effects on new and altered buildings containing sensitive activities near existing infrastructure;

(c) potential options and opportunities to implement good integrated design to fulfil the objectives of PC4 and limit the detrimental noise effects on the Tara-Ika Growth Area;

(d) the appropriateness of the relief sought by Waka Kotahi, from an acoustics and public health perspective; and

(e) the recommendations of the Council officer in the section 42A report in relation to the relief sought by Waka Kotahi.

7. I have prepared my evidence based on my experience assessing and managing future and existing state highway sound, at numerous locations throughout New Zealand, and from my specific knowledge of Ō2NL from my involvement with that project.

EXECUTIVE SUMMARY

8. Sound from road-traffic can give rise to adverse health effects on sensitive land uses located nearby. The research and guidelines relating to these effects are widely accepted internationally and applied in New Zealand.

9. In my experience, Waka Kotahi continuously works to reduce existing sound exposure and to manage the effects of road-traffic noise on existing sensitive activities. However, due to the nature of the state highway network, Waka Kotahi is unable to internalise all noise effects.

10. Adverse effects on new and altered buildings for sensitive activities can be avoided and managed through well understood controls in district plans. Efficient and effective methods are available for green-field developments in particular. In my opinion, it is therefore critical that PC4 includes appropriate land use controls to manage the location of sensitive activities in Tara-Ika near Ō2NL, to protect these people from adverse effects.

11. PC4 as notified does not include rules to manage the adverse effects on sensitive activities in buildings near Ō2NL, and there are no applicable rules in the operative Horowhenua District Plan for residential zones. In my opinion, the submission by Waka Kotahi seeks appropriate and pragmatic

amendments that would address this issue. The controls sought could be modified to refine the spatial extent and rule structure.

12. The Section 42A report rejects the need to address road-traffic noise from Ō2NL, citing practical and procedural difficulties. In my evidence I have set out how controls could be introduced into PC4 to be efficient and effective. I have also explained how such controls would not be available at a later stage if this opportunity is missed.

NOISE EFFECTS FROM ROAD-TRAFFIC

13. It is widely accepted, nationally and internationally, that sound from road-traffic has the potential to cause adverse health effects on people living nearby. This has been documented by authoritative bodies such as the World Health Organisation (**WHO**)[2], including a relatively recent publication by WHO Europe in October 2018 (**2018 WHO Guidelines**)[3], which set out guidelines for managing environmental noise. These WHO publications are underpinned by robust scientific research. I am not aware of any fundamental disagreement in the acoustics profession with the information published by WHO regarding road-traffic noise effects.

14. A research project was published in 2019[4] specifically addressing the applicability of international data on noise annoyance to New Zealand. This research included a survey of many residents living in the vicinity of an existing state highway using the questions and methods set out in the international technical specification ISO/TS 15666[5], which is the same approach used in most international studies. The research found that international noise response curves are generally applicable for the New Zealand population, although, potentially, the New Zealand population may be slightly more noise sensitive. I am currently on the steering groups for two other research projects further investigating these issues: "*Community response to noise*" and "*Social (health) cost of land transport noise exposure in New Zealand*".

15. The 2018 WHO Guidelines are based on a critical review of academic literature and followed a rigorous protocol to determine the quality of evidence of adverse effects. With respect to road-traffic noise, the 2018

[2] World Health Organisation, Guidelines for community noise, 1999; World Health Organisation, Burden of disease from environmental noise, 2011.
[3] World Health Organisation, Environmental noise guidelines for the European region, 2018.
[4] Humpheson D. and Wareing R., 2019. Evidential basis for community response to land transport noise, Waka Kotahi Research Report 656. https://nzta.govt.nz/resources/research/reports/656/
[5] International Standards Organisation ISO/TS 15666:2003 Acoustics – assessment of noise annoyance by means of social and socio-acoustic surveys.

WHO Guidelines note the following adverse effects: ischaemic heart disease; hypertension; high annoyance and sleep disturbance. Based on the strength of the evidence of adverse effects, WHO makes recommendations to policymakers to reduce road-traffic sound exposure to below a range of guideline values. In the context of existing noise exposure, the 2018 WHO Guidelines include commentary on potential source and path interventions to reduce adverse health effects.

16. In my opinion, such interventions must be secondary to avoidance of noise exposure that would be caused by locating new sensitive activities, without appropriate design, in an area adjacent to a planned road. I consider the relief sought by Waka Kotahi on PC4 is consistent with the 2018 WHO Guidelines, as an integral part of its broader noise management activities. I describe below some of the steps and actions that Waka Kotahi implements as part of this management approach.

17. Roads are generally an accepted part of our environment, although my experience from investigating complaints on behalf of Waka Kotahi is that many people do not appreciate the actual effects of living with road-traffic sound when they choose to build new homes, or alter existing dwellings, near state highway corridors. Even when a site has been visited during the day, prospective residents might not have envisaged the continuing sound into the evening, or at night when trying to sleep with windows open. In my experience, people also comment they had not anticipated the steadily increasing traffic that occurs on most state highways over time, and often the changing traffic composition such as an increase in the proportion of trucks at night.

18. I have been involved in numerous cases where people in houses that were established near to pre-existing or planned roads have then affected the operation of that infrastructure. An example is residential subdivisions that established adjacent to the pre-existing State Highway 6 to the south of Nelson, where residents then campaigned for the road surface to be upgraded from a chip seal to porous asphalt to reduce noise.

19. Regardless of whether complaints are made, Waka Kotahi has social and environmental responsibilities requiring consideration of all neighbours near the state highway network.

METHODS TO MANAGE ADVERSE EFFECTS

20. Where not appropriately managed, adverse effects from road-traffic sound can occur at properties located near state highways throughout New Zealand. I have previously been, and am currently, involved in numerous different activities undertaken by Waka Kotahi to manage and reduce this sound where practicable. These include development of quieter road surfaces, installation of noise barriers, and investigation into engine braking noise. For new or altered roads such as Ō2NL, Waka Kotahi seeks to apply NZ 6806[6], which provides guidance on the assessment of noise, recommended noise criteria and potential mitigation measures.

21. However, practicable improvements are often constrained, and the operation of the state highway network can result in effects, such as noise, that cannot be completely internalised within typical designation boundaries.

22. For new buildings being constructed near to state highway corridors, it is relatively straight-forward to control internal sound through the building location, design and systems (like acoustic insulation and mechanical ventilation). In most cases, it is practical to achieve acceptable internal sound levels using such measures. Likewise, screening can be used in some cases to achieve reasonable external sound levels, which is important to provide for outdoor amenity associated with normal domestic activity. Thus, with careful design of building location, orientation and materials, future occupants of the building can be protected from the most significant adverse effects associated with state highway sound.

