

Section 42A Report

Light

Prepared for the

Proposed Kaipara District Plan

Report prepared by: [Melissa Pearson](#)

12 November 2025

List of submitters and further submitters addressed in this report:

Submission Number	Submitter
117	G Moore
136	Federated Farmers of New Zealand (Inc) - Northland Province (Federated Farmers)
149	Royal Forest and Bird Protection Society of New Zealand Incorporated (Forest & Bird)
269	Health New Zealand – Te Whatu Ora (Health NZ)
304	Director General of Conservation (DOC)
323	KiwiRail Holdings Limited (KiwiRail)
330	New Zealand Transport Agency (NZTA)
333	NZ Fairy Tern Trust
FS1	Matariki Forests
FS2	Federated Farmers of New Zealand (Inc) - Northland Province (Federated Farmers)
FS3	Director General of Conservation (DOC)
FS4	Mangawhai Hills Limited

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APPENDIX A: OFFICER'S RECOMMENDATION DECISIONS ON SUBMISSIONS - LIGHT

APPENDIX B: OFFICER'S RECOMMENDED AMENDMENTS - LIGHT

APPENDIX C: SECTION 32AA EVALUATION

List of abbreviations used in this report

Abbreviation	Term
KDC	Kaipara District Council
NPS	National Policy Statement
NZCPS	New Zealand Coastal Policy Statement 2010
PDP	Proposed District Plan
REG	Renewable Electricity Generation
RMA	Resource Management Act 1991
RPS	Regional Policy Statement for Northland 2016

Executive Summary

- i. The Proposed Kaipara District Plan (**PDP**) was publicly notified in April 2025. The Light chapter is located in Part 2 – District Wide Matters and contains provisions that manage the adverse effects of lighting on the environment.
- ii. Eight original submitters (with 23 individual submission points) and four further submitters (with 34 individual further submission points) made submissions on the Light topic. The majority of submissions are in support of the proposed Light provisions, particularly submitters from the infrastructure sector. The submitters who are requesting amendments to lighting provisions are largely concerned with the impact of lighting and glare effects on indigenous biodiversity, including impacts on avian fauna and nocturnal insects.
- iii. My recommendations for the Light chapter are summarised as follows:
 - a. No changes to the definition of ‘artificial outdoor lighting’.
 - b. Additional wording in the Overview of the Light chapter to recognise the potential adverse effects of artificial outdoor lighting on indigenous biodiversity.
 - c. New clause inserted into LIGHT-P2 to direct the minimisation of adverse effects of lighting on indigenous biodiversity.
 - d. Amendments to the matters of discretion in LIGHT-R1 to better reflect the policy wording and to provide for the consideration of potential adverse effects of lighting on indigenous biodiversity, including consideration of alternatives.

1. Introduction

1.1 Qualifications and Experience

1. My name is Melissa Leanne Pearson. I am a Principal Planning and Policy Consultant at SLR Consulting New Zealand Limited. I am contracted by Kaipara District Council (**KDC**) to assist with the Proposed Kaipara District Plan (**PDP**). I have been involved in the development of the PDP for KDC since 2021 and have assisted with the drafting of a range of chapters and associated section 32 evaluations, both for the Exposure Draft and the PDP. I was not directly involved in the preparation of the Light chapter prior to notification but was engaged by KDC to be the reporting officer for this topic in September 2025.
2. I hold a Bachelor of Planning (Hons) at the University of Auckland and am a Full Member of the New Zealand Planning Institute.
3. I have 17 years' experience as a resource management practitioner in New Zealand, which has included working for both the private sector and for central and local government on a range of resource consent and policy projects. My private sector planning experience ranges from obtaining resource consents for small and large scale residential and subdivision developments in the Auckland Region, development of private plan changes in both Auckland and Waikato for residential and commercial developments and consenting and policy development experience for clients in the telecommunication, intensive primary production, and community facility sectors.
4. My public sector planning experience involves a significant amount of central government policy research and development relating to telecommunications, forestry, climate change, highly productive land, and infrastructure. My local government policy experience involves drafting of district plan provisions in the Far North, Kaipara, Waikato, Hamilton, and Queenstown Lakes districts for local authorities. These projects have given me significant experience with all parts of the Schedule 1 process from both the public and private sector perspectives, including provision research and development, provision drafting, the preparation of section 32 and 42A reports, preparation of submissions and further submissions, presentation of evidence at council hearings, preparation and resolution of appeals and Environment Court mediation.
5. I have been closely involved in the development and implementation of numerous national direction instruments under the Resource Management Act 1991 (**RMA**) (national policy statements and national environmental standards), from the policy scoping stage through to policy decisions and drafting, the preparation of section 32 evaluation reports and implementation guidance. This includes close involvement in national direction instruments relating to highly productive land, telecommunications, infrastructure, forestry and climate change.