23. For a greenfield development in particular there are a range of practical options generally available to manage road-traffic noise in new buildings for sensitive uses, such as:

    (a) locating non-sensitive land uses near the road such as: stormwater treatment, local access roads, reserve areas, commercial buildings, and utility buildings (e.g. garages, storage etc);

    (b) locating connected / continuous buildings near to the road to form a noise barrier screening outdoor living spaces and other buildings in the development;

[6] New Zealand Standard NZS 6806:2010 Acoustics – Road-traffic noise – new and altered roads

(c) integrating a continuous noise bund / wall along the road corridor boundary within the development layout; and

(d) designing buildings with bedrooms and living spaces facing away from the road, or including mechanical ventilation.

24. Rules in district plans commonly control the location and design of sensitive activities such as housing, where such activities seek to locate near existing sound sources such as road-traffic, railways, airports, ports, quarries, industrial sites, industrial and business zones, gun clubs and motorsport facilities. For new houses near existing state highways, examples of second-generation operative district plans containing controls include: Christchurch, Dunedin, Tauranga, Hamilton, Palmerston North, Kāpiti Coast and Hutt City. In all these existing plans there are requirements to achieve reasonable internal noise levels in sensitive spaces near roads (and railways). Other aspects of the controls vary between these plans.

25. The operative Horowhenua District Plan (**the District Plan**) contains rules to protect new and altered sensitive activities from noise near state highways and railways in residential, rural and greenbelt residential zones.[7] In my opinion, there are a number of issues with these existing rules in the District Plan:

(a) the rules only apply within 40 metres of a state highway or state highway designation, but material noise effects that warrant controls would typically extend beyond this distance;

(b) there appears to be an inconsistency in these rules between zones and it is unclear why the controls in residential zones only apply to rail noise and not road-traffic noise; and

(c) the rules do not address alternative ventilation that would be required if windows are closed.

26. However, despite the above limitations, in my opinion it is appropriate that the District Plan does currently recognise the effects that can arise from establishing or altering buildings for sensitive activities near to existing or planned state highways. I also consider it an efficient and effective mechanism that the district plan addresses this issue with performance standards to be met by the new or altered activities giving rise to the effect.

[7] Rules 15.6.13, 18.6.11, 19.6.7

PLAN CHANGE 4

27. PC4 does not appear to include any requirements that would avoid or minimise state highway noise from Ō2NL affecting the health of future residents in an efficient and effective manner, such as the general measures I have set out above for greenfield developments. In my opinion, there is an opportunity for an integrated design, whereby the layout of Tara-Ika actively avoids noise effects from Ō2NL, such as by locating non-sensitive land uses or ancillary land uses near the corridor, rather than the current structure plan, which locates standard residential areas to the east of the Ō2NL corridor, not even using local roads to provide some separation. Alternatively, another approach for an integrated design could be dense residential development near the corridor with a continuous building form providing noise screening for the wider plan change area.

28. I appreciate the structure plan (both as notified and with amendments recommended in the section 42A report) is undoubtedly responding to numerous issues and constraints outside my area of expertise. However, within these factors it appears that noise from Ō2NL was not included as a design opportunity or constraint. If the structure plan was advanced on the notion that noise effects from Ō2NL should simply be internalised or addressed within the road corridor, in my opinion that was a significant mistake. Even with practicable noise mitigation at source such as low noise road surfaces, a busy state highway has a noise footprint that inherently extends beyond the corridor. A structure plan for a new growth area provides an opportunity to proactively address noise effects outside the road corridor, but that has not happened in this instance.

29. PC4 does include a rule (15A.8.1.1.b) relating to noise from SH57/Arapaepae Road affecting development in the Arapaepae Road Special Treatment Overlay. That rule is based on Waka Kotahi guidance and sets internal noise limits and ventilation requirements where windows have to be closed to meet those limits. In my opinion, in terms of the acoustics details, these provisions reasonably address the potential noise effects on future residents indoors. However, this provision does not address outdoor amenity and may miss opportunities to avoid noise exposure and address issues efficiently such as through subdivision layout.

30. While PC4 does include the above provision related to noise from Arapaepae Road, PC4 does not include any measures to manage noise effects from Ō2NL. It appears a distinction has been made that road-traffic

noise from Arapaepae Road is existing, whereas road-traffic noise from Ō2NL is not there today. In terms of noise effects on future Tara-Ika residents, in my opinion this distinction is illusory as those residents will be exposed to noise from both roads, and at that stage health effects will arise regardless of the prior sequencing. I therefore consider the same issue with noise effects exists for Ō2NL as the issue that PC4 is seeking to address with provision 15A.8.1.1.b for Arapaepae Road (and the district plan addresses in some other instances).

31. PC4 includes a general cross reference (e.g. 15A.1.1.1.a) to other provisions in chapter 15 of the district plan, but the potentially relevant noise insulation rule (15.6.13) only addresses railway noise. Even if that rule did address state highway noise as for rules in other zones (18.6.11 and 19.6.7), this would only apply to existing designations and would only extend 40 metres from the road or designation.

32. PC4 is an unusual situation in that the structure plan explicitly includes a corridor for Ō2NL within the plan change area. While the Ō2NL corridor is not yet designated, I understand that the transport upgrades to be provided by Ō2NL are important to the successful development of Tara-Ika. To effectively manage noise effects on future residents, I consider that PC4 should take account of noise from Ō2NL, regardless of the differential timing of PC4 and the Ō2NL Notice of Requirement. In my opinion, the alternative of essentially ignoring Ō2NL at this stage by erroneously assuming it can internalise its noise effects, would be likely to result in harm to public health that could have been avoided. Once houses have been constructed in Tara-Ika the most efficient and effective options for managing noise effects, such as subdivision layout and building orientation/layout, may either be impaired or no longer available. Such options are not available through the Ō2NL Notice of Requirement process.

33. Noise effects from Ō2NL that warrant controls in PC4 are likely to extend in the order of 100 metres from the future state highway traffic lanes. The location of those traffic lanes has not yet been determined. However, it is likely the traffic lanes will be towards the centre of the corridor shown on the structure plan, and not all of the corridor would necessarily be designated. The area where controls are required (100 metres from traffic lanes) is likely to be predominantly, but not fully, within the Ō2NL corridor. In future, the corridor shown on the structure plan will be partly the designated Ō2NL and partly residentially zoned land. While I have seen illustrations showing the

land in the corridor outside the designation as open space, that outcome is not reflected in the zoning or plan provisions.

RELIEF SOUGHT

34. Waka Kotahi's submission seeks the integration of the Tara-Ika growth area with Ō2NL. As I have set out above, in my opinion an integrated design proactively addressing the realities of state highway noise, could avoid exposure of sensitive activities and would be the best approach to manage adverse health effects on future residents. In my opinion changes are required to the structure plan and plan provisions to achieve an integrated design that effectively addresses noise exposure.