1.2 Preparation of the report

6. I am authorised by KDC to prepare this report under section 42A of the RMA to assist the PDP Hearings Panel. The purpose of this report is to both assist the Hearings Panel in hearing and deciding on submissions made on to the PDP, and to assist submitters in understanding how their submission is being considered as part of the PDP process. This report includes my recommendations on matters raised in submissions, and any changes to the PDP that I consider to be appropriate having considered the statutory requirements.
7. I am the author of this report. The data, information, facts, and assumptions I have considered in forming my opinions are set out in my evidence. Where I have set out opinions in my evidence, I have given reasons for those opinions. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.
8. For the avoidance of doubt, it should be emphasised that any conclusions reached or recommendations that I have made in this report are not binding on the Hearings Panel. It should not therefore be assumed that the Hearings Panel will reach the same conclusions or decisions having considered all the submissions and evidence from submitters. The decision ultimately lies with the Hearings Panel.

1.3 Code of Conduct

9. While this is not a hearing held by the Environment Court, I confirm that I have read the Code of Conduct for Expert Witness in the Environment Court Practice Note 2023 and that I have complied with it when preparing this report. Other than when I state that I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

1.4 Conflict of Interest

10. I confirm that I have no real or perceived conflict of interest.

2. Scope of Report

2.1 Matters addressed by this report

11. The scope of this report is to consider the submissions and further submissions made in respect of the provisions in the Light chapter of the PDP and make recommendations.
12. This section 42A report also addresses the definitions which are specific to the Light chapter, including the definition of 'Artificial Outdoor Lighting'.

2.2 Overview of the topic / chapter

13. As notified, the Light chapter contains the objectives, policies and rules that manage artificial outdoor lighting that is used outside of daylight hours. The focus of the chapter as notified is to ensure safety and security for people and property, particularly in rural, commercial and industrial settings and along the transport network¹. The need for safety and security must be balanced against the adverse effects associated with light spill into sensitive receiving environments and properties adjacent to the transport network².

2.3 Statutory Context

14. On the 24 March 2025, the Government announced that the RMA will be replaced with two new pieces of legislation:
 - a. A Natural Environment Act – focused on managing the natural environment
 - b. A Planning Act – focused on planning to enable development and infrastructure.
15. It is understood that the intention of the Government is to introduce these two new pieces of legislation to Parliament by the end of 2025, with a Select Committee process in 2026, and passage into law before the 2026 general election. At the time of writing this report, this legislation has not yet been introduced to Parliament. The RMA continues to be in effect until when and if this new replacement legislation is passed.
16. The Light section 32 evaluation report provided detail of the relevant statutory considerations with respect to Part 2 of the RMA and the parts of the National Planning Standards relevant to the Light topic. As such, I do not repeat that detail here. With respect to other higher order documents, I note that:
 - a. The New Zealand Coastal Policy Statement 2010 (**NZCPS**) does not explicitly refer to artificial outdoor lighting, however it is acknowledged that light spill can have adverse effects on the natural character of the coastal environment and that the natural darkness of the night sky may form part of the natural character of the coastal environment (refer to Policy 13(2)(e) of the NZCPS). In this context, the coastal environment would be considered a sensitive receiving environment for the purpose of the Light topic.
 - b. No other National Policy Statements or National Environmental Standards are relevant to managing the effects of artificial outdoor light.