35. Waka Kotahi's submission also seeks to amend PC4 to add provisions to protect new noise sensitive activities near Ō2NL, as well as alternatives and consequential amendments that may be required to fully achieve this in practical effect.

36. Initially, Waka Kotahi seeks to extend the low-density residential zoning presently located up to 40m from the corridor to 100m from the Ō2NL corridor, to reduce the number of future residents exposed to noise from Ō2NL. In my opinion, while this approach would reduce the number of people affected, it would not alter the effects on those remaining without also including sound insulation requirements. Also, while there would be fewer people affected, low density residential areas can have greater expectations and sensitivity around outdoor amenity.

37. Alternatively, Waka Kotahi seeks that no development occur within 100 metres of the Ō2NL corridor until the edges of the road are clarified in the Notice of Requirement. The matter could then be reconsidered with appropriate knowledge of the extent of how noise might affect Tara-Ika.

38. This alternative relief sought by Waka Kotahi envisages development can occur near to Ō2NL once details are known so that appropriate noise management measures can then be implemented. These could include the measures I have detailed above such as subdivision layout or a boundary barrier and building orientation and/or layout. Potentially treatment of individual buildings may still be required in limited circumstances.

39. In my opinion the alternative relief sought by Waka Kotahi is appropriate to manage noise effects on future residents, but potentially the extent of the area affected could be reduced and potentially some controls could be

defined at this stage in advance of the Ō2NL Notice of Requirement. I recommend this relief could be refined as follows:

(a) Given an alignment for Ō2NL has not been confirmed, there is an indicative horizontal alignment towards the centre of the corridor. Rather than imposing controls within 100 metres of the corridor, I recommend imposing controls within 150 metres of the centre line (and the centreline of the on/off ramps at Tararua Road), which will extend less than 100 metres outside the corridor (i.e. a smaller spatial extent than sought in the Waka Kotahi submission). This area could potentially be amalgamated into the existing Arapaepae Road Special Treatment Overlay to form a more general road-traffic noise overlay.

(b) I consider that an integrated design will still lead to the best noise outcomes. However, as a minimum, specific controls could be specified as a backstop in rules now, rather than waiting for the Ō2NL Notice of Requirement. These controls should include:

(i) A three-metre high noise barrier (bund, wall or combination of the two) between Ō2NL and any residential sites in the area defined above. This would not be required if only non-sensitive land uses were within this area.

(ii) Internal noise and ventilation criteria for any habitable spaces above ground floor level (i.e. potentially overlooking the noise barrier) in the area defined above. These could be based on 15A.8.1.1.b.

40. Provisions to this effect have been proposed by Ms McLeod in her evidence. I support those provisions.

41. In my opinion, the amendments proposed by Ms McLeod still allow for new buildings near Ō2NL but provide reasonable protection for future residents from adverse health effects of road-traffic noise. This approach means that there is no specific need to 'stage' residential development by reference to Ō2NL being progressed. Nor would the provisions necessarily require a lower density of housing than envisaged in the Section 42A report version of PC4.

COMMENTS ON THE COUNCIL SECTION 42A REPORT

42. In paragraphs 625 to 630 of the Section 42A report, Ms Baddock discusses the Waka Kotahi submission points relating to road-traffic noise and recommends rejecting the amendments sought.

43. Ms Baddock highlights practical and procedural difficulties with introducing rules in PC4 to manage noise from Ō2NL, given that it does not have a developed design or designation. I agree with Ms Baddock that this does present complexities that are not present in most other scenarios. However, I disagree with Ms Baddock that therefore this issue should only be addressed through the Ō2NL Notice of Requirement. I have set out above how the most efficient noise management measures, such as subdivision layout, are not available through that later process. Essentially, if PC4 has no controls and houses can be built without consideration of noise from Ō2NL, then for the Ō2NL Notice of Requirement the 'horse will already have bolted' in terms of the scope to avoid adverse public health effects.

44. In paragraph 630 of the section 42A report Ms Baddock encourages suggestions from Waka Kotahi how to manage interface issues efficiently and effectively. I have set out potential refinements to the relief sought by Waka Kotahi in my evidence, and those have been reflected in the provisions proposed by Ms McLeod.

Stephen Chiles

2 November 2021

Submitter 04/34 WKNZTA Evidence - Transport

BEFORE THE HOROWHENUA DISTRICT COUNCIL
INDEPENDENT HEARING PANEL

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	the hearing on Proposed District Plan Change 4 – Tara-Ika Growth Area

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STATEMENT OF EVIDENCE OF PHILIP JEREMY PEET ON BEHALF OF WAKA KOTAHI NZ TRANSPORT AGENCY

Transport

Dated: 2 November 2021

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INTRODUCTION

1. My name is Philip Jeremy Peet.

2. I am currently the Sector Leader for Transport Advisory for Stantec, leading this service line across New Zealand.

3. I have been engaged on behalf of Waka Kotahi New Zealand Transport Agency (**Waka Kotahi**) in relation to the Horowhenua Proposed District Plan Change 4 – Tara-Ika Growth Area (**PC4**). I have been involved in the investigation of the Ōtaki to north of Levin offline highway project (**Ō2NL Project**) since January 2011.

4. In my role as Consultant Team Leader of the Ō2NL Project, I have led the consultant transport planners, designers, and assessors through many stages of project development. In doing my role, I have attended the Tara-Ika site many times, reviewed information and reports prepared by my team, and met stakeholders, landowners and community representatives regularly.

Qualifications and experience

5. I have the following qualifications and experience relevant to this evidence:

   (a) BE (Civil)(Hons), University of Canterbury, 1999.

   (b) CPEng (Chartered Professional Engineer), IntPE (International Professional Engineer), and MIPENZ (Member of the Institute of Professional Engineers New Zealand).

   (c) 20 years of traffic engineering and transport planning for clients and consultants in New Zealand and England, including managing investigations into large scale transportation projects.

Code of conduct

6. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014. This evidence has been prepared in compliance with that Code, as if it were evidence being given in Environment Court proceedings. In particular, unless I state otherwise, this evidence is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Purpose and scope of evidence

7. My evidence covers my assessment of the actual or potential effects of PC4 on the current and future state highway network. This includes:

   (a) a brief introduction to the Ō2NL Project;

   (b) a brief discussion on the inter-relationship between Tara-Ika, the current state highway network and the Ō2NL Project;

   (c) my review of the Integrated Transport Assessment (**ITA**) for PC4;

   (d) the transport effects associated with PC4, particularly before the Ō2NL Project is constructed, in terms of:

      (i) delays on or approaching the current state highway network (State Highway 1 (**SH1**) and State Highway 57 (**SH57**));

      (ii) safety of travel on and approaching the state highway network; and

      (iii) access onto SH57.

EXECUTIVE SUMMARY

8. The purpose of this evidence is to discuss the safety, efficiency and connectivity impacts of the Tara-Ika development on the current and future state highway network.

9. My evidence is limited to the effects on the state highway network (to include SH1 and SH57). Effects on the local road network and railway lines, whilst of interest to Waka Kotahi, are primarily matters for Horowhenua District Council (**HDC**) and KiwiRail respectively.

10. My evidence is also limited to the Levin area as the effects of Tara-Ika on the state highway network beyond that area will be minor.

11. Overall, I agree that having growth at Tara-Ika is preferable to having growth spread elsewhere around Levin and the wider Horowhenua area, as it reduces the number and length of trips on the transport network. Once both Tara-Ika and Ō2NL are in place, the effects on the transport network will be mostly minor. Put another way, the Ō2NL Project will be able to account for the growth intended to be brought forward through PC4 in terms of the operation of the transport network.

12. However, a substantial build out of Tara-Ika without or in advance of Ō2NL (or other infrastructure / mitigation measures) in place will put significant pressure on the transport network:

    (a) Side roads approaching SH1 and SH57 will be subject to Level of Service E and F on a daily basis (delays of over a minute).

    (b) Increased traffic through SH1 in central Levin will impact on safety, particularly for vulnerable road users.

    (c) Access for new lots or intersections onto SH57 is inappropriate and could lead to safety issues.

13. Overall, I believe that better staging of land use and transport infrastructure is needed going forward to ensure a unified transport network that serves the district well.

THE STATE HIGHWAY NETWORK

14. SH1 is New Zealand's most important highway and the section in the vicinity of Levin is characterised by its function in connecting Wellington to the central and upper North Island, where no other resilient route exists. It also provides an essential economic connection to Palmerston North, the largest freight node in central New Zealand. This important function means there are high expectations in respect of the form and function of this route by all road users including the local community.

15. SH57 is also a fundamental link in the transport network, and is also part of the essential economic connection to Palmerston North.

Recognition of the significance of the state highway network including Ō2NL

16. SH1 is classified as a National Highway (High Volume) and SH57 as a National Highway, the top two tiers in the One Network Road Classification (ONRC) hierarchy.[1]

17. The Horizons One Plan at Policy 3-1 recognises the road and rail networks as mapped in the Regional Land Transport Strategy as being physical resources of regional or national importance. The Mahere Waka Whenua ā-rohe Regional Land Transport Plan 2021 – 2031 lists the state highway

[1] One Network Road Classification (ONRC) | Waka Kotahi NZ Transport Agency (nzta.govt.nz)

network as being included in the strategic road networks of the Manawatū Whanganui Region. In addition, Ō2NL is mapped in the Regional Land Transport Plan and identified as a 'significant activity' and the second priority for the Region.

ŌTAKI TO NORTH OF LEVIN PROJECT

18. The Ō2NL Project is the northernmost section of the overall Wellington Northern Corridor that is being progressed by Waka Kotahi. It is located to the east of the current state highway network and east of the Manukau, Ōhau and Levin townships.

19. In 2018, the Waka Kotahi Board endorsed the proposed approach for the Ō2NL corridor to create an offline highway with the aim of addressing current safety, efficiency, and resilience issues along the existing State highways between Ōtaki and Levin.

20. The Ō2NL Project, as a four-lane offline highway, was subsequently included and funded as part of the NZ Upgrade Programme (NZUP) to "*improve safety and access, support economic growth, provide greater route resilience, and better access to walking and cycling facilities*".

21. The current timeframe for Ō2NL involves lodging notices of requirements for designation and applications for resource consent in 2022, starting construction in 2025, and opening in 2029.

22. The Ō2NL Project includes the following features:

    (a) Approximately 24km of four-lane (two lanes in each direction), median divided highway between Taylors Road north of Ōtaki, linking with the Peka Peka to Ōtaki (PP2Ō) Expressway, and ending just north of Levin, where it connects back into the existing SH1.

    (b) A grade-separated diamond interchange at Tararua Road, including a dumbbell configuration of two roundabouts at the ramp terminals for managing traffic movements onto and off the highway, and with the local road traffic on Tararua Road.

    (c) Two dual-lane roundabouts where the main alignment crosses SH57 / Arapaepae Road and where it ends at SH1 at Heatherlea East Road, north of Levin.

(d) Four-lane bridges over the Waiauti, Waikawa and Kuku Streams and the Ōhau River, and the North Island Main Trunk ("NIMT") rail line.

(e) Underpasses and overpasses for local connectivity at many roads that cross the proposed highway.

(f) Relocation of the intersection and the addition of traffic signals at the intersection of Tararua Road with SH1, which would be integrated with an at-grade crossing of the NIMT.

(g) A separated shared use path (SUP) for walking and cycling generally located along the entire length of the new highway. Between McLeavey Road and the new roundabout connection with SH57 (through / past the PC4 area), the SUP is proposed to be located adjacent to Arapaepae Road.

TARA-IKA INTERACTION WITH CURRENT SH NETWORK AND Ō2NL

23. Tara-Ika interacts with the current and future SH network in a number of ways:

(a) In addition to the existing connections via SH57 at both Tararua Road and Queen Street, Structure Plan 013 also proposes a new east-west "Arterial Road Connection" (Central Spine) through the middle of the plan change area which will also connect onto SH57. There are potential safety concerns with this connection if it was in place prior to the Ō2NL Project being constructed and opened, which is also intimated by the ITA[2].

(b) The proposed lots along the western boundary could be accessed directly from SH57 / Arapaepae Road, or via a series of closely spaced intersections. Structure Plan 013 and the PC4 provisions do not specifically address this matter.

(c) The scale of development proposed will result in a significant increase in traffic, which will affect the performance of SH57 and SH1 through Levin (Oxford Street), in particular.

[2] Section 6.5 of the ITA states "*any connection between the central spine road and SH57 / Arapaepae Road would need to be demonstrably safe and efficient. Alternatively, if the formation of an acceptable intersection form was not possible, it would need to be demonstrated that without any connection at this location, other parts of the road network would be able to accommodate the higher traffic volumes which would eventuate*."

(d) The Ō2NL Project corridor traverses through the PC4 area. The corridor crosses the three connections mentioned above (the existing Tararua Road and Queen Street, and the future Central Spine) as well as two indicative additional potential active mode connections as shown on Structure Plan 013 between the road connections.

24. Given the Tara-Ika Growth Area has partial Crown funding (through Crown Infrastructure Partners), coupled with strong historic growth in the district and the priority being given to it by HDC, I expect that Tara-Ika will be developed at least to some extent prior to the opening of Ō2NL. I understand that HDC shares this expectation.

PC4 INTEGRATED TRANSPORT ASSESSMENT

25. I have read the Integrated Transport Assessment (**ITA**) developed by Tim Kelly. The modelling on which the ITA was based was undertaken by the Ō2NL modelling team to assumptions agreed with HDC officers.