¹ 'Transport network' is defined in the PDP as "*means roads, cycleways, footpaths, state highways and rail*".

² Refer to the section 32 evaluation report for the Light Chapter: [Light s32 FINAL.pdf](#)

- c. The Regional Policy Statement for Northland (**RPS**) does not contain any specific direction with respect to managing the effects of artificial outdoor light, however there is more generic direction that the natural darkness of the night sky is an element of natural character to be managed in the context of the coastal environment³. Appendix 2 of the RPS (Regional development and design guidelines) also notes that new subdivision, use and development should adopt (where appropriate) sustainable design technologies such as low-energy street lighting⁴.
17. The four iwi management plans relevant to the Kaipara district were considered as part of developing the PDP, as set out in Section 2.5 of the Section 32 Overview Report⁵. None of these iwi management plans specifically refer to managing artificial outdoor lighting, however from pre-notification engagement and feedback on the Exposure Draft of the PDP, I am aware that iwi place great significance to the night sky and the stars as these play a large part in their culture and traditions. The iwi management plans also make it clear that iwi are kaitiaki of indigenous fauna species and they are concerned with any development (which I consider includes the installation of artificial outdoor lighting) that could have an adverse effect on the habitats of indigenous fauna.

2.4 Procedural matters

18. No submitter, prehearing or Clause 8AA meetings have been undertaken on the Light chapter. There has been no further consultation undertaken since notification.

2.5 Organisation of the report

19. The key issues identified in this report are set out below (arranged by provision):
- a. Light chapter overview, definitions and general submissions;
 - b. Light objectives;
 - c. Light policies; and
 - d. Light rules

³ Refer to 'Natural character assessment criteria', based on Policy 13(2) of the NZCPS, page 157 of the RPS.

⁴ Appendix 2, Part A(p) of the RPS, page 163

⁵

www.kaipara.govt.nz/uploads/District%20Plan%20Review/PDP%20Chapter%2032%20reports/Overview%20Report%20s32%20FINAL.pdf

2.5.1 Submissions and further submissions

20. Eight (8) submissions containing twenty-three (23) submission points were received on the light provisions. Four (4) further submissions were received containing thirty-four (34) further submission points. The summary of submissions and further submissions pertaining to this section 42A report, and my recommendation for each are attached as Appendix A. The original submission and further submission documents can be found on KDC's website.
21. While all submissions have been read and considered in the summary of submissions (Appendix A), responses have not necessarily been written for each individual submission point. To assist the Hearings Panel in achieving clause 10(2) of the First Schedule of the RMA, I have provided reasons for my recommendations to accept or reject submissions and further submissions generally by themes. Responses have been written for individual submissions that raise matters that differ from other submissions within the same thematic group or that request specific amendments to the provisions.

2.5.2 Recommended changes

22. Where I have recommended amending provisions as a result of considering the submissions and further submissions, these are contained as tracked changes in Appendix B. Text that is recommended to be amended is shown as red text for ease of locating, with deletions being struck through, and additional text underlined.
23. No PDP maps require amending in response to submissions on the Light topic.

2.5.3 Section 32AA evaluation report

24. A section 32AA evaluation is only required for changes recommended since notification; if there is no change to the notified version, a section 32AA evaluation is not required. The level of detail in the section 32AA evaluation reports needs to be at a level of detail that corresponds to the scale and significance of the changes recommended. To streamline this report, where a change has been recommended, the corresponding section 32AA evaluation is attached in Appendix C.

3. Topic 1: Light chapter overview, definitions and general submissions

3.1 Introduction

25. This section addresses submissions requesting amendments to the overview of the Light chapter and definitions relevant to the Light chapter. It also addresses more generic submissions on the Light chapter where no specific amendments to provisions have been requested.