26. When considering delays on the road network, the ITA assesses 2039 future network impacts with and without Tara-Ika. The assessment shows that PC4 will have little / no impact on the road network above what is 'expected' in 2039. In other words, the ITA assumes the same level of population growth / land development has occurred by 2039 with that growth either occurring at Tara-Ika or at other locations around the district. Any growth results in additional movements on the network (to local services and facilities in Levin) and so the impacts on the road network, in broad terms, is similar irrespective as to where the population growth occurs. Whilst I agree with this finding, the assessment methodology does not depict the actual impact of development at Tara-Ika on the transport network compared to the current situation.

27. The ITA assumes that PC4 will displace growth that would otherwise occur elsewhere within the Horowhenua District. I agree that growth at Tara-Ika is preferable to having growth spread elsewhere around Levin and the wider Horowhenua area as it reduces the number and length of trips on the network. Although this displacement is a reasonable assumption, I believe that the assessment of impacts to the road network must also be compared to the existing situation to understand the change in delay and safety for current and future road users.

28. Considering the impact of Tara-Ika to the situation with 'expected' growth elsewhere in the district is one part of assessing the transport effects on Tara-Ika. However, providing for the anticipated level of growth anywhere in the district (whether at Tara-Ika or elsewhere) would require changes to the District Plan to enable the necessary development. In my view it is artificial to assume that the 'expected' growth would occur elsewhere as a matter of course without PC4.

29. It is useful and relevant to understand and plan for growth by identifying the improvements needed to all infrastructure. This allows growth to be supported and facilitated by improving / developing infrastructure to appropriately accommodate for the needs of current users as well as new future users of networks.

30. In my evidence I have endeavoured to 'fill the gap' in the assessment of the transport effects of PC4 (specifically on the state highway network). The remainder of my evidence presents the effects of Tara-Ika / PC4 in relation to delays and safety for the following scenarios:

    (a) current (as shown by 2018 model);

    (b) without the Ō2NL Project, in 2039 and applying the '75%ile Growth' projections with and without PC4; and

    (c) with the Ō2NL Project, in 2039 and applying the '75%ile Growth' projections with and without PC4;

31. For completeness, I also touch on the traffic situation in 2039 if a lower, 25%ile growth scenario, was to come to fruition.

32. I consider that including these scenarios provides a more complete picture of the effects of Tara-Ika / PC4.

TRANSPORT EFFECTS - DELAYS

33. To categorise the delays, a simple Level of Service (LOS) definition has been adopted, based on the US Department of Transport Highways Capacity Manual 2010:

Table 1: Level of Service Range

Level of Service	Description	Delay (s)
A – C	Free flowing / Acceptable delays	<30
D	Unsettled / Tolerable delays	31-50
E	Significant delays	51-70
F	Congested / Queues	>70

Current

34. Figure 1 shows the current delays on the road network. The coloured lines on the links show the delay that is experienced by that link in accordance with the table above.

Figure 1: 2018 PM Peak Levels of Service (coloured links represent LOS)

35. Figure 1 indicates that side road delays for traffic approaching SH1 and SH57 are acceptable in the typical PM peak, with none worse than LOS D (orange links). This does not account for weekend / long weekend traffic which is often significantly higher leading to longer delays.

Without Ō2NL

36. For a future year, the 2039 75%ile growth scenario has been adopted in this assessment as this is consistent with the ITA. The 75%ile refers to the corresponding '75%ile Growth' projection from the Horowhenua Socio-Economic Projections Report by Sense Partners (May 2020). This same growth scenario has been adopted by the Ō2NL project team, although it is noted that HDC have adopted the 95%ile projection for its 2021-2041 Long Term Plan, which would result in even more growth. The table below

outlines the different scenarios used in my evidence and the assumptions made for PC4 uptake.

Table 2: Growth Scenarios

Scenario	Projected Population	PC4 Projected Population and Uptake
Current (2019)	34,956	
2029 25%ile with Tara-Ika	41,022	1,409 (16% of PC4)
2039 75%ile without Tara-Ika	50,913	1,475 (50% of currently allowable without PC4)
2039 75%ile with Tara-Ika	50,913	8,806 (100% of PC4)
2039 95%ile	59,010	8,806 (100% of PC4)

37. The 2039 75%ile with Tara-Ika growth scenario assumes that over half of the growth likely in the district would occur within the PC4 area.

38. The following images present the two 2039 75%ile growth distributions of with and without PC4, and both exclude the Ō2NL Project. For the avoidance of doubt, these both include the same amount of growth in Horowhenua, just located in different areas. The 'with PC4' model also includes the Central Spine connection which I discuss briefly later in my evidence.

Figure 2: 2039 Distributed Growth (no PC4) without Ō2NL Levels of Service

Figure 3: 2039 Growth with PC4 without Ō2NL and with Central Spine Connection[3]

39. Comparing the model outputs for 2039 to the current condition (2018) it is clear that with this growth, and in the absence of Ō2NL, both the 'Forecast Development without Tara-Ika' and the 'Forecast Development with Tara-Ika' scenarios will significantly increase delays on the side roads along SH1 to unacceptable levels.

40. In both scenarios, the increase in traffic volumes will reduce the ability for people to access the highway, as there will be fewer gaps available for drivers to safely enter the traffic flow from side roads, creating delays. In very high delay situations this can lead to traffic from side roads forcing a gap on the highway and leading to delays for through traffic. In addition, as intersections become busy, there will be fewer opportunities for pedestrians and cyclists to cross the corridor and the complexity of decision-making for all users increases, leading to greater safety risk and, therefore, injuries to road users.

41. Whilst PC4 will result in some forecast delays approaching SH1 within urban Levin being better than with growth located elsewhere, there are larger delays approaching SH57 at Meadowvale Drive, Queen Street and Roslyn Road, which will also need to be mitigated.

With Ō2NL

42. The figures below show that when Ō2NL is operational, the impacts on the state highways as a result of population growth, including PC4, will be

[3] For delays significantly over 70 seconds, the width of the black bar increases.

significantly less, and much easier to mitigate without state highway traffic on the old SH1 and SH57. For example, it would be appropriate to put traffic signals or a roundabout at these intersections, which would not be possible if it was a state highway due to the significantly higher traffic volumes and the additional delays placed on through traffic.

Figure 4: 2039 with Ō2NL – Forecast Development without Tara-Ika Development

Figure 5: 2039 with Ō2NL - Forecast Development with Tara-Ika Development and a Central Spine Connection

43. The above figures show that growth can be managed once the Ō2NL Project is in place. However, as per Figure 2 and Figure 3, there will be significant delays on the state highway network if a significant level of the growth anticipated between now and 2039 occurs before Ō2NL opens.

Lower Growth Scenario

44. To help inform an appropriate level of development at Tara-Ika with potentially manageable levels of delay on the wider road network, I assessed other model scenarios. The models[4] showed that under a 2029 low growth scenario (6,000 population growth, 16% Tara-Ika developed) SH57 and its intersecting roads will operate with few delays. However, SH1 will still experience very high traffic volumes, and three side roads approaching the highway will experience Level of Service E. This reinforces that Ō2NL, or other significant mitigation, is necessary to manage the effects of even small amounts of growth in Horowhenua on the SH1 corridor within the Levin area.

Figure 6: 2029 25%ile Growth with PC4 without Ō2NL

TRANSPORT EFFECTS - SAFETY

45. The ITA briefly discusses safety in Section 6.5 and states '*without any direct connection to Liverpool Street, Meadowvale Drive and short section of SH57 could experience large increases in traffic activity. This could be detrimental to safety, especially for the increased right turn exit movement from Meadowvale Drive to SH57'*. I agree with this assessment of safety.

46. The ITA does not quantitatively assess future safety risk on the road network. The increase in traffic is likely to result in some additional pressure on local road and at-grade crossings of the railway line. However, my evidence is focussed on the impacts on the state highway network.

[4] The model runs assume dual lane roundabouts at Tararua Road and Queen Street

47. For the most part, the large Safety Improvement Programme works currently being designed and implemented on SH1 and SH57[5] will significantly improve the safety risk on rural state highways to less that it is currently.

48. However, this programme is not addressing SH1 through urban Levin, where increased traffic could create additional issues. SH1 through urban Levin is currently classified as 'High' Collective Risk[6] and the increased traffic generated by growth will only exacerbate this. The daily traffic volumes on SH1 through urban Levin are expected to rise from 14,100vpd to over 20,000vpd by 2039. This is of particular concern as the facilities for vulnerable road users, including pedestrians and cyclists, are poor through this section, with no cycle lanes and only limited crossing facilities. Increased traffic increases the number of potential conflicts and therefore safety concerns.

DIRECT ACCESS ONTO SH57

49. Under Structure Plan 013, many lots and / or intersections could have direct access on the current SH57 Arapaepae Road.

50. I consider that this would be inappropriate from a safety and efficiency perspective due to:

    (a) the status of SH57 as a National highway in the ONRC hierarchy;

    (b) the volume and composition of traffic using SH57;

    (c) the fact that this is gazetted a Limited Access Road;

    (d) the width of SH57; and

    (e) the 100km/h speed limit on SH57.

51. Of particular concern is vehicles turning right into and out of accesses / intersections when there is no central median, narrow shoulders and high speeds.

52. Regular accesses onto SH57 would be out of keeping with the current road environment. More regular accesses could be appropriate once Ō2NL is

[5] https://www.nzta.govt.nz/projects/wellington-northern-corridor/otaki-to-north-of-levin/o2nl-safer-roads-and-roadsides/

[6] Collective Risk is measured as the number of fatal and serious casualties over a distance. The colelctive risk bands are Low, Low-Medium, Medium, Medium-High and High.

constructed, and Arapaepae Road repurposed as a lower speed local road,but this would need to be carefully managed. I agree with the ITA, which states *"Even with the lower traffic volumes associated with the operation of Ō2NL, the form and frequency of these intersections would need to be considered carefully in the context of the wider management of safety along Arapaepae Road."*

53. In addition to property / minor intersection access, Structure Plan 013 also proposes a new east-west "Arterial Road Connection" (Central Spine) through the middle of the plan change area which will also connect onto SH57. However, there are potential safety concerns with this connection if it was in place prior being to the Ō2NL Project being constructed and opened, which is also intimated by the ITA.[7] My safety concerns are similar to that outlined in the preceding paragraphs due to the form and function of the current SH57.

54. I acknowledge that, due to the size of the Tara-Ika development, an additional connection will be required from the development onto or across SH57 in addition to that provided at Tararua Road and Queen Street East. From an overall land use and transport integration perspective, movement to and through Tara-Ika is premised on a north-south and an east-west spine through the central commercial area. Accordingly, the Central Spine connection should be this additional connection. Without the Central Spine connection, Tararua Road and Queen Street will experience LOS E and F respectively as shown in the image below.

[7] Section 6.5 of the ITA states "*any connection between the central spine road and SH57 / Arapaepae Road would need to be demonstrably safe and efficient. Alternatively, if the formation of an acceptable intersection form was not possible, it would need to be demonstrated that without any connection at this location, other parts of the road network would be able to accommodate the higher traffic volumes which would eventuate*."

Figure 6: 2039 75%ile Growth with PC4 without Ō2NL and without Central Spine

55. However, as stated in the ITA, this connection would need to be demonstrably safe and efficient, or delayed until Ō2NL is being constructed. Delaying the link is likely to limit the amount of development that can occur, but this could be appropriate due to the wider effects on the transport network without Ō2NL or other mitigation.

OTHER CONSIDERATIONS

56. The traffic impacts of Tara-Ika have been assessed assuming that commercial and retail development will be limited to activities with a maximum 250 sq m floor area. In other words, supermarkets, big box retail etc is not expected to be built within the Tara-Ika area. I support this as the smaller size commercial and retail activities will enable many goods and services required by Tara-Ika to be accessed locally, reducing the amount of travel needed, and also means that these activities will not attract significant amounts of traffic from other parts of Levin or wider afield.

CONCLUSIONS AND COMMENT ON PROVISIONS

57. Traffic modelling shows that the impacts of growth at Tara-Ika and more broadly throughout the district can be managed once the Ō2NL Project is in place, but that there will be significant delays on the network if development proceeds at pace before Ō2NL is opened.

58. My analysis of the traffic impacts of growth, either due to PC4 or in other locations (via other plan changes), shows that in the absence of Ō2NL any

significant development in the district will cause side roads approaching SH1 and SH57 to operate at an unacceptable level of service.

59. If significant build-out of the Tara-Ika development materialises before Ō2NL is operational, mitigations will be required to manage delays on SH1 and SH57 and the safety of vulnerable road users on SH1 through central Levin. These mitigations are likely to be significant and also potentially redundant once Ō2NL is in place.

60. Access onto SH57 for lots or intersections are also likely to create safety and efficiency concerns until at least such time as Ō2NL is open and the role and function of the current SH57 (Arapaepae Road) can be modified to allow for much reduced traffic flows.

61. Ms McLeod proposes a number of amendments / additions to the PC4 provisions that give effect to my analysis and recommendations, including in particular:

    (a) the addition of provisions to expressly recognise the importance of the state highway network (including Ō2NL);

    (b) requiring consideration of the impacts on the state highway network when considering proposals for subdivision / development within Tara-Ika. I note in particular that Ms McLeod's amended Policy 6A.2.2 matters of discretion for applications for subdivision consent would require specific consideration of the LOS and safety of travel implications that I have discussed above; and

    (c) specifically requiring access to new allotments to be provided from a road that is not part of the state highway network (noting the issues with SH57 I have discussed above).