3.2 Analysis

Definition of 'Artificial Outdoor Lighting'

26. G Moore [117.2] requests that the definition of 'Artificial Outdoor Lighting' be amended to clarify whether it includes reflective surfaces such as solar panels. Mr Moore notes that reflective surfaces can have adverse effects on natural environments and cause visual pollution, which may be exacerbated in the future when large scale renewable energy projects are proposed. Mr Moore does not suggest any specific wording changes to the definition of 'Artificial Outdoor Lighting' to address his concerns.
27. I understand Mr Moore's concerns to be largely related to light that reflects off a surface, as opposed to light that is emitted from a specific source. I consider that the definition of 'Artificial Outdoor Lighting' as notified is clear that it applies to "*any exterior or non-residential interior lighting that **emits** directly into the outdoor environment and includes signs*" [my emphasis added]. As such, I do not consider that this definition would apply to light reflected off a surface, such as a solar panel, nor do I consider that the Light chapter provisions that rely on this definition were intended to control reflected light. I consider the definition as notified is sufficiently clear that it only applies to light sources that emit light and it does not require further clarification. As such I do not recommend any amendments to the definition of 'Artificial Outdoor Lighting'.
28. I note that Mr Moore has also submitted on the Renewable Electricity Generation (**REG**) chapter, raising similar concerns about glint and glare from the reflective surfaces of solar panels. I consider that the REG chapter is the most appropriate place to assess concerns about reflected light from solar panels as opposed to the Light chapter. Given this position, I do not agree with the further submission from DOC [FS3.1] that a new definition of 'Intrusive lighting' is useful in the context of the Light chapter as this chapter is not intended to manage effects from light reflections or glare.

Overview of the Light chapter

29. There were two submissions on the Overview text of the Light chapter. NZTA [330.77] requests that the Overview text be retained as notified. Forest & Bird [149.96] requests that the following paragraph be added to the Overview text of the Light chapter:

Artificial lighting, including spill and glare, can negatively affect indigenous biodiversity by disrupting natural patterns and behaviours. For example, excessive night lighting can interfere with the movement and feeding of nocturnal insects, which in turn affects species that rely on them for food.

30. Forest & Bird considers it important that the Light Overview text recognises the potential adverse effects of light on natural environment values.

31. I agree in principle with Forest & Bird that potential adverse effects of artificial outdoor lighting on indigenous biodiversity, particularly disrupting the natural behaviours of indigenous fauna, have not been sufficiently recognised in the Light chapter. It is a function of territorial authorities under section 31(1)(b)(iii) of the RMA to control any actual or potential effects of the use, development, or protection of land, including for the purpose of “*the maintenance of indigenous biological diversity*”, which in my view would include managing the adverse effects of light spill and glare from artificial outdoor lighting on indigenous biodiversity.
32. While Forest & Bird requests amendments to the non-statutory Overview text, I consider it appropriate to also carry this theme through the objectives and policies where there is scope to do so in submissions, which I discuss in Topics 2 and 3 below. Recognising the potential adverse effects of artificial outdoor lighting on indigenous biodiversity is a common matter included in District Plan Light chapters nationally. In my view, this is a valid and relevant consideration when processing resource consent applications for infringements of LIGHT-R1 where the proposed lighting is in close proximity to habitats of indigenous fauna.
33. My recommendation for additional Overview text varies slightly from that sought by Forest & Bird to ensure alignment with defined PDP terms, as well as wording have recommended for the Light objectives and policies, but the intent is the same. In particular, my recommended wording focuses on the adverse effects of ‘artificial outdoor lighting’ (as the relevant defined term) and is clear that it is only excessive light spill and glare from artificial outdoor lighting that has the potential to cause adverse effects (as opposed to other forms of lighting or light reflecting off surfaces). It also takes into account the potential alternative wording suggested by Federated Farmers in its further submission [FS2.1], which I agree is more balanced in recognising that not all artificial outdoor lighting inherently causes issues, rather it has the potential to in certain circumstances. However, I think the example included by Forest & Bird is helpful, particularly in the context of a non-statutory part of the chapter.

General submissions

34. Health NZ [269.35] does not seek any specific changes to the Light chapter, however it reserves its position at this stage. Health NZ wants to ensure that any potential recommended changes to the Light chapter provisions do not undermine the operation of the Hospital zone provisions and/or unreasonably control or constrain Hospital and Hospital Related Activity in the Hospital zone.
35. As Health NZ does not ask for any specific relief, I do not recommend any changes in response to this submission. I also do not consider that any of the changes I have recommended in this report in response to other submissions will undermine the Hospital Zone provisions or unreasonably control or constrain hospital operations or activities.

3.3 Recommendations

36. I recommend that the following text is inserted into the Overview of the Light chapter, at the end of the last paragraph:

Light spill and glare from artificial outdoor lighting have the potential, if not managed appropriately, to affect indigenous biodiversity by disrupting natural patterns and behaviours. For example, excessive artificial outdoor lighting can interfere with the movement and feeding of nocturnal insects, which in turn affects species that rely on them for food.

4. Topic 2: Light objectives

4.1 Introduction

37. The three objectives in the Light chapter set out the outcomes expected for artificial outdoor lighting in the Kaipara District. LIGHT-O1 makes it clear that artificial outdoor lighting should minimise adverse effects and be compatible with the surrounding environment. LIGHT-O2 and LIGHT-O3 are more enabling objectives that explain the benefits of lighting (health and safety of people and communities, maintaining and enhancing amenity values) and how lighting can enable a range of activities in all zones, as well as supporting a safe transport network.
38. The submissions on the Light objectives are largely supportive, with LIGHT-O1 receiving one submission in support and LIGHT-O3 receiving two submissions in support. No submissions were received on LIGHT-O2. There are also two submissions requesting new objectives relating to the effects of light on the environment/indigenous biodiversity, as discussed below.

4.2 Analysis

39. NZTA [330.78] requests that LIGHT-O1 be retained as notified. NZTA [330.79] and KiwiRail [323.68] both request that LIGHT-O3 be retained as notified. No changes are requested to either LIGHT-O1 or LIGHT-O3 in original submissions and no submissions were received on LIGHT-O2. I note that the further submission from DOC [FS3.8] objects to the use of the word 'Enable' in LIGHT-O3, which is a matter that is not addressed by any original submissions. I consider 'enable' is appropriate in the context of LIGHT-O3 as it is an objective that outlines the purpose of artificial outdoor lighting as an activity that enables other activities to function. LIGHT-O3 is to be read in conjunction with LIGHT-O1 (which refers to the lighting needing to be compatible with the characteristics and qualities of the surrounding environment) and I have recommended additional changes to other Light provisions to address concerns around indigenous biodiversity in Topics 3 and 4 below. As such, I do not recommend any amendments to these objectives.

40. There are two requests for new objectives:
- a. Forest & Bird [149.97] requests a new objective that states “The design and location of artificial lighting protects indigenous biodiversity from the effects of light spill and glare”.
 - b. DOC [304.115] requests a new objective that states “An environment free from the adverse effects of intrusive lighting”.
41. Both of these suggested new objectives address a similar theme – managing the adverse effects of artificial lighting on indigenous biodiversity (in the case of Forest & Bird) and the environment (in the case of DOC). Firstly, I note that LIGHT-O1 already requires that the design and location of artificial outdoor lighting be “compatible with the characteristics and qualities of the surrounding environment”, which I consider to be essentially the same outcome as the new objective requested by DOC, albeit without a specific reference to indigenous biodiversity. I also do not support the use of terms such as ‘intrusive lighting’ as I consider this to be a subjective term, with no clear guidance in the objective as to what level of lighting would be considered intrusive (noting that I do not consider that DOC’s suggested definition of ‘intrusive lighting’ assists in this context, as set out in Topic 1 above). The Forest & Bird wording provides more specificity as to the outcome being sought by the objective and is clearly focused on indigenous biodiversity. However, I consider that the reference to the ‘surrounding environment’ in LIGHT-O1 inherently includes indigenous biodiversity⁶ and I do not consider it appropriate, at an objective level, to elevate indigenous biodiversity specifically above other aspects of the environment. In my opinion, specific mention of indigenous biodiversity, as requested by Forest & Bird, is best addressed through policies and matters of discretion, as I discuss in Topics 3 and 4 below.

4.3 Recommendations

42. I do not recommend any amendments to the Light objectives in response to submissions.

⁶ The definition of ‘environment’ in the RMA includes:

(a) ecosystems and their constituent parts, including people and communities; and

(b) all natural and physical resources; and

(c) amenity values; and

(d) the social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) or which are affected by those matters

5. Topic 3: Light policies

5.1 Introduction

43. The two policies in the Light chapter provide more specificity as to how the Light objectives will be met. LIGHT-P1 focuses on how artificial outdoor lighting should be provided for, including the purpose of that lighting, the benefits of lighting and where it should be used, noting that adverse effects (including cumulative effects and amenity values of sensitive environments) should be managed. LIGHT-P2 builds on LIGHT-P1.3 by providing more direction on how to address potential adverse effects by managing the intensity, location and duration of artificial outdoor lighting to avoid conflicts and minimise light spill.
44. The submissions on the Light policies are largely supportive, with all submissions supporting LIGHT-P1 and P2 either in full or in part. One submitter requests a minor wording change to better align LIGHT-P1 with the associated objective wording. Two submitters request that additional clauses be added to the policies to manage adverse effects on indigenous biodiversity, including nocturnal avian fauna.

5.2 Analysis

LIGHT-P1

45. NZTA [330.80] and KiwiRail [323.69] request that LIGHT-P1 be retained as notified. Federated Farmers [136.145] supports LIGHT-P1 in part but requests that the word 'health' is inserted into LIGHT-P1.2 to better align with the wording of LIGHT-O2, which recognises lighting for 'health and safety' purposes.
46. I consider that the wording of LIGHT-P1 already adequately addresses both health and safety, as directed by LIGHT-O2. While I agree that LIGHT-P1.2 only mentions 'security and safety', LIGHT-P1.4 states "*Recognising that lighting supports the social, cultural and economic wellbeing of people and communities and their **health and safety***" [my emphasis]. I consider that the combination of clauses 2 and 4 of LIGHT-P1 adequately address both health and safety concerns, in accordance with the direction provided by LIGHT-O2. As such, I do not recommend any wording changes to LIGHT-P1.

LIGHT-P2

47. Federated Farmers [136.147], NZTA [330.81] and KiwiRail [323.70] request that LIGHT-P2 be retained as notified. There are two submitters that support LIGHT-P2 in part but request additional clauses be inserted as follows:

- a. Forest & Bird [149.98] requests a new clause that states “Avoid areas of significant indigenous biodiversity other than necessary for health and safety purposes”. Without this additional wording, Forest & Bird does not consider that LIGHT-P2 adequately recognises the potential adverse effects of light on natural environment values.
 - b. NZ Fairy Tern Trust [333.1] requests a new clause that states “To minimise the adverse effects, including cumulative effects, to protect night flying avian fauna from lighting and glare effects, with reference to intensity, location and direction of artificial outdoor lighting”. NZ Fairy Tern Trust considers this additional wording is needed to provide protection for night flying avian fauna from adverse effects (such as disorientation and endangerment).
48. As I discussed in Topics 1 and 2 above, I consider it appropriate to include a specific reference to the potential impacts of artificial outdoor lighting on indigenous biodiversity, noting that NZ Fairy Tern Trust have a particular interest in night flying avian fauna while Forest & Bird prefer a broader reference to indigenous biodiversity generally. While I agree in principle with the intent of the submissions, I disagree with aspects of the suggested wording as follows:
- a. Referring to ‘areas of significant indigenous biodiversity’, particularly in the context of the word ‘avoid’ is not appropriate in my view given there are no mapped areas of significant indigenous biodiversity in the PDP. Without this mapping, it would not be clear to a decision maker where adverse effects should be ‘avoided’. I am aware that Forest & Bird requests that Significant Natural Areas (**SNA**) be mapped as part of the upcoming Ecosystems and Indigenous Biodiversity topic but that is yet to be heard. In terms of the notified wording of the Ecosystems and Indigenous Biodiversity chapter, the direction to ‘avoid’ adverse effects on significant indigenous vegetation and significant habitat of indigenous fauna is only used in the context of the coastal environment, otherwise the direction is to ‘avoid, remedy or mitigate’ (e.g. ECO-P1 and ECO-P2). As indigenous fauna can reside in areas of indigenous biodiversity that may not be ‘significant’, my preference is not to use this term, particularly not in combination with the term ‘avoid’.
 - b. I note that LIGHT-P1.3 already makes specific reference to cumulative effects, so I do not consider that this needs to be repeated again in LIGHT-P2.
 - c. The clause does not need to repeat the reference to “intensity, location and direction of artificial outdoor lighting”, as this is already covered in the chapeau of the policy.
 - d. The reference to ‘night flying avian fauna’ is too specific when there are examples of non-avian fauna (such as insects, as suggested by Forest & Bird, or potentially bats) that can also be impacted by artificial outdoor lighting.

49. As such, I have recommended an additional clause to LIGHT-P2 that refers to minimising adverse effects on indigenous biodiversity, with particular reference to the habitats of indigenous fauna. In my view, focusing the provision on habitat protection as well as indigenous fauna provides more specificity and focus to the clause, appropriately targeting both the location and the type of fauna likely to be most affected by the adverse effects of artificial outdoor lighting. In my view, the amendments strike a balance between being overly generic i.e. referring to indigenous biodiversity generally, and being overly specific, i.e. only focused on night flying avian fauna. In my view, this recommendation is consistent with, and helps give effect to, higher order direction in the National Policy Statement for Indigenous Biodiversity 2023 (**NPS-IB**) and RPS to protect and maintain indigenous biodiversity.

5.3 Recommendations

50. I recommend that the wording of LIGHT-P2 is amended as follows:

Manage the intensity, location and direction of any artificial outdoor lighting and glare to:

1. Avoid conflict with existing sensitive activities, existing land use activities and the transport network;
2. Minimise light spill at the site boundary; ~~and~~
3. Minimise the night glow from urban environments and light spill from new greenfield development-; ~~and~~
4. Minimise adverse effects on indigenous biodiversity, including the habitats of indigenous fauna.

6. Topic 4: Light rules

6.1 Introduction

51. The Light chapter only contains one rule – LIGHT-R1. This rule states that artificial outdoor lighting is a permitted activity provided the light complies with a 10 lux maximum limit during specified hours when measured from the General residential zone boundary or boundary of a site containing a residential unit. LIGHT-R1 also specifies which New Zealand standards/guidelines must be used to measure and assess the lux limit. If artificial outdoor lighting exceeds the LIGHT-R1 permitted criteria, resource consent is required for a restricted discretionary activity, with matters of discretion limited to matters such as adverse effects of light spill on amenity and character values, the transport network, health, safety and wellbeing of people and communities and areas with dark sky values.

52. The submissions on LIGHT-R1 are largely supportive, with all submissions supporting the rule either in full or in part. There are four submissions requesting a range of changes to LIGHT-R1 that are similar to previous requests for amendments to the other Light provisions – namely to achieve better wording alignment between policy direction and rules, better manage adverse effects on indigenous biodiversity and better manage the adverse glare effects from solar panels.

6.2 Analysis

53. NZTA [330.82] and KiwiRail [323.71] request that LIGHT-R1 be retained as notified. The four other submissions requesting amendments to LIGHT-R1 are as follows:

- a. G Moore [117.11] requests amendments to LIGHT-R1 to include consideration of the reflection/glare from solar panels.
- b. Federated Farmers [136.147] requests that the restricted discretionary activity matters in LIGHT-R1.3.c be amended to refer to the “Adverse effects on the health, safety, security and wellbeing of people and communities”, consistent with policy direction within the chapter.
- c. Forest and Bird [149.99] requests two changes to LIGHT-R1:
 - i. An additional standard to LIGHT-R1.a. for artificial outdoor lighting within the Coastal Environment, Outstanding Natural Features and Landscapes, and areas containing indigenous biodiversity to avoid adverse effects of lighting on indigenous biodiversity; and
 - ii. Three additional matters of discretion focusing on the adverse effects of light on indigenous biodiversity values, options to reduce the extent of effects on these values and consideration of measures for offsetting or compensation.
- d. DOC [304.116] also requests that the matters of discretion for LIGHT-R1 include consideration of adverse ecological effects, noting that there is insufficient focus on adverse lighting effects on the environment, including ecosystems and wildlife. DOC also notes that projects such as solar farms introduce another source of light and glare from the reflection of solar panels.

54. With respect to the submission from Mr Moore, and the commentary from DOC around light and glare reflecting off solar panels, I reiterate that the purpose of the Light chapter is to manage artificial outdoor lighting sources that emit light as opposed to reflected light. As discussed in Topic 1 above, I consider that the REG chapter is the most appropriate place to assess concerns about reflected light and glare from solar panels as opposed to the Light chapter.

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55. With respect to the submission from Federated Farmers, I note that 'security' is specifically mentioned in LIGHT-P1.2 as one of the benefits of artificial outdoor lighting. Although it could be argued that security is inherently an aspect of providing artificial outdoor lighting for safety reasons (which is already mentioned in the matters of discretion), I consider it appropriate to carry through the wording of LIGHT-P1.2 into the matters of discretion for LIGHT-R1 as it provides more specificity and focus for decision makers.
56. Forest & Bird requests a new standard be inserted into LIGHT-R1.a targeting artificial outdoor lighting within the Coastal Environment, in Outstanding Natural Features and Landscapes, and areas containing indigenous biodiversity. However, it is unclear from the submission how Forest & Bird consider artificial outdoor lighting should be managed through the new standard, i.e. whether they are requesting a change in activity status for artificial outdoor lighting in these specified overlays or potentially that the 10 lux limit also be applied at the boundary of these overlays. I agree in principle that LIGHT-R1.a is specifically targeted at managing the adverse effects of artificial outdoor lighting on residential activities as opposed to any other aspects of the natural environment and that, to give effect to the policy direction targeted at protecting indigenous biodiversity, further amendments to LIGHT.R1.a may be appropriate within the scope of Forest & Bird's requested relief.
57. However, there is no information in the Forest & Bird submission about how LIGHT-R.1.a should be applied to Coastal Environment, Outstanding Natural Features and Landscapes or areas containing indigenous biodiversity. There is also no evidence provided that demonstrates that a 10 lux permitted threshold is or is not appropriate to manage adverse effects on indigenous biodiversity values in any of these overlays. Finally, as there are no specific areas of indigenous biodiversity that are mapped in the PDP, there is no boundary or point where a lux level could be measured to achieve compliance with a permitted activity standard. As such, I do not recommend any amendments to LIGHT-R1.a at this time due to absence of evidence. Forest & Bird may wish to provide more detail as to the nature of its requested relief in evidence, which I would respond to in writing via an addendum to my section 42A report prior to the hearing.
58. With respect to the matters of discretion for LIGHT-R1, Forest & Bird and DOC both request similar relief, being amendments to the matters of discretion to better consider the adverse effects of light on indigenous biodiversity values, including options to reduce the extent of effects on these values and consideration of measures for offsetting or compensation. I agree in principle that, as per the policy direction I have recommended, corresponding amendments to the matters of discretion are appropriate to allow effects on indigenous biodiversity to be considered. However, I do not agree that the matters of discretion should go as far as referencing measures for offsetting or compensation. While those concepts are appropriate in the context of the Ecosystems and Indigenous Biodiversity chapter where areas of indigenous biodiversity may be

cleared or damaged, I do not consider that light spill is the type of adverse effect that warrants a compensation or offsetting response. Rather, the focus of the matters of discretion should be on available measures to avoid, remedy or mitigate the adverse effects of light spill, including consideration of various options. I have recommended a new matter of discretion that addresses these matters.

6.3 Recommendations

59. I recommend that the wording of LIGHT-R1 is amended as follows:

- a. Amend LIGHT-R1.3.c to state “Adverse effects on the health, safety, security and wellbeing of people and communities”.
- b. Insert a new matter of discretion stating “the extent to which adverse effects on indigenous biodiversity, including on habitats of indigenous fauna, can be avoided, remedied or mitigated, including consideration of alternative options for the location or design of artificial outdoor lighting”.