62. Finally, I would like to stress the importance of integration of land use with transport infrastructure going forward to ensure a unified road network at all stages of development that serves the district and region well.

Phil Peet

2 November 2021

Submitter 04/35 Muaūpoko Tribal Authority Evidence

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	Horowhenua District Council Proposed Plan Change 4: Tara Ika Growth Area
BY	**Muaūpoko Tribal Authority** Submitter

MUAŪPOKO CULTURAL IMPACT ASSESSMENT

EXECUTIVE SUMMARY

1. Horowhenua District Council (HDC) support to create the Muaūpoko Cultural Values Assessment (CVA) and Cultural Impact Assessment (CIA) reports has allowed Muaūpoko Tribal Authority (MTA) to explore the values their people hold with the Tara-Ika area and likely effects of urban growth on these values. MTA have worked in good faith with HDC to minimise effects on their culture, provide for Muaūpoko aspirations and promote a treaty-based relationship in aim of supporting the Proposed Plan Change (PC4): Tara-Ika Growth Area. This has largely been undertaken successfully, however MTA have key outstanding concerns related to aspirations to protect and restore their taonga (*Powelliphanta traversii* and *Oligosoma ornatum*).

INTRODUCTION

2. My full name is Siobhan Alana Karaitiana. I am the author of the CIA report, created with support and collaboration from MTA and their key advisors. The CIA has addressed the impacts of the proposed urban growth area on the values described in earlier iwi works including the Muaūpoko CVA report and Submission 35.

3. MTA represents Muaūpoko Iwi as an "iwi authority" for the purposes of the Resource Management Act, 1991 (RMA).

Purpose of this evidence

4. The following evidence recommends and provides commentary on how the issues raised within in the CIA should be adopted within the proposed Plan Change (PC4).

5. In preparing this evidence I have read and considered the following additional material:

   (a) Section 42a report of Lauren Baddock

Qualifications and experience

6. I have the following qualifications and experience relevant to this evidence:

   (a) I am a Kaupapa Taiao Specialist practicing at Kāhu Environmental. I have five years' experience working as a Kaupapa Taiao Specialist for iwi, including time in a previous role at Te Ao Tūroa Environmental Centre, the environmental arm of Rangitāne o Manawatū.

   (b) I hold a BSc (Hon) in forest ecology and a BSc (majoring in ecology and environmental science) from the School of Agricultural and Environment at Massey University.

(c) I have undertaken cultural effects assessments and related planning implementation roles for Te Ahu a Turanga Manawatū-Tararua Highway Project, Palmerston North City Council Wastewater Best Practicable Option, Kākātangiata Urban Growth Area and Aokautere Urban Growth Area (Values Assessment), among others. I am the author of Rangitāne o Manawatū Environmental Management Plan.

(d) I have reviewed numerous consent applications on behalf of Rangitāne o Manawatū (Te Ao Tūroa) and Muaūpoko Tribal Authority.

Code of conduct

7. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014. This assessment has been prepared in compliance with that Code, as if it were evidence being given in Environment Court proceedings. In particular, unless I state otherwise, this assessment is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

MTA CIA RECOMMENDATIONS

8. A series of meetings between HDC and MTA have taken place with the primary outcome being agreement on the development of a co-management committee responsible for:

(a) assessment of stormwater management plans and stormwater design approaches;

(b) assessment of cultural effects on significant sites;

(c) co-management of stormwater assets and infrastructure in council ownership;

(d) co-management of Waiopehu Reserve (including the Department of Conservation who also have a role managing the reserve) and the proposed Maunu Wahine Reserve.

9. Planning representatives of each party including myself (for MTA) and Lauren Baddock (for HDC) have met regularly to develop agreed and outstanding positions on recommendations contained within the CIA. The following section details these outcomes.

Partnership

10. MTA accept s42a point 737. MTA and HDC are developing a Treaty Partnership agreement, this is expected to be agreed upon in principle prior to PC4 hearing.

Culturally significant sites

11. Maunu Wahine has been identified on the notified structure plan using Adkins definition found in the Muaūpoko CIA. However, the area designated (30-50meters in width) only provides enough room for a shared active transport pathway, rest area, and beautification plantings.

12. Muaūpoko recognise the Adkins mapped location as the site of Maunu Wahine, this is the site where Muaūpoko go/overlook and hold traditional wānanga (learning experiences). MTA wish for this site to stay designated as Open Space so they can express their values associated with Maunu Wahine within, it also has significant other cultural benefits being located adjacent to Waiopehu Reserve. MTA did not request a specific size for the designation of Maunu Wahine in the CIA, however I confirm that MTA request four hectares, with at least 200 meters east to west width, is designated within the structure plan to provide for their aspirations to celebrate and develop this wāhi tapu.

13. The size requested here will allow Muaūpoko to recreate a spiritual retreat for their woman and children that can be shared with their community; four hectares will provide for the ability to incorporate natural and wild play features, areas of storytelling and wayfinding, undertake cultural plantings for harvesting, create quiet places for ceremonies and karakia, as well as the incorporation of a shared active transport pathway. A smaller or narrow space will not be able to provide for this range of traditional activities and contemporary use requirements.

14. Wai Maire: MTA support the inclusion of Policy 6A.1.6; that culturally important views are maintained along Queen Street East. This contributes to providing for the values Muaūpoko hold with their spiritual pathway and connection to pae maunga (mountain range) Tararua.

15. The location of Wai-hau and other traditional sites cannot be identified with any certainty. Muaūpoko aspire to incorporate the principles and values associated with Wai-hau and other traditional sites in the design of stormwater wetlands and public reserves. The inclusion of the new policy Policy 6A.6.2 has generated a means by which these aspirations can be reached.

16. MTA support the intent of the new policy, Policy 6A.6.2, and request the following amendments are made in red and underlined: Require public parks and reserves to recognise and celebrate Muaūpoko history and values through design, wayfinding, storytelling, naming, and use of planting.

17. Wai-hau and other cultural sites unable to be located with certainty will also be provided for through the use of Muaūpoko Accidental Discovery protocol. This is provided for in Policy 6A.1.2 and is considered a matter of discretion.

Protection of cultural values

18. MTA accept s42a point 747 being earthworks rules as out of scope. MTA support the inclusion of construction effects including earthworks (potential requirement of cut and fill plans, and erosion and sediment plans) as relevant matters of discretion.

19. Regarding 42a point 749. MTA consider parts of Punahau, Lake Horowhenua and Te Awa a te Tau (Koputaroa Stream) as all within the Plan Change area. Punahau is connected to and is a part of the aquifer below Tara Ika, a tributary of Te awa a te Tau runs through Waiopehu Reserve, around four small tributaries run through Tara-Ika. MTA have requested that HDC include a map of these waterways and other culturally significant sites within the district plan (including Maunu Wahine, Wai Maire Stream and spiritual pathway, Waiopehu Reserve, and the Queen Street East bush remnants) to ensure applicants have a full understanding of sites that are of value to Muaūpoko. MTA maintain their request that these sites contained within the Plan Change zone are included on the Structure Plan and they are transferred into a planning map, included as part of PC4.

Stormwater management

20. Amendments to Policy 6A.3.3~~2~~ state within the S42a report: “Recognise te mana o te wai and the kaitiaki relationship of iwi of to the Tara-Ika environment and its connection to Lake Horowhenua by working with iwi to protect the mauri of freshwater through managing stormwater quality and quantity”.

21. The intent of this policy is appreciated however to provide for te mana o te wai, kaitiakitanga and protect the mauri of wai, management of stormwater must be more holistic than management of downstream stormwater quality and quantity.

22. I request the following changes (in red and underlined) to Policy 6A.3.3~~2~~ to give effect to MTA aspirations for the protection of the cultural qualities of wai: Recognise and provide for the principles of te mana o te wai and the role of Muaūpoko as kaitiaki ~~relationship of iwi of to~~ the Tara-Ika environment and its connection to Lake Horowhenua by working with ~~iwi~~ Muaūpoko to protect the mauri of freshwater within Tara-Ika. ~~through and managing stormwater quality and quantity.~~

23. I believe consideration of the quality and quantity of stormwater runoff is appropriately directed through amendments to Policy 6A.3.1 found is the s42a report. “Require an integrated approach to managing stormwater from Tara-Ika to ensure the quality and quantity of runoff does not have an adverse effect on Lake Horowhenua, the Koputaroa Stream, or other downstream environments”.

24. MTA support Policy 6A.3.2 being amended to state that catchment wide (stormwater) facilities avoid culturally significant sites.

25. MTA support the inclusion of the following: Objective 6A.3 be amended to state that stormwater management should avoid natural areas and ecosystems that are sensitive to modifications to changes in groundwater and surface water levels and flows.

Cultural referencing and recognition

26. MTA support the s42a amendments to Policy 6A.1.2 as follows, with one minor amendment (in red and underlined).

“Subdivision, land development and open space reserves in Tara-Ika will acknowledge, protect, and celebrate Muaūpoko values and history and local identity in the following ways:

- Use of both Muaūpoko names, among others, for streets and reserves;
- Protection of culturally significant sites and their values;
- Prioritise use of locally sourced indigenous plants in street and reserve planting;
- Muaūpoko Accidental Discovery and Tikanga Protocol observed during site works”.

27. MTA support the inclusion of the following text: “Muaūpoko have a very strong and enduring relationship with the Tara-Ika area, as it is an area where they have worked, cultivated, hunted and gathered resources for over 1000 years. TaraIka sits between areas of high cultural association to Muaūpoko, including Punahau (Lake Horowhenua) and the Tararua Ranges, and is therefore part of important physical, ecological, visual and spiritual pathways”.

28. MTA support that Muaūpoko are specifically named throughout Chapter 6A.

29. MTA support that Lake Horowhenua is also referred to by its traditional name ‘Punahau’ throughout Chapter 6A.

30. MTA request that Levin or Levin township is also referred to by the traditional name given by Muaūpoko during the Crown acquisition of the traditional land block being 'Taitoko'. That is, Levin is referred to as Levin/ Taitoko throughout Chapter 6A.

31. MTA support the inclusion of "Council and Muaūpoko will co-design an Open Space Design Guide which will include guidance on how to integrate and provide for Muaūpoko relationships and values within Tara-Ika" in the Methods section.

Muaūpoko as an affected party

32. The impacts of subdivision on culturally significant sites and values is a matter of discretion and the recommended policy framework articulates the need to protect cultural values. The Plan has included "engagement with Muaūpoko" as an 'other matter' for developers to follow. When an application is received, Council will need to assess the impacts of the proposal on all relevant matters, including cultural effects. If there is likely to be cultural effects this will require consultation with Muaūpoko as expert advisors. MTA accept this as a procedural matter for Council to consider during the consent processing stage. It is understood that for complying subdivisions, notification is precluded which means identification of affected parties will not be necessary however if cultural effects are identified and not addressed by applicants then this should result in a subdivision that is non-complying and enable Muaūpoko to become an affected party.

33. MTA accept s42a point 775.

Outstanding concerns

34. Objective 5 within the National Policy Statement for Urban Development requires planning decisions in relation to urban development take into account the principles of Te Tiriti o Waitangi; MTA understand these to include the principles of protection. And Policy 9b to take into account the values and aspirations of iwi for urban development. Furthermore, the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna and the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga are a matter of national importance.

35. Muaūpoko CVA and CIA have outlined the value Muaūpoko place on their threatened and at-risk taonga within the landscape as very high and as a key priority. Muaūpoko see these taonga as kaitiaki- a protector over the last remnants of indigenous habitat left within the Tara-Ika landscape; they watch over Muaūpoko spirits as they depart

along the spiritual pathway and Muaūpoko are required in return to ensure they are protected. Muaūpoko wish to see their taonga thrive as a result of urban development; where people and nature are compatible and co-exist.

36. While PC4 has identified key reserves where Muaūpoko kaitiaki and taonga exist essentially protecting them from vegetation clearance, they have made no further attempt to protect these taonga or provide for Muaūpoko aspirations to enhance their values.

37. Co-management of Waiopehu Reserve is provided for in the proposed co-management agreement, however MTA have no commitment around what resourcing this co-management agreement will have and weather Muaūpoko priorities for protection will be met. Muaūpoko are therefore seeking to have outcomes secured through PC4.

38. MTA request that as part of PC4 the values associated with Muaūpoko kaitiaki/taonga are provided for and enhanced. Both key taonga (*Powelliphanta traversii* and *Oligosoma ornatum*) species are classified as conservation dependant, therefore MTA do not see it as appropriate that PC4 progresses without intent to conserve their taonga within the landscape.

39. The desktop assessment of ecological effects for the Tara-Ika residential development undertaken by Wildlands Consulting (Appendix 1) was commissioned by MTA in response to requests by HDC to provide further evidence over and above that contained within the CIA around the effects of urban development.

40. The assessment details the type of impacts and ways in which these values can be provided for. It should be noted that the CIA and Wildlands report draws similar conclusions around ways that biodiversity (taonga) should be provided for including

    (a) Buffer planting

    (b) Measures to address pests and weeds

    (c) Control of cats

41. A new policy is requested to: Require ecological areas, transport corridors, stormwater reserves and open space reserves to be designed and managed in a way that protects and enhances habitat for Muaūpoko taonga.

42. MTA believe Muaūpoko taonga can be provided for through the addition of this policy in combination with Muaūpoko Partnership agreement and the development of the open space design guide.

Conclusion and Recommendations

43. MTA request the changes highlighted in red and underlined within the body of this evidence are adopted within PC4.

Siobhan Karaitiana

2 November 2021

APPENDIX 1: