

**OFFICER'S REPORT FOR:**

**Independent Hearing Commissioners:**

**Trevor Robinson**

**Mark St Clair**

**Miria Pomare**

**SUBJECT:**

**Proposed Porirua District Plan: LIGHT-Light**

**PREPARED BY:**

**Rory Smeaton, Senior Policy Planner**

**REPORT DATED:**

**3 December 2021**

**DATE OF HEARING:**

**8-9, 11, 14 - 15 February 2022**

## Executive Summary

1. This report considers submissions received by Porirua City Council (the Council) in relation to the relevant objectives, policies, rules and definitions of the Proposed Porirua District Plan (PDP) as they apply to the LIGHT - Light Chapter. The report outlines recommendations in response to the issues that have emerged from these submissions.
2. There were a number of submissions and further submissions received on the Light Chapter. The submissions received were diverse and sought a range of outcomes. The following are considered to be the key issues in contention in the chapter:
  - Complete replacement of the whole chapter, including the objective and policy for reverse sensitivity from existing light sources;
  - Amendments to light provisions to address the effects on the transport network
  - Standards relating to sky glow effects; and
3. This report addresses each of these key issues, as well as any other issues raised by submissions.
4. Light is also subject to a number of consequential amendments arising from submissions to the whole of the PDP and other chapters.
5. I have recommended some changes to the PDP provisions to address matters raised in submissions and are summarised below:
  - Amendment to the introduction and an associated new definition for 'street lighting';
  - Deletion of LIGHT-O2 and LIGHT-P3;
  - Amendment to LIGHT-01 to recognise the 'transport network';
  - Amendments to LIGHT-S2, LIGHT-S4 and LIGHT-S5 to better align the standards in the final version of AS/NZS 4282:201; and
  - Minor amendments to matters of discretion for LIGHT-S5 and LIGHT-S6.
6. Having considered all the submissions and reviewed all relevant statutory and non-statutory documents, I recommend that PDP should be amended as set out in Appendix A of this report.
7. For the reasons set out in the Section 32AA evaluation included throughout this report, I consider that the proposed objectives and provisions, with the recommended amendments, will be the most appropriate means to:
  - a. achieve the purpose of the Resource Management Act 1991 (RMA) where it is necessary to revert to Part 2 and otherwise give effect to higher order planning documents, in respect to the proposed objectives; and
  - b. achieve the relevant objectives of the PDP, in respect to the proposed provisions.

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## Interpretation

8. Parts A and B of the Officer's reports utilise a number of abbreviations for brevity as set out in Table 1 below:

**Table 1: Abbreviations**

Abbreviation	Means
the Act / the RMA	Resource Management Act 1991
AUP	Auckland Unitary Plan
CDP	Christchurch District Plan
the Council	Porirua City Council
HCDP	Hamilton City District Plan
the Operative Plan/ODP	Operative Porirua District Plan 1999
the Proposed Plan/PDP	Proposed Porirua District Plan 2020
GWRC	Greater Wellington Regional Council
NES	National Environmental Standard
NES-AQ	National Environmental Standards for Air Quality 2004
NES-CS	National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health 2011
NES-ETA	National Environmental Standards for Electricity Transmission Activities 2009
NES-FW	National Environmental Standards for Freshwater 2020
NES-MA	National Environmental Standards for Marine Aquaculture 2020
NES-PF	National Environmental Standards for Plantation Forestry 2017
NES-SDW	National Environmental Standards for Sources of Drinking Water 2007
NES-TF	National Environmental Standards for Telecommunication Facilities 2016
NPS	National Policy Statement
NPS-ET	National Policy Statement on Electricity Transmission 2008
NPS-FM	National Policy Statement for Freshwater Management 2020
NPS-UD	National Policy Statement on Urban Development 2020
NPS-REG	National Policy Statement for Renewable Electricity Generation 2011
NZCPS	New Zealand Coastal Policy Statement 2010
PNRP	Proposed Wellington Natural Resources Plan (Decisions Version) 2019
RPS	Wellington Regional Policy Statement 2013

**Table 2: Abbreviations of Submitters' Names**

Abbreviation	Means
Dept of Corrections	Ara Poutama Aotearoa the Department of Corrections
DOC	Department of Conservation Te Papa Atawhai
FENZ	Fire and Emergency New Zealand
Foodstuffs	Foodstuffs North Island Limited
Forest and Bird	Royal Forest and Bird Protection Society
GWRC	Greater Wellington Regional Council
Harvey Norman	Harvey Norman Properties (N.Z.) Limited
Heritage NZ	Heritage New Zealand Pouhere Taonga

House Movers Association	House Movers section of the New Zealand Heavy Haulage Association Inc
Kāinga Ora	Kāinga Ora – Homes and Communities
KiwiRail	KiwiRail Holdings Limited
NZDF	New Zealand Defence Force
Oil companies	Z Energy, BP Oil NZ Ltd and Mobil Oil NZ Limited
Oranga Tamariki	Oranga Tamariki – Ministry of Children
QEII	Queen Elizabeth the Second National Trust
RNZ	Radio New Zealand
Survey+Spatial	Survey+Spatial New Zealand (Wellington Branch)
Telco	Spark New Zealand Trading Limited, Chorus New Zealand Limited, Vodafone New Zealand Limited
Transpower	Transpower New Zealand Ltd
TROTR	Te Rūnanga o Toa Rangatira
Waka Kotahi	Waka Kotahi NZ Transport Agency
WE	Wellington Electricity Lines Limited
Woolworths	Woolworths New Zealand Limited

In addition, references to submissions includes further submissions, unless otherwise stated.

# 1 Introduction

## 1.1 Purpose

9. The purpose of this report is to provide the Hearing Panel with a summary and analysis of the submissions received on the LIGHT - Light Chapter and to recommend possible amendments to the PDP in response to those submissions.
10. This report is prepared under section 42A of the RMA. It considers submissions received by the Council in relation to the relevant strategic objectives, objectives, policies, rules and definitions, as they apply to the LIGHT – Light chapter in the PDP. The report outlines recommendations in response to the key issues that have emerged from these submissions.
11. This report discusses general issues, the original and further submissions received following notification of the PDP, makes recommendations as to whether or not those submissions should be accepted or rejected, and concludes with a recommendation for changes to the PDP provisions or maps based on the preceding discussion in the report.
12. The recommendations are informed by both the technical evidence provided by Glen Wright, which is available on the PDP hearing portal, and the evaluation undertaken by the author. In preparing this report the author has had regard to recommendations made in recommendations made in:
  - Officer's Report Part A: Overarching Matters; and
  - Officer's Report Part B: INF-Infrastructure.
13. This report is provided to assist the Hearings Panel in their role as Independent Commissioners. The Hearings Panel may choose to accept or reject the conclusions and recommendations of this report and may come to different conclusions and make different recommendations, based on the information and evidence provided to them by submitters.
14. This report is intended to be read in conjunction with Officers' Report: Part A – Overview which contains factual background information, statutory context and administrative matters pertaining to the district plan review and PDP.

## 1.2 Author

15. My name is Rory McLaren Smeaton. My qualifications and experience are set out in Appendix C of this report.
16. My role in preparing this report is that of an expert planner.
17. I was involved in the preparation of the PDP, and authored the Section 32 Evaluation Reports for the INF – Infrastructure, REG – Renewable Electricity Generation, SIGN – Signs, LIGHT – Light and NOISE – Noise, and AR – Amateur Radio chapters, and contributed to the report for the TR – Transport chapters.
18. Although this is a Council Hearing, I have read the Code of Conduct for Expert Witnesses contained in the Practice Note issued by the Environment Court December 2014. I have complied with that Code when preparing my written statement of evidence and I agree to comply with it when I give any oral evidence.

19. The scope of my evidence relates to the LIGHT - Light Chapter. I confirm that the issues addressed in this statement of evidence are within my area of expertise as an expert policy planner.
20. Any data, information, facts, and assumptions I have considered in forming my opinions are set out in the part of the evidence in which I express my opinions. Where I have set out opinions in my evidence, I have given reasons for those opinions.
21. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

### **1.3 Supporting Evidence**

22. The expert evidence, literature, legal cases or other material which I have used or relied upon in support of the opinions expressed in this report includes the statement of evidence of Glen Wright on behalf of Porirua City Council (Lighting Evidence).

### **1.4 Key Issues in Contention**

23. A number of submissions and further submissions were received on the provisions relating to the LIGHT - Light Chapter. The submissions received were diverse and sought a range of outcomes; including Kāinga Ora seeking to delete the entire LIGHT - Light Chapter, Matthew Reading seeking provisions to reduce the effects of skyglow and Waka Kotahi seeking recognition of environmental zones for Lighting in AS/NZ 4282.2019 Control of the Obtrusive Effects of Outdoor Lighting'.
24. I consider the following to be the key issues in contention in the chapter:
  - Complete replacement of the whole chapter, including the objective and policy for reverse sensitivity from existing light sources;
  - Amendments to light provisions to address the effects on the transport network; and
  - Standards relating to sky glow effects.
25. I address each of these key issues in this report, as well as any other issues raised by submissions.

### **1.5 Procedural Matters**

26. At the time of writing this report there has not been any pre-hearing conferences, clause 8AA meetings or expert witness conferencing in relation to submissions on this Light Chapter.

## 2 Statutory Considerations

### 2.1 Resource Management Act 1991

27. The PDP has been prepared in accordance with the RMA and in particular, the requirements of:
- section 74 Matters to be considered by territorial authority; and
  - section 75 Contents of district plans.
28. As set out in the Section 32 Evaluation Report Part 1 - Overview to s32 Evaluation, there are a number of higher order planning documents and strategic plans that provide direction and guidance for the preparation and content of the PDP. These documents are discussed in detail within the Section 32 Evaluation Report Part 2: Light Chapter. There is further discussion in the Section 32 Evaluation Report Part 1 – Overview to the s32 Evaluation on the approach the Council has taken to giving effect to the NPS-UD and NPS-FM. This is also discussed in the Officer's Report: Part A.

### 2.2 Section 32AA

29. I have undertaken an evaluation of the recommended amendments to provisions since the initial section 32 evaluation was undertaken in accordance with s32AA . Section 32AA states:

***32AA Requirements for undertaking and publishing further evaluations***

*(1) A further evaluation required under this Act—*

*(a) is required only for any changes that have been made to, or are proposed for, the proposal since the evaluation report for the proposal was completed (the changes); and*

*(b) must be undertaken in accordance with section 32(1) to (4); and*

*(c) must, despite paragraph (b) and section 32(1)(c), be undertaken at a level of detail that corresponds to the scale and significance of the changes; and*

*(d) must—*

*(i) be published in an evaluation report that is made available for public inspection at the same time as the approved proposal (in the case of a national policy statement or a New Zealand coastal policy statement or a national planning standard), or the decision on the proposal, is notified; or*

*(ii) be referred to in the decision-making record in sufficient detail to demonstrate that the further evaluation was undertaken in accordance with this section.*

*(2) To avoid doubt, an evaluation report does not have to be prepared if a further evaluation is undertaken in accordance with subsection (1)(d)(ii).*

30. The required section 32AA evaluation for changes proposed as a result of consideration of submissions with respect to the LIGHT - Light Chapter is contained within the assessment of the relief sought in submissions in section 3 of this report as required by s32AA(1)(d)(ii).



### **2.3 Trade Competition**

31. I do not consider that trade competition is relevant to the LIGHT – Light chapter provisions of the PDP.
32. There are no known trade competition issues raised within the submissions.

### 3 Consideration of Submissions and Further Submissions

#### 3.1 Overview

33. Eleven original submissions were received on the LIGHT – Light chapter. Of those, the majority were on the standards included in the chapter. The common themes that have arisen from the submissions include; the provisions in the Plan lighting standards relating to management of effects on the transport network, and; the effects of lighting on sky glow. Additionally, Kāinga Ora made two further submissions, which are also addressed within this report.

##### 3.1.1 Report Structure

34. Submissions on LIGHT - Light Chapter raised issues which have been grouped into sub-topics within this report. I have considered substantive commentary on primary submissions contained in further submissions as part of my consideration of the primary submission(s) to which they relate.

35. In accordance with Clause 10(3) of the First Schedule of the RMA, I have undertaken the following evaluation on an issues-based approach, as opposed to a submission by submission approach. I have organised the evaluation in accordance with the layout of chapters of the PDP as notified within those sub-topics where relevant.

36. Specific recommendations on each submission / further submission point are contained in Appendix B.

37. The following evaluation should be read in conjunction with the summaries of submissions and the submissions themselves. Where I agree with the relief sought and the rationale for that relief, I have noted my agreement, and my recommendation is provided in the summary of submission table in Appendix B. Where I have undertaken further evaluation of the relief sought in a submission(s), the evaluation and recommendations are set out in the body of this report. I have provided a marked-up version of the Chapter with recommended amendments in response to submissions as Appendix A.

38. This report only addresses definitions that are specific to this topic. Definitions that relate to more than one topic have been addressed in Hearing Stream 1.

##### 3.1.2 Format for Consideration of Submissions

39. For each identified topic, I have considered the submissions that are seeking changes to the PDP in the following format:

- Matters raised by submitters;
- Assessment;
- Summary of recommendations; and
- Section 32AA evaluation.

40. The recommended amendments to the LIGHT - Light Chapter are set out in in Appendix A of this report where all text changes are shown in a consolidated manner.

41. I have undertaken a s32AA evaluation in respect to the recommended amendments in my assessment.

## 3.2 General Submissions

### 3.2.1 Matters raised by submitters

42. Kāinga Ora [81.497 and 81.939] opposes the LIGHT – Light Chapter, and seeks that the full package of provisions are reviewed and amended and consequential changes are made to be consistent with its overall submission on the Plan, for the following reasons:
- The provisions of the chapter are overly complex; opposes use of technical standards to achieve compliance;
  - Support for intensification of existing urban areas; there is a tension in enabling residential activities to occur in commercial zones, while also managing reverse sensitivity effects; provisions that require new sensitive activities in commercial zones to be designed and located to minimise effects on sleep disturbance and manage the design and placement of windows of new buildings to minimise reverse sensitivity effects are onerous and the effects can be adequately managed through internal window coverings such as blinds and curtains;
  - Measurement of compliance off-site, at windows of sensitive activities containing habitable spaces on adjacent sites, is opposed; these provisions should be replaced with illumination standards that better manage both the level of illumination permitted within a site and consequently, light spill and glare; standards should be readily understood to enable compliance and should apply at the site boundaries of light emitting activities;
  - Managing the effects of light spill on the night sky is inappropriate as Porirua is primarily an urban centre.
43. Matthew Reading [32.4] seeks a higher standard of compliance for both upward projected lighting, and the colour temperature of outdoor lighting, so as to generally allow for views of the night sky and to bring the Plan standards closer to international and national best practice.

### 3.2.2 Assessment

44. I disagree with Kāinga Ora [81.497 and 81.939] that the provisions of the LIGHT - Light Chapter should be deleted and replaced in their entirety. The LIGHT - Light Chapter provisions have been considered by an external lighting professional and a Section 32 evaluation undertaken. The submitter has not provided detailed replacement provisions that I can provide a thorough evaluation against, nor provided their own Section 32AA assessment of any such replacement provisions.
45. Specifically in relation to the points raised in by Kāinga Ora [81.497]:
- In relation to the standards being overly complex, while I appreciate that, where possible, it is generally beneficial to ensure that district plan provisions are as simple as possible to avoid administrative costs and compliance issues, I consider that on balance the LIGHT – Light Chapter standards are not overly complex. The standards in the chapter have been based on the advice of a suitably qualified and experienced professional and respond to identified resource management issues. Additionally, I note that the Auckland Unitary Plan (AUP) includes similar standards for illuminance, threshold increment, luminous intensity, and surface luminance.

- In relation to the submitter's opposition to standards being measured off-site, while I recognise that this has implications for monitoring and compliance, I also note that:
  - The AUP includes standards for lighting that requires compliance with vertical illuminance at a window of a habitable room of a lawfully established dwelling<sup>1</sup>;
  - The Christchurch District Plan (CDP) includes standards for light spill that are measured or calculated two metres within the boundary of any adjacent site<sup>2</sup>; and
  - The Hamilton City District Plan (HCDP) includes standards for lighting measured or calculated at points 1.5m within the boundary of any other site<sup>3</sup>.

As such, I consider that there is widespread use of such requirements for lighting being measured within adjacent sites. This matter was also addressed in the report prepared for Porirua City Council by S&T Lighting<sup>4</sup>, which identifies that measurement at the boundary of a site can be restrictive, and it is the effects at the window of an inhabited room which is of primary concern in relation to light spill. For these reasons I consider that standards requiring compliance within adjacent sites is appropriate.

- In relation to the specific comments regarding the provisions that require new sensitive activities in commercial zones to be designed and located to minimise effects on sleep disturbance and manage the design and placement of windows of new buildings to minimise reverse sensitivity effects, this matter is addressed in more detail in section 3.3 below.
  - In relation to the management of effects of light spill on the night sky, this matter is addressed in section 3.6 below.
46. I note that amendments are recommended to the LIGHT – Light Chapter in the sections below in response to other submissions, and therefore I consider that the submission from Kāinga Ora [81.497 and 81.939] should not be rejected outright.
47. In relation to the submission from Matthew Reading [32.4], the relief sought relates to the standard managing sky glow (LIGHT-S5) on which the submitter has sought specific amendments. The amendments are addressed in section 3.6 below. Consistent with the recommendations set out in that section, I consider that some amendments to LIGHT-S5 are warranted to implement a higher standard for upward light ratios, and therefore agree in part with the broader submission point.

### **3.2.3 Summary of recommendations**

48. I recommend for the reasons given in the assessment, that the Hearings Panel:
- a. **Amend** the LIGHT – Light chapter as set out in the sections below and in Appendix A;
49. I recommend that the submission from Kāinga Ora [81.497 and 81.939] and Matthew Reading [32.4] be **accepted in part**.

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<sup>1</sup> Chapter E24 Lighting, E24.6.1 (6) (b) and associated table E24.6.1.3 Vertical illuminance at a window

<sup>2</sup> Chapter 6 General Rules and Procedures, 6.3 Outdoor lighting, 6.3.6 Rules - Light Spill Standards by Zone

<sup>3</sup> Chapter 25.6 Lighting and Glare, 25.6.4 Rules – Specific Standards

<sup>4</sup> Stephenson and Turner (2018) Report on PCC District Plan Lighting Provisions

### 3.3 Reverse sensitivity

#### 3.3.1 Matters raised by submitters

50. Waka Kotahi [82.146 and 82.149] supports LIGHT-02 and LIGHT-P3 for the reason that it supports designing and locating light sensitive activities to reduce conflict with existing artificial lighting, and seeks that the objective and policy be amended to replace the word 'minimise' with 'mitigate'.
51. As identified above in section 3.2, Kāinga Ora [81.497] opposes provisions that require new sensitive activities in commercial zones to be designed and located to minimise effects on sleep disturbance and considers that alternative methods can be utilised to manage reverse sensitivity effects, as opposed to wholesale building placement and design.
52. Kāinga Ora [FS65.279] opposed the relief sought by Waka Kotahi [82.149].

#### 3.3.2 Assessment

53. While LIGHT-02 and LIGHT-P3 relate to managing sensitive activities in proximity of light sources, there are no rules or standards within the Plan that directly give effect to this policy.
54. The supporting information provided with the notified Plan included the report prepared for Porirua City Council by S&T Lighting<sup>5</sup>, which included an evaluation of key institutions (Royal NZ Police College, Whitirea, Kenepuru Community Hospital and BRANZ) in relation to reverse sensitivity from lighting. This concluded that:

*As outdoor lighting for these key institutions is only required for site security and the safe movement of staff and public we believe that such lighting can be provided while meeting permitted activity lighting standards that apply for surrounding properties.*

55. Additionally, the LIGHT – Light chapter exempts public street lighting and helipad and helicopter lighting from being required to comply with the provisions of the chapter. The exclusion for helipad and helicopter lighting addresses an identified issue in relation to potential non-compliance with lighting standards in relation to the Kenepuru Community Hospital.
56. The requirements of provisions included within the LIGHT – Light Chapter address potential effects on sensitive activities from new outdoor artificial lighting activities, including by specifically requiring assessment in relation to sensitive activities on adjacent sites in some cases, and including matters of discretion for effects on established uses and their operation and on indoor amenity values and sleep quality of any nearby residential units.
57. Additionally, I note that INF-P5 includes requirements for sensitive activities to be located and designed to avoid, remedy or mitigate the potential adverse effects on the Rail Corridor and State Highways. My recommended amendments to INF-P5 are set out in the section 42A report for Infrastructure. SUB-P5 also includes considerations for integration of subdivisions with infrastructure.

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<sup>5</sup> Stephenson and Turner (2018) Report on PCC District Plan Lighting Provisions

58. For these reasons, I consider that the potential risk of reverse sensitivity effects from sensitive activities locating in proximity to established activities which utilise outdoor artificial lighting is relatively low. I also agree with Kāinga Ora that any resultant effects are easily managed without the need for regulation within a district plan framework. As such, I consider that it is appropriate that LIGHT-O2 and LIGHT-P5 be deleted.
59. Subsequently, I do not consider that any amendments to the objective and policy, as sought by Waka Kotahi [82.146 and 82.149] are required, and those submissions should be rejected.

### **3.3.3 Summary of recommendations**

60. I recommend for the reasons given in the assessment, that the Hearings Panel:
- a. **Delete** LIGHT-01 and LIGHT-P3 as set out in Appendix A;
61. I recommend that the submission by Waka Kotahi [82.145] be **rejected**.
62. I recommend that the submission from Kāinga Ora [81.939] be **accepted in part**.
63. My recommendations in relation to further submissions reflect the recommendations on the relevant primary submission.

### **3.3.4 Section 32AA evaluation**

64. In my opinion, the deletion of LIGHT-O2 and LIGHT-P5 is more appropriate in terms of achieving the objectives of the PDP than the notified provisions.
65. The objective and policy do not link to any specific rules or standards. An assessment has concluded that key institutions within Porirua can likely comply with permitted activity lighting standards. Therefore, there is a low likelihood of reverse sensitivity issues arising that need to be managed within the Plan. Additionally, the Plan contains policies within other chapters which broadly address sensitive activities within proximity of regionally significant infrastructure. These provisions sufficiently give effect to the strategic objective FC-O3. Therefore, deleting the objective and policy will result in a more efficient and effective framework than the notified provisions, in achieving the objectives of the PDP.

## **3.4 Definitions**

### **3.4.1 Matters raised by submitters**

66. Waka Kotahi [82.144] seeks to define the term 'Public Street Lighting' to better understand if the terminology means all lighting contained within streets and road reserve including but not limited to variable messaging and advanced warning signs; or, if this is specific to street illumination only.

### **3.4.2 Assessment**

67. I agree in part with Waka Kotahi [82.144] that the term 'Public Street Lighting' should be defined for improved plan clarity and useability, and to ensure it is clear what activities are exempt from compliance with this chapter.
68. I note that street lighting standards are included in the INF - Infrastructure Chapter in relation to road design standards, which refer to 'street lighting'. Additionally, the SIGN – Sign Chapter

provides for 'traffic signs' as permitted activities, which are specifically defined as signs erected by road authorities and not signs erected by other parties within a street.

69. I therefore recommend, to be consistent with the INF - Infrastructure Chapter, that the term used within the Plan and the LIGHT – Light Chapter be 'street lighting', and that the term is included in the Definitions Chapter and defined as 'means street illumination, excluding illuminated signs within a street'.

### 3.4.3 Recommendations

70. I recommend for the reasons given in the assessment, that the Hearings Panel:

- a. **Add** a definition of 'street lighting' to the Definitions Chapter as set out below and in Appendix A;

<b><u>Street lighting</u></b>	<b><u>Means street illumination, excluding illuminated signs within a road</u></b>
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- b. **Consequential amendment to** the introduction section of the LIGHT – Light Chapter as set out below and in Appendix A;

<p>The following are all exempt from the rules and standards in this chapter:</p> <ol style="list-style-type: none"> <li>1. <del>Public s</del>Street lighting; and</li> <li>2. Helipad and helicopter lighting.</li> </ol>
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71. I recommend the submission from Waka Kotahi [82.144] be **accepted in part**.

### 3.4.4 Section 32AA evaluation

72. In my opinion, the amendments recommended to the Definitions chapter are more appropriate in terms of achieving the objectives of the PDP than the notified provisions.
73. I consider that the introduction of an appropriate definition in the Plan will result in easier interpretation and implementation of the Plan. Therefore, the amended provisions are more efficient and effective than the notified provisions in achieving the objectives of the PDP.

## 3.5 Effects on the transport network

### 3.5.1 LIGHT-O1

#### 3.5.1.1.1 Matters raised by submitters

74. Waka Kotahi [82.145] seeks LIGHT-O1 be amended to replace the word 'road' to refer to the transport network more broadly. The reasons given for the requested amendment are that the terminology used should consider the whole transport network rather than limiting this to road safety, as effects from lighting can adversely impact all aspects of the transport network.

#### 3.5.1.1.2 Assessment

75. I agree in part with the requested amendment for the same reasons as the submitter. I consider that the current wording of the objective is too narrow. However, I consider that the amendment

to the clause can be improved, and to align more with the supporting policy. I consider that this would appropriately encompass the safety of the users of that network.

#### 3.5.1.1.3 Summary of recommendations

76. I recommend for the reasons given in the assessment, that the Hearings Panel:

- a. Amend LIGHT-O1 as outlined below and in Appendix A:

<b>LIGHT-O1</b>	<b>Appropriate lighting activities</b>
The benefits of the use of artificial lighting are recognised while any adverse effects generated are compatible with the purpose, character and amenity values of the zone and the surrounding area and do not compromise the health and safety of people and communities, including <del>road</del> the safety <u>of the transport network</u> .	

77. I recommend that the submission from Waka Kotahi [82.145] be **accepted in part**.

#### 3.5.1.1.4 Section 32AA evaluation

78. In my opinion, the amendments recommended to LIGHT-O1 are more appropriate in terms of achieving the objectives of the PDP than the notified provisions.

79. I consider that the amendments are consistent with other chapters use of the term 'transport network' and that broadening the objective recognises that lighting effects can have adverse effects on the transport network more broadly. Therefore, the amended provisions are more efficient and effective than the notified provisions in achieving the objectives of the PDP.

### 3.5.2 Policies

#### 3.5.2.1 LIGHT-P1

##### 3.5.2.1.1 Matters raised by submitters

80. Waka Kotahi [82.147] seeks LIGHT-P1 be amended to replace the word 'road' to refer to the transport network and its users more broadly. The reasons given for the requested amendment are that the terminology used should consider the whole transport network rather than limiting this to road safety, as effects from lighting can adversely impact all aspects of the transport network.

##### 3.5.2.1.2 Assessment

81. I agree in part with the requested amendment for the same reasons as the submitter. I consider that the current wording of the policy is too narrow and wouldn't allow consideration of lighting on other aspects of the transport network, for example on the rail corridor.

82. However, I consider that the amendment to the clause can refer more simply to the safety of the transport network. I consider that this would appropriately encompass the safety of the users of that network.

##### 3.5.2.1.3 Summary of recommendations

83. I recommend for the reasons given in the assessment, that the Hearings Panel:

- a. Amend LIGHT-P1 as outlined below in Appendix A:



LIGHT-P1	Appropriate lighting activities
<p>Provide for the use of artificial lighting that:</p> <ol style="list-style-type: none"> <li>1. Generates positive effects for people and communities from the use of sites and facilities during nighttime hours and contributes to the security and safety of private and public spaces;</li> <li>2. Maintains the character and amenity values of the zone and the surrounding area; and</li> <li>3. Does not compromise the social, cultural and economic wellbeing or health and safety of people and communities, including <del>road</del> <u>the</u> safety <u>of the transport network</u>.</li> </ol>	

84. I recommend that the submission from Waka Kotahi [82.147] be **accepted in part**.

#### 3.5.2.1.4 Section 32AA evaluation

85. In my opinion, the amendments recommended to LIGHT-P1 are more appropriate in terms of achieving the objectives of the PDP than the notified provisions.

86. I consider that the amendments are consistent with other chapters use of the term 'transport network' and that broadening the policy to extend to all users such as pedestrians and cyclists recognises that lighting effects can have adverse effects on these users also such as improved visibility. Therefore, the amended provisions are more efficient and effective than the notified provisions in achieving the objectives of the PDP.

### 3.5.2.2 LIGHT-P2

#### 3.5.2.2.1 Matters raised by submitters

87. Waka Kotahi [82.148] seeks that the policy be amended to replace the word 'minimise' with 'mitigate'. No specific reasons are given for this change; however, the submitter states in their general submission point on the Plan that Waka Kotahi consider that the term is difficult to interpret and apply in practice and that 'mitigate' aligns with the effects hierarchy under the RMA.

#### 3.5.2.2.2 Assessment

88. I disagree with the submitter for the same reasons expressed the section 42A report for Part A Overarching Matters, for Waka Kotahi submission point 82.296 in section 9.11.

89. Additionally, I note that while 'minimise' directs that the effects be reduced to the most extent possible, 'mitigate' only requires that those effects are reduced or lessened. As such, I consider that the term 'minimise' actually provides a stronger directive in the context of this policy, and is therefore more appropriate.

#### 3.5.2.2.3 Summary of recommendations

90. I recommend for the reasons given in the assessment, that the submission by Waka Kotahi [82.148] be **rejected**.

### 3.5.3 Standards

#### 3.5.3.1 LIGHT-S1

##### 3.5.3.1.1 Matters raised by submitters

91. Waka Kotahi [82.151] seeks LIGHT-S1 be amended to refer to 'environmental zones' and associated lighting limits, for the reason that an assessment to identify the underlying environmental zoning identified in Table 3.1 of 'AS/NZ 4282.2019 Control of the Obtrusive Effects of Outdoor Lighting' is required to ensure lighting and lighting levels are appropriate in each environmental zone.
92. Kāinga Ora [FS65.280] opposed the relief sought by Waka Kotahi [82.151].

##### 3.5.3.1.2 Assessment

93. Mr Glen Wright's evidence addresses Waka Kotahi [82.151]. Mr Wright advises that he does not recommend the adoption of the Waka Kotahi request, for the reason that this has already been done in the preparation of the LIGHT - Light Chapter and such an amendment would have the potential to create ambiguity and disagreement.
94. Mr Wright also notes that the lighting rules applicable to PDP zones were determined through an assessment to identify the underlying environmental zoning as identified in Table 3.1 of AS/NZ 4282:2019 and that these zones were assigned to the PDP zones to determine the appropriate AS/NZ 4282:2019 recommendations on lighting limits.
95. The assessment referred to by Mr Wright is set out in the report prepared for the Council by S&T Lighting<sup>6</sup>, and again in Table 1 of his evidence.
96. I agree with the conclusion reached by Mr Wright in his evidence. Consequently, I do not agree with the amendment sought by Waka Kotahi [82.151] and do not recommend any changes for LIGHT-S1.

##### 3.5.3.1.3 Summary of recommendations

97. I recommend for the reasons given in the assessment, that the submission by Waka Kotahi [82.151] be **rejected**.
98. My recommendations in relation to further submissions reflect the recommendations on the relevant primary submission.

#### 3.5.3.2 LIGHT-S2, LIGHT-S3 and LIGHT-S4

##### 3.5.3.2.1 Matters raised by submitters

99. Waka Kotahi [82.152, 82.153 and 82.154] seeks that LIGHT-S2, LIGHT-S3 and LIGHT-S4 be amended to include a clause in each standard relevant to the Rural Zones and the FUZ – Future Urban Zone that 'Where lighting is visible from a state highway limits are to be identified per Table 3.2 of AS/NZ 4282.2019 Control of the Obtrusive Effects of Outdoor Lighting'.
100. Additionally, Waka Kotahi [82.152] seeks that:

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<sup>6</sup> Stephenson and Turner (2018) Report on PCC District Plan Lighting Provisions

- In relation to relation to LIGHT-S2:
  - Additional clauses be added so that illuminance is measured at '[t]he edge of the state highway carriageway closest to the lighting source if applicable'; and
  - LIGHT-S2-1.a be reduced to five Lux; and
- In relation to LIGHT-S4, that the adaptative luminance be one candela per square metre in clause two, and five candelas per square metre in clause two.

101. The reasons given for the requested amendments are that Waka Kotahi does not support the approach to identify maximum lighting levels within the Rural Zones and the FUZ – Future Urban Zone, as within AS/NZ 4282:2019 lighting levels are dependent on the underlying environmental zone and are not able to be broadly applied as presented in this section and sufficient consideration has not been given to the measurement of vertical illuminance when adjacent or facing state highways.

102. Waka Kotahi [82.154] also states that they seek the adaption luminance levels to align with Table 3.2 of AS/NZ 4282:2019, as they do not align with this standard.

103. Kāinga Ora [FS65.280] opposed the relief sought by Waka Kotahi [82.152, 82.153 and 82.154].

#### 3.5.3.2.2 Assessment

104. Mr Glen Wright's evidence addresses the submission point in respect of the amendment sought by Waka Kotahi [82.152, 82.153 and 82.154]. Mr Wright advises that he does not recommend the adoption of the Waka Kotahi request to change to a requirement for the underlying environmental zoning to be determined through reference to AS/NZS4282 as this has already been done in the preparation of the LIGHT - Light Chapter, as addressed in section 3.5.3.1 above.

105. Additionally, Mr Wright does not support the addition of measurement provisions where lighting is visible from a state highway and the adoption of limits on the vertical illuminance at the edge of the state highway carriageway, as the current zone rules provide adequate protection of state highway road users.

106. Mr Wright states that he does support the request that the lux limit in rule LIGHT-S2.1a is changed from 10 lux to 5 lux, and the amendments to the adaptive luminance levels in LIGHT-S4, as this would align with the final version of AS/NZS 4282:2019.

107. Mr Wright notes that the lux limit in LIGHT-S2-3.b should also be changed from four to five lux, to align with the final version of AS/NZS 4282:2019. I note that Waka Kotahi have not sought this amendment; however, I consider that I can rely on the scope provided by Kāinga Ora [81.939] and recommend that this standard also be amended as suggested by Mr Wright.

108. Similarly, LIGHT-S4-1 is also suggested by Mr Wright to be amended from 1 candela per square metre to 0.2 candelas per square metre. Waka Kotahi have not sought this amendment; however, I consider that I can rely on the scope provided by Kāinga Ora [81.939] for a wholesale review of the light provisions and recommend that this standard also be amended as suggested by Mr Wright.

109. Mr Wright also notes that the final version of AS/NZS 4282:2019 amended the Threshold Increment limit from 15% to 20%; however, he recommends retaining the limit of 15% as it provides a higher level of protection to road users.

110. I agree with the reasons and conclusions reached by Mr Wright. Consequently, I agree in part with the requested amendments sought by Waka Kotahi in so far as the change to the Lux levels in LIGHT-S2, and adaption luminance in LIGHT-S4, to better align with AS/NZS 4282:2019.

### 3.5.3.3 Summary of recommendations

111. I recommend for the reasons given in the assessment, that the Hearings Panel:

- a. Amend LIGHT-S2 as outlined below and in Appendix A:

LIGHT-S2 Light spill		
<b>General Rural Zone</b> [...]	1. Outdoor artificial lighting must not exceed the following vertical illuminance levels: a. 7.00am – 10.00pm: <del>40</del> <u>5</u> Lux; and b. 10.00pm – 7.00am: One Lux. [...]	Matters of discretion are restricted to: [...]
	[...]	
<b>Neighbourhood Centre Zone</b> [...]	3. Outdoor artificial lighting must not exceed the following vertical illuminance levels: a. 7.00am – 10.00pm: 25 Lux; and b. 10.00pm – 7.00am: <del>4</del> <u>5</u> Lux. [...]	Matters of discretion are restricted to: [...]

LIGHT-S4 Effects on road users		
<b>General Rural Zone</b> [...]	1. Outdoor artificial lighting must not exceed a 15% threshold increment (based on adaption luminance of <del>4</del> <u>0.2</u> cd/m <sup>2</sup> ) when calculated in the direction of travel within each traffic lane of any public road.	Matters of discretion are restricted to: [...]
<b>Residential Zones</b> [...]	2. Outdoor artificial lighting must not exceed a 15% threshold increment limit (based on adaption luminance of <del>2</del> <u>1</u> cd/m <sup>2</sup> ) when calculated in the direction of travel within each traffic lane of any public road.	Matters of discretion are restricted to: [...]
<b>Neighbourhood Centre Zone</b> [...]	3. Outdoor artificial lighting must not exceed a 15% threshold increment limit (based on adaption luminance of <del>5</del> <u>40</u> cd/m <sup>2</sup> ) when calculated in the direction of travel within each traffic lane of any public road.	Matters of discretion are restricted to: [...]

112. I recommend that the submission by Waka Kotahi [82.152, 82.153 and 82.154] be **accepted in part**.

#### 3.5.3.4 Section 32AA evaluation

113. In my opinion, the amendments recommended to LIGHT-S2 and LIGHT-S4 are more appropriate in terms of achieving the objectives of the PDP than the notified provisions.

114. I consider that the amendments are in line with current best practice as they align with a recognised and recently reviewed New Zealand standard. Therefore, the amended provisions are more efficient and effective than the notified provisions in achieving the objectives of the PDP.

## 3.6 Sky Glow

### 3.6.1 Matters raised by submitters

115. Matthew Reading [32.1, 32.2. and 32.3] seeks a higher standard of compliance for both upward projected lighting, and the colour temperature of outdoor lighting. In particular, he seeks that where possible upward projected light should be targeted at zero percent.

116. Matthew Reading seeks that all of the standards in LIGHT-S5 state:

*Outdoor artificial lighting must not project any light above a horizontal plane. Any fittings or applications where this is not achievable should either be operated on a fixed timer circuit where the fixture is not illuminated between 10pm-7am, or should be on a motion-activated circuit which illuminates the fixture for a maximum of 5 minutes upon movement being detected. Fixtures used should not emit light at a colour temperature exceeding 3000K.*

117. The reasons given for the requested amendment are that; zero percent upward lighting is relatively easy to achieve with modern fixtures; an inability to achieve zero percent upward lighting should either be on a timer to be off between 10pm-7am, or should be on a motion activated circuit which illuminates on movement for a maximum of 5 minutes; and outdoor fixtures should also utilise light sources that do not exceed a colour temperature of 3000K which also decreases the impact on sky glow and follows global best practice. The submitter states that this better aligns with the goal of not adversely affecting views of the night sky.

118. As identified in section 3.2 above, Kāinga Ora [81.497 and 81.939] opposes the LIGHT – Light Chapter, and seeks that full package of provisions are reviewed and amended and consequential changes to be consistent with its overall submission on the Plan, specifically, the submitter states that managing the effects of light spill on the night sky is inappropriate as Porirua is primarily an urban centre.

### 3.6.2 Assessment

119. Mr Glen Wright's evidence addresses the amendment sought by Matthew Reading [32.1, 32.2. and 32.3].

120. Mr Wright advises that the upward light ratio limits in the final version of AS/NZS 4282:2019 has been changed to lower values than those included in the LIGHT – Light Chapter. These

lower values would reduce permitted levels close to zero percent. The required changes to LIGHT-S5 Skyglow to align with AS/NZS 4282:2019 would be:

1. Outdoor artificial lighting must not exceed an upward light ratio of ~~3~~1%.
2. Outdoor artificial lighting must not exceed an upward light ratio of ~~5~~2%.
3. Outdoor artificial lighting must not exceed an upward light ratio of ~~15~~3%.

121. Mr Wright also advises that the amendments requested by the submitter have been taken from the recent plan change implemented by South Wairarapa District Council (SWDC) with which Mr Wright was involved as a lighting expert. In relation to these, Mr Wright states that:

*Adoption [of the standards] would place a burden on the community and council monitoring as it is a very restrictive measure with no light projection permitted above the horizontal.*

122. Mr Wright therefore states that the amendments sought could be adopted, if the Council wish to demonstrate environmental leadership, but if these are not favoured, the amendment to the existing standards to align with the final version of AS/NZS 4282:2019 are recommended.

123. I agree with the reasons and conclusions reached by Mr Wright. I consider that the appropriate approach is to adopt the upward light ratios from the final version of AS/NZS 4282:2019. I consider that this provides appropriate protection from adverse effects on the ability to view of the night sky, while not imposing unacceptable costs on the community or the Council in relation to compliance and administration. As such, I consider that this is efficient and effective, and is the most appropriate way to achieve the objective.

### 3.6.3 Summary of recommendations

124. I recommend for the reasons given in the assessment, that the Hearings Panel:

- a. Amend LIGHT-S5 as set out below and in Appendix A:

LIGHT-S5	Sky glow	
<b>General Rural Zone</b> [...]	1. Outdoor artificial lighting must not exceed an upward light ratio of <del>1</del> <u>3</u> %.	Matters of discretion <b>are</b> restricted to: [...]
<b>Residential Zones</b> [...]	2. Outdoor artificial lighting must not exceed an upward light ratio of <del>2</del> <u>5</u> %.	Matters of discretion <b>are</b> restricted to: [...]
<b>Neighbourhood Centre Zone</b> [...]	3. Outdoor artificial lighting must not exceed an upward light ratio of <del>3</del> <u>15</u> %.	Matters of discretion <b>are</b> restricted to: [...]

125. The submission by Matthew Reading [32.1, 32.2. and 32.3] are accepted in part.

### **3.6.4 Section 32AA evaluation**

126. In my opinion, the amendments recommended to LIGHT-S5 are more appropriate in terms of achieving the objectives of the PDP than the notified provisions.
127. I consider that the amendments are in line with current best practice as they align with a finalised New Zealand standard. While there may be some additional costs from a more restrictive standard, because the recommended standards will be aligned with the relevant New Zealand (and Australian) standard I consider that the lighting industry, including relevant professionals and manufacturers, will be familiar with these standards and the industry as a whole will adapt to the more restrictive requirements, and therefore any increased costs for complying with the standards will be relatively small. Therefore, the amended provisions are more efficient and effective than the notified provisions in achieving the objectives of the PDP.

### **3.7 Minor Errors**

1. I recommend that amendments be made to the LIGHT – Light Chapter to fix the matters of discretion for LIGHT-S5 and LIGHT-S6 to include the word 'are'. These amendments could have been made after the PDP was notified through the RMA process to correct minor errors<sup>7</sup>, but I recommend the amendments are made as part of the Hearing Panel's recommendations for completeness and clarity. The amendment is set out below.

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<sup>7</sup> Clause 16 of RMA Schedule 1

## 4 Conclusions


2. Submissions have been received in support of, and in opposition to, the PDP. Having considered all the submissions and reviewed all relevant statutory and non-statutory documents, I recommend that PDP should be amended as set out in Appendix A of this report.
3. For the reasons set out in the Section 32AA evaluation included throughout this report, I consider that the proposed objectives and provisions, with the recommended amendments, will be the most appropriate means to:
  - a. achieve the purpose of the Resource Management Act 1991 (RMA) where it is necessary to revert to Part 2 and otherwise give effect to higher order planning documents, in respect to the proposed objectives; and
  - b. achieve the relevant objectives of the PDP, in respect to the proposed provisions.

### Recommendations:

I recommend that:

1. The Hearing Commissioners accept, accept in part, or reject submissions (and associated further submissions) as outlined in Appendix B of this report; and
2. The PDP is amended in accordance with the changes recommended in Appendix A of this report.

### Signed:

Name and Title		Signature
Report Author	Rory Smeaton Senior Policy Planner	



## Appendix A. Recommended Amendments to the Definitions and LIGHT – Light Chapters

Where I recommend changes in response to submissions, these are shown as follows:

- Text recommended to be added to the PDP is in red and underlined.
- Text recommended to be deleted from the PDP is in red and ~~struckthrough~~.

# LIGHT - Light

Artificial lighting enables work, recreation and entertainment activities to occur outside of normal daylight hours. It also provides additional safety and security to sites and the activities that occur on them. However, artificial lighting can result in adverse effects on the occupiers and users of adjoining sites and the transport network if not carefully designed due to light spill and glare. If not appropriately screened or orientated, it can also result in light pollution that adversely affects the view of the night sky.

The provisions for artificial lighting provide for adequate lighting that both supports activities and enables safety and security for people and communities, while minimising potential adverse effects beyond the site.

The following are all exempt from the rules and standards in this chapter:

3. ~~Public~~ Street lighting<sup>8</sup>; and
4. Helipad and helicopter lighting.

## Objectives

### LIGHT- O1 Appropriate lighting activities

The benefits of the use of artificial lighting are recognised while any adverse effects generated are compatible with the purpose, character and amenity values of the zone and the surrounding area and do not compromise the health and safety of people and communities, including ~~read the~~ safety of the transport network.

### LIGHT- O2 Reverse sensitivity<sup>9</sup>

~~New activities that are sensitive to the effects of artificial lighting are designed and located to minimise conflict and reverse sensitivity effects.~~

## Policies

### LIGHT- P1 Appropriate lighting activities

Provide for the use of artificial lighting that:

1. Generates positive effects for people and communities from the use of sites and facilities during nighttime hours and contributes to the security and safety of private and public spaces;
2. Maintains the character and amenity values of the zone and the surrounding area; and
3. Does not compromise the social, cultural and economic wellbeing or health and safety of people and communities, including ~~read the~~ safety of the transport network.<sup>10</sup>

<sup>8</sup> Waka Kotahi [82.144]

<sup>9</sup> Kāinga Ora [81.939]

<sup>10</sup> Waka Kotahi [82.145]

<b>LIGHT- P2</b>	<b>Potentially inappropriate lighting activities</b>
<p>Minimise the adverse effects of the use of artificial lighting having regard to:</p> <ol style="list-style-type: none"> <li>1. The extent to which it avoids conflict with existing sensitive activities and the transport network;</li> <li>2. Effects on other established uses and their operation;</li> <li>3. The extent to which any adverse effects can be internalised to the site within which artificial lighting is located, and minimised at site boundaries;</li> <li>4. The effects on visual observation of the night sky;</li> <li>5. The intensity, location and direction of artificial lighting;</li> <li>6. Whether it is consistent with best practice; and</li> <li>7. Any adverse effects on the health, safety and wellbeing of people and communities in the surrounding area, including sleep disturbance.</li> </ol>	
<b>LIGHT- P3</b>	<b>Reverse sensitivity<sup>11</sup></b>
<p><del>Require sensitive activities located within and adjacent to the Commercial and Mixed Use Zones, General Industrial Zone and Sport and Active Recreation Zone, to:</del></p> <ol style="list-style-type: none"> <li><del>1. Ensure that habitable rooms are designed and located so as to minimise any sleep disturbance from light spill; and</del></li> <li><del>2. Mitigate any unreasonable light spill to areas of private outdoor living area through screening, separation or topography.</del></li> </ol>	
<b>Rules</b>	
<p>Note: There may be a number of provisions that apply to an activity, building, structure or site. Resource consent may therefore be required under rules in this chapter as well as other chapters. Unless specifically stated in a rule, resource consent is required under each relevant rule. The steps to determine the status of an activity are set out in the General Approach chapter.</p> <p>Rules relating to subdivision, including minimum allotment sizes for each zone, are found in the Subdivision chapter.</p>	
<b>LIGHT-R1</b>	<b>Outdoor artificial lighting</b>
	<p><b>All zones</b>      1. Activity status: <b>Permitted</b></p> <p>Where this activity complies with the following standards:</p> <ol style="list-style-type: none"> <li>a. LIGHT-S1;</li> <li>b. LIGHT-S2;</li> <li>c. LIGHT-S3;</li> <li>d. LIGHT-S4;</li> <li>e. LIGHT-S5; and</li> <li>f. LIGHT-S6.</li> </ol>
	<p><b>All zones</b>      2. Activity status: <b>Restricted discretionary</b></p> <p>Where:</p>

<sup>11</sup> Kāinga Ora [81.939]

	<p>a. Compliance is not achieved with LIGHT-S2, LIGHT-S3, LIGHT-S4, LIGHT-S5, or LIGHT-S6.</p> <p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> <li>1. The matters of discretion of any infringed standard.</li> </ol>	
<b>All zones</b>	<p>3. Activity status: <b>Discretionary</b></p> <p>Where:</p> <ol style="list-style-type: none"> <li>a. Compliance is not achieved with LIGHT-S1.</li> </ol>	
<b>Standards</b>		
<b>LIGHT-S1</b>	<b>General standards</b>	
<b>All zones</b>	<ol style="list-style-type: none"> <li>1. Lighting limits must be measured and assessed in accordance with AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting. In the event of any conflict between AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting and the District Plan, the District Plan shall prevail.</li> <li>2. Any calculation for the purposes of these standards must be based on a maintenance factor of 1.0 (i.e. no depreciation shall be taken into account for reduction in light levels over time).</li> <li>3. Where measurements of any illuminance above background levels from the use of artificial lighting cannot be made because the artificial lighting cannot be turned off, measurements must be made in areas of a similar nature that are not affected by the artificial lighting. The result of these measurements shall be used for determining the effects of the artificial lighting.</li> <li>4. Where an activity is located on a site which adjoins or is separated by a</li> </ol>	<p>There are no matters of discretion for this standard.</p>

	road from a different zone, the activity on the site must meet the relevant zone standards for light for the adjoining zone at the zone boundary.	
<b>LIGHT-S2</b>	<b>Light spill</b>	
<b>General Rural Zone</b> <b>Rural Lifestyle Zone</b> <b>Settlement Zone</b> <b>Future Urban Zone</b>	<p>1. Outdoor artificial lighting must not exceed the following vertical illuminance levels:</p> <p>c. 7.00am – 10.00pm: <del>405</del><sup>12</sup> Lux; and</p> <p>d. 10.00pm – 7.00am: One Lux.</p> <p>The vertical illuminance shall be measured at:</p> <p>a. Any window of a habitable room of a building used for a sensitive activity on any adjacent site; or</p> <p>b. The minimum setback distance for buildings and structures used for residential purposes for the relevant zone of an adjacent site if that site does not contain a building used for a sensitive activity. The vertical extent of the calculation points for vertical illuminance shall be between:</p> <p>i. 1.5m above ground level; and</p> <p>ii. The maximum building height permitted by the relevant zone.</p>	<p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> <li>1. The safety of the transport network;</li> <li>2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> <li>3. Conflict with existing sensitive activities;</li> <li>4. Effects on indoor amenity values and sleep quality of any nearby residential units;</li> <li>5. Any positive effects generated from the use of artificial lighting; and</li> <li>6. Effects on established uses and their operation.</li> </ol>
<b>Residential Zones</b> <b>Open Space and Recreation Zones</b>	<p>2. Outdoor artificial lighting must not exceed the following vertical illuminance levels at the site boundary:</p> <p>a. 7.00am – 10.00pm: 10 Lux; and</p>	<p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> <li>1. The safety of the transport network;</li> <li>2. The number, placement, design, height, colour, orientation and</li> </ol>

<sup>12</sup> Waka Kotahi [82.152]

<b>Māori Purpose Zone (Hongoeka)</b>	b. 10.00pm – 7.00am: two Lux.	screening of light fittings and light support structures; 3. Conflict with existing sensitive activities; 4. Effects on indoor amenity values and sleep quality of any nearby residential units; 5. Any positive effects generated from the use of artificial lighting; and 6. Effects on established uses and their operation.
<b>Neighbourhood Centre Zone</b>  <b>Local Centre Zone</b>  <b>Large Format Retail Zone</b>  <b>Mixed Use Zone</b>  <b>City Centre Zone</b>  <b>General Industrial Zone</b>  <b>Hospital Zone</b>  <b>Special Purpose Zone (BRANZ)</b>	3. Outdoor artificial lighting must not exceed the following vertical illuminance levels: a. 7.00am – 10.00pm: 25 Lux; and b. 10.00pm – 7.00am: 45 <sup>13</sup> Lux.  The vertical illuminance shall be measured at: a. Any window of a habitable room of a building used for a sensitive activity on any adjacent site; or b. The minimum setback distance for buildings and structures for the relevant zone on an adjacent site if that site does not contain a building used for a sensitive activity. The vertical extent of the calculation points for vertical illuminance shall be between: i. 1.5m above ground level; and ii. The maximum building height permitted by the relevant zone.	Matters of discretion are restricted to: 1. The safety of the transport network; 2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures; 3. Conflict with existing sensitive activities; 4. Effects on indoor amenity values and sleep quality of any nearby residential units; 5. Any positive effects generated from the use of artificial lighting; and 6. Effects on established uses and their operation.

<sup>13</sup> Kāinga Ora [81.939]

<b>LIGHT-S3</b>		<b>Glare</b>
<b>General Rural Zone</b> <b>Rural Lifestyle Zone</b> <b>Settlement Zone</b> <b>Future Urban Zone</b>	1. Outdoor artificial lighting on any site adjacent to a road, or adjacent to a site which contains a building used for a sensitive activity, must be selected, located, aimed, adjusted and/or screened so that the luminous intensity does not exceed the following: a. 7.00am – 10.00pm: 7,500 cd; and b. 10.00pm – 7.00am: 500 cd.	Matters of discretion are restricted to: 1. The safety of the transport network; 2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures; 3. Conflict with existing sensitive activities; 4. Effects on indoor amenity values and sleep quality of any nearby residential units; 5. Any positive effects generated from the use of artificial lighting; and 6. Effects on established uses and their operation.
<b>Residential Zones</b> <b>Open Space and Recreation Zones</b> <b>Māori Purpose Zone (Hongoeka)</b>	2. Outdoor artificial lighting on any site adjacent to a road, or adjacent to a site which contains a building used for a sensitive activity, must be selected, located, aimed, adjusted and/or screened so that the luminous intensity does not exceed the following: a. 7.00am – 10.00pm: 10,000 cd; and b. 10.00pm – 7.00am: 1000 cd.	Matters of discretion are restricted to: 1. The safety of the transport network; 2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures; 3. Conflict with existing sensitive activities; 4. Effects on indoor amenity values and sleep quality of any nearby residential units; 5. Any positive effects generated from the use of artificial lighting; and 6. Effects on established uses and their operation.
<b>Neighbourhood Centre Zone</b> <b>Local Centre Zone</b>	3. Outdoor artificial lighting on any site adjacent to a road, or adjacent to a site which contains a building used for a sensitive activity, must be selected, located, aimed, adjusted and/or	Matters of discretion are restricted to: 1. The safety of the transport network; 2. The number, placement, design, height, colour,

<p><b>Large Format Retail Zone</b></p> <p><b>Mixed Use Zone</b></p> <p><b>City Centre Zone</b></p> <p><b>General Industrial Zone</b></p> <p><b>Hospital Zone</b></p> <p><b>Special Purpose Zone (BRANZ)</b></p>	<p>screened so that the luminous intensity does not exceed the following:</p> <p>a. 7.00am to 10.00pm: 25,000 cd; and</p> <p>b. 10.00pm to 7.00am: 2,500 cd.</p>	<p>orientation and screening of light fittings and light support structures;</p> <p>3. Conflict with existing sensitive activities;</p> <p>4. Effects on indoor amenity values and sleep quality of any nearby residential units;</p> <p>5. Any positive effects generated from the use of artificial lighting; and</p> <p>6. Effects on established uses and their operation.</p>
<p><b>LIGHT-S4      Effects on road users</b></p>		
<p><b>General Rural Zone</b></p> <p><b>Rural Lifestyle Zone</b></p> <p><b>Settlement Zone</b></p> <p><b>Future Urban Zone</b></p>	<p>1. Outdoor artificial lighting must not exceed a 15% threshold increment (based on adaption luminance of <del>4</del> <u>0.2</u><sup>14</sup> cd/m<sup>2</sup>) when calculated in the direction of travel within each traffic lane of any public road.</p>	<p>Matters of discretion are restricted to:</p> <p>1. The safety of the transport network;</p> <p>2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</p> <p>3. Any positive effects generated from the use of artificial lighting; and</p> <p>4. Effects on established uses and their operation.</p>
<p><b>Residential Zones</b></p> <p><b>Open Space and Recreation Zones</b></p> <p><b>Māori Purpose Zone (Hongoeka)</b></p>	<p>2. Outdoor artificial lighting must not exceed a 15% threshold increment limit (based on adaption luminance of <del>21</del> <u>21</u> cd/m<sup>2</sup>) when calculated in the direction of travel within each traffic lane of any public road.</p>	<p>Matters of discretion are restricted to:</p> <p>1. The safety of the transport network;</p> <p>2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</p> <p>3. Any positive effects generated from the use of artificial lighting; and</p>

<sup>14</sup> Kāinga Ora [81.939]



		4. Effects on established uses and their operation.
<b>Neighbourhood Centre Zone</b> <b>Local Centre Zone</b> <b>Large Format Retail Zone</b> <b>Mixed Use Zone</b> <b>City Centre Zone</b> <b>General Industrial Zone</b> <b>Hospital Zone</b> <b>Special Purpose Zone (BRANZ)</b>	3. Outdoor artificial lighting must not exceed a 15% threshold increment limit (based on adaption luminance of <del>405</del> <sup>15</sup> cd/m <sup>2</sup> ) when calculated in the direction of travel within each traffic lane of any public road.	Matters of discretion are restricted to: <ol style="list-style-type: none"> <li>1. The safety of the transport network;</li> <li>2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> <li>3. Any benefits (e.g. safety) from the artificial lighting; and</li> <li>4. Effects on established uses and their operation.</li> </ol>
<b>LIGHT-S5 Sky glow</b>		
<b>General Rural Zone</b> <b>Rural Lifestyle Zone</b> <b>Settlement Zone</b> <b>Future Urban Zone</b>	1. Outdoor artificial lighting must not exceed an upward light ratio of <del>31</del> <sup>16</sup> %.	Matters of discretion <u>are</u> <sup>17</sup> restricted to: <ol style="list-style-type: none"> <li>1. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> <li>2. Effects on views to the night sky;</li> <li>3. Effects on visual amenity; and</li> <li>4. Any positive effects generated from the use of artificial lighting.</li> </ol>

<sup>15</sup> Waka Kotahi [82.152]

<sup>16</sup> Matthew Reading [32.3]

<sup>17</sup> Clause 16 minor amendment

<b>Residential Zones</b>  <b>Open Space and Recreation Zones</b>  <b>Māori Purpose Zone (Hongoeka)</b>	2. Outdoor artificial lighting must not exceed an upward light ratio of <del>52</del> <sup>18</sup> %.	Matters of discretion <u>are</u> <sup>19</sup> restricted to: <ol style="list-style-type: none"> <li>1. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> <li>2. Effects on views to the night sky;</li> <li>3. Effects on visual amenity; and</li> <li>4. Any positive effects generated from the use of artificial lighting.</li> </ol>
<b>Neighbourhood Centre Zone</b>  <b>Local Centre Zone</b>  <b>Large Format Retail Zone</b>  <b>Mixed Use Zone</b>  <b>City Centre Zone</b>  <b>General Industrial Zone</b>  <b>Hospital Zone</b>  <b>Special Purpose Zone (BRANZ)</b>	3. Outdoor artificial lighting must not exceed an upward light ratio of <del>453</del> <sup>20</sup> %.	Matters of discretion <u>are</u> <sup>21</sup> restricted to: <ol style="list-style-type: none"> <li>1. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> <li>2. Effects on views to the night sky;</li> <li>3. Effects on visual amenity; and</li> <li>4. Any positive effects generated from the use of artificial lighting.</li> </ol>
<b>LIGHT-S6 Externally illuminated surfaces</b>		
<b>General Rural Zone</b>  <b>Rural Lifestyle Zone</b>	1. The average surface luminance for an intentionally artificially lit building façade shall not exceed 5 cd/m <sup>2</sup> .	Matters of discretion <u>are</u> <sup>22</sup> restricted to: <ol style="list-style-type: none"> <li>1. The safety of the transport network;</li> </ol>

<sup>18</sup> Matthew Reading [32.2]

<sup>19</sup> Clause 16 minor amendment

<sup>20</sup> Matthew Reading [32.1]

<sup>21</sup> Clause 16 minor amendment

<sup>22</sup> Clause 16 minor amendment

<p><b>Settlement Zone</b></p> <p><b>Future Urban Zone</b></p>	<p>Note: The limits may be determined by calculation or measurement in accordance with CIE 150:2017 Guide on the limitation of the effects of obtrusive light from outdoor lighting installations, Second Edition.</p>	<ol style="list-style-type: none"> <li>2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> <li>3. Conflict with existing sensitive activities;</li> <li>4. Effects on indoor amenity values and sleep quality of any nearby residential units;</li> <li>5. Any positive effects generated from the use of artificial lighting; and</li> <li>6. Effects on established uses and their operation.</li> </ol>
<p><b>Residential Zones</b></p> <p><b>Open Space and Recreation Zones</b></p> <p><b>Māori Purpose Zone (Hongoeka)</b></p>	<p>2. The average surface luminance for an intentionally artificially lit building façade shall not exceed 10 cd/m<sup>2</sup>.</p> <p>Note: The limits may be determined by calculation or measurement in accordance with CIE 150:2017 Guide on the limitation of the effects of obtrusive light from outdoor lighting installations, Second Edition.</p>	<p>Matters of discretion <b>are</b><sup>23</sup> restricted to:</p> <ol style="list-style-type: none"> <li>1. The safety of the transport network;</li> <li>2. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> <li>3. Conflict with existing sensitive activities;</li> <li>4. Effects on indoor amenity values and sleep quality of any nearby residential units;</li> <li>5. Any positive effects generated from the use of artificial lighting; and</li> <li>6. Effects on established uses and their operation.</li> </ol>
<p><b>Neighbourhood Centre Zone</b></p> <p><b>Local Centre Zone</b></p> <p><b>Large Format Retail Zone</b></p>	<p>3. The average surface luminance for an intentionally artificially lit building façade shall not exceed 25 cd/m<sup>2</sup>.</p> <p>Note: The limits may be determined by calculation or</p>	<p>Matters of discretion <b>are</b><sup>24</sup> restricted to:</p> <ol style="list-style-type: none"> <li>1. The safety of the transport network;</li> <li>2. The number, placement, design, height, colour, orientation and</li> </ol>

<sup>23</sup> Clause 16 minor amendment

<sup>24</sup> Clause 16 minor amendment

<b>Mixed Use Zone</b>	measurement in accordance with CIE 150:2017 Guide on the limitation of the effects of obtrusive light from outdoor lighting installations, Second Edition.	screening of light fittings and light support structures;
<b>City Centre Zone</b>		3. Conflict with existing sensitive activities;
<b>General Industrial Zone</b>		4. Effects on indoor amenity values and sleep quality of any nearby residential units;
<b>Hospital Zone</b>		5. Any positive effects generated from the use of artificial lighting; and
<b>Special Purpose Zone (BRANZ)</b>		6. Effects on established uses and their operation.

# Definitions

[...]

<b>Structure</b>	has the same meaning as in section 2 of the RMA: means any building, equipment, device, or other facility, made by people and which is fixed to land; and includes any raft.	NPS definition
<b><u>Street lighting</u></b> <sup>25</sup>	<u>Means street illumination, excluding illuminated signs within a road.</u>	
<b>Subdivision</b>	has the same meaning as “subdivision of land” in section 218 of the RMA: means— a. the division of an allotment— i. by an application to the Registrar-General of Land for the issue of a separate certificate of title for any part of the allotment; or ii. by the disposition by way of sale or offer for sale of the fee simple to part of the allotment; or iii. by a lease of part of the allotment which, including renewals, is or could be for a term of more than 35 years; or iv. by the grant of a company lease or cross lease in respect of any part of the allotment; or v. by the deposit of a unit plan, or an application to the Registrar-General of Land for the issue of a separate certificate of title for any part of a unit on a unit plan; or b. an application to the Registrar-General of Land for the issue of a separate certificate of title in circumstances where the issue of that certificate of title is prohibited by section 226.	NPS definition

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<sup>25</sup> Waka Kotahi [82.144]

## **Appendix B. Recommended Responses to Submissions and Further Submissions**

The recommended responses to the submissions made on this topic are presented in Table B 1 below.

Table B 1: Recommended responses to submissions and further submissions

Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to PDP?
<b>General Submissions</b>							
81.939	Kāinga Ora – Homes and Communities	General	Opposes the Light chapter provisions in its current proposed state and seeks the full package of provisions (objectives, policies, rules and definitions) are reviewed and amended.	3.2	Accept in part	See body of report	Yes
81.497	Kāinga Ora – Homes and Communities	General	Kāinga Ora seeks consequential changes consistent with its overall submission on the Plan. In This regard, Kāinga Ora seeks the deletion of all provisions and a full review of the chapter. Key areas of concern are (but not limited to): 1. Provisions that require compliance by measuring lighting spill levels within adjacent land in their entirety; these provisions should be replaced with illumination standards that better manage both the level of illumination permitted within a site and consequently, light spill and glare. 2. Provisions that require new sensitive activities in commercial zones to be designed and located to minimise effects on sleep disturbance – alternative methods (e.g. effective curtains) can be utilised to manage reverse sensitivity effects, as opposed to wholesale building placement/design; 3. Provisions managing effects on the night sky; 4. Overly complicated standards and rules to ascertain compliance and use of Technical standards to achieve compliance.	3.2	Accept in part	See body of report	Yes
32.4	Matthew Reading	General	A higher standard of compliance for both upward projected lighting, and the colour temperature of outdoor lighting.	3.2	Accept in part	See body of report	Yes
264.58	Te Rūnanga o Toa Rangatira	General	Retain as notified.	n/a	Accept in part	Subject to amendments made in response to other submissions	No
<b>Definitions</b>							
82.144	Waka Kotahi NZ Transport Agency	New Definition	Define the term "Public Street Lighting"  Needs to understand if this terminology is inclusive of all lighting contained within streets and road reserve including but not limited to variable messaging and advanced warning signs; or, if this is specific to street illumination only.	3.4	Accept in part	See body of report	Yes
<b>FUZ Zone lighting</b>							
90.4	Derek and Kristine Thompson	General	Light spill and glare provisions should be the same as for the General Rural Zone.	n/a	Accept	FUZ Zone lighting provisions are the same as the General Rural Zone. Therefore no changes are recommended.	No
93.4	Graham Twist	General	Light spill and glare provisions should be the same as for the General Rural Zone.	n/a	Accept	FUZ Zone lighting provisions are the same as the General Rural Zone. Therefore no changes are recommended.	No

Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to PDP?
89.4	Sandra Johnston	Judgeford Flat	In respect of the Judgeford Flat FUZ: Light spill and glare provisions should be the same as for the General Rural Zone.	n/a	Accept	FUZ Zone lighting provisions are the same as the General Rural Zone. Therefore no changes are recommended.	No
76.3	John Hungerford	Judgeford Flat	In respect of the Judgeford Flat FUZ: Light spill and glare provisions should be the same as for the General Rural Zone.	n/a	Accept	FUZ Zone lighting provisions are the same as the General Rural Zone. Therefore no changes are recommended.	No
44.3	Magdalena Conradie	Judgeford Flat	In respect of the Judgeford Flat FUZ: Light spill and glare provisions should be the same as for the General Rural Zone.	n/a	Accept	FUZ Zone lighting provisions are the same as the General Rural Zone. Therefore no changes are recommended.	No
162.3	Victoria and Nick Coad	Judgeford Flat	In respect of the Judgeford Flat FUZ: Light spill and glare provisions should be the same as for the General Rural Zone.	n/a	Accept	FUZ Zone lighting provisions are the same as the General Rural Zone. Therefore no changes are recommended.	No
<b>Reverse sensitivity</b>							
82.146	Waka Kotahi NZ Transport Agency	LIGHT-O2	Amend provision: New activities that are sensitive to the effects of artificial lighting are designed and located to <del>minimise</del> <u>mitigate</u> conflict and reverse sensitivity effects.	3.3	Reject	See body of report	No
82.149 <sup>26</sup>	Waka Kotahi NZ Transport Agency	LIGHT-P3	Amend provision: Require sensitive activities located within and adjacent to the Commercial and Mixed Use Zones, General Industrial Zone, <del>and</del> Sport and Active Recreation Zone, <del>or adjacent to the transport network</del> to:  1. Ensure that habitable rooms are designed and located so as to <del>minimise</del> mitigate any sleep disturbance from light spill; and [...]	3.3	Reject	See body of report	No
<b>Effects on the transport network</b>							
82.145	Waka Kotahi NZ Transport Agency	LIGHT-O1	Amend provision: The benefits of the use of artificial lighting are recognised while any adverse effects generated are compatible with the purpose, character and amenity values of the zone and the surrounding area and do not compromise the health and safety of people and communities, including <del>road</del> <u>transport network</u> safety.	3.5.1	Accept in part	See body of report	Yes
82.147	Waka Kotahi NZ Transport Agency	LIGHT-P1	Amend provision:	3.5.2.1	Accept in part	See body of report	Yes

<sup>26</sup> Oppose – Kainga Ora, [FS65.279]



Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to PDP?
			3. Does not compromise the social, cultural and economic wellbeing or health and safety of people and communities, including <del>road</del> <u>the transport network and its user's safety.</u>				
82.148	Waka Kotahi NZ Transport Agency	LIGHT-P2	Amend provision: <del>Minimise</del> <u>Mitigate</u> the adverse effects of the use of artificial lighting having regard to:	3.5.2.2	Reject	See body of report	No
82.150	Waka Kotahi NZ Transport Agency	LIGHT-R1	Retain as notified.	n/a	Accept in part	Agree with the submitter for the reasons stated in their submission.	No
82.151 <sup>27</sup>	Waka Kotahi NZ Transport Agency	LIGHT-S1	Amend provision:  1. Lighting <u>environmental zones</u> and associated lighting limits must be measured and assessed in accordance with AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting. In the event of any conflict between AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting and the District Plan, the District Plan shall prevail.	3.5.3.1	Reject	See body of report	No
82.152 <sup>28</sup>	Waka Kotahi NZ Transport Agency	LIGHT-S2	Amend provision:  1. Outdoor artificial lighting must not exceed the following vertical illuminance levels:  a. 7.00am – 10.00pm: <del>10</del> <u>Five</u> Lux; <del>and</del>  b. 10.00pm – 7.00am: One Lux; <u>and</u>  c. <u>Where lighting is visible from a state highway limits are to be identified per Table 3.2 of AS/NZ 4282.2019 Control of the Obtrusive Effects of Outdoor Lighting.</u>  The vertical illuminance shall be measured at:  a. Any window of a habitable room of a building used for a sensitive activity on any adjacent site; or  b. The minimum setback distance for buildings and structures used for residential purposes for the relevant zone of an adjacent site if that site does not contain a building used for a sensitive activity. The vertical extent of the calculation points for vertical illuminance shall be between:	3.5.3.2	Accept in part	See body of report	Yes

<sup>27</sup> Oppose – Kainga Ora, [FS65.280]

<sup>28</sup> Oppose – Kainga Ora, [FS65.280]

Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to PDP?
			<p>i. 1.5m above ground level; and</p> <p>ii. The maximum building height permitted by the relevant zone; <u>or</u></p> <p><u>c. The edge of the state highway carriageway closest to the lighting source if applicable.</u></p> <p>2. Outdoor artificial lighting must not exceed the following vertical illuminance levels at the site boundary:</p> <p>a. 7.00am – 10.00pm: 10 Lux; and</p> <p>b. 10.00pm – 7.00am: two Lux.</p> <p><u>The vertical illuminance shall be measured at:</u></p> <p><u>a. The edge of the state highway carriageway closest to the lighting source if applicable.</u></p> <p>3. Outdoor artificial lighting must not exceed the following vertical illuminance levels:</p> <p>a. 7.00am – 10.00pm: 25 Lux; and</p> <p>b. 10.00pm – 7.00am: 4 Lux.</p> <p>The vertical illuminance shall be measured at:</p> <p>a. Any window of a habitable room of a building used for a sensitive activity on any adjacent site; or</p> <p>b. The minimum setback distance for buildings and structures for the relevant zone on an adjacent site if that site does not contain a building used for a sensitive activity. The vertical extent of the calculation points for vertical illuminance shall be between:</p> <p>i. 1.5m above ground level; and</p> <p>ii. The maximum building height permitted by the relevant zone.</p> <p><u>c. The edge of the state highway carriageway closest to the lighting source if applicable.</u></p>				

Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to PDP?
82.153 <sup>29</sup>	Waka Kotahi NZ Transport Agency	LIGHT-S3	Amend provision:  1. Outdoor artificial lighting on any site adjacent to a road, or adjacent to a site which contains a building used for a sensitive activity, must be selected, located, aimed, adjusted and/or screened so that the luminous intensity does not exceed the following:  a. 7.00am – 10.00pm: 7,500 cd; and  b. 10.00pm – 7.00am: 500 cd.  <u>c. Where lighting is visible from a state highway limits are to be identified per Table 3.3 of AS/NZ 4282.2019 Control of the Obtrusive Effects of Outdoor Lighting.</u>	3.5.3.2	Reject	See body of report	No
82.154 <sup>30</sup>	Waka Kotahi NZ Transport Agency	LIGHT-S4	Amend provision:  1. Outdoor artificial lighting must not exceed a 15% threshold increment (based on adaption luminance of 1 cd/m <sup>2</sup> ) when calculated in the direction of travel within each traffic lane of any public road; or,  <u>Where lighting is visible from a state highway limits are to be identified per Table 3.2 of AS/NZ 4282.2019 Control of the Obtrusive Effects of Outdoor Lighting.</u>  2. Outdoor artificial lighting must not exceed a 15% threshold increment limit (based on adaption luminance of $\geq 1$ cd/m <sup>2</sup> ) when calculated in the direction of travel within each traffic lane of any public road.  3. Outdoor artificial lighting must not exceed a 15% threshold increment limit (based on adaption luminance of $\geq 5$ cd/m <sup>2</sup> ) when calculated in the direction of travel within each traffic lane of any public road.	3.5.3.2	Accept in part	See body of report	No
<b>Sky Glow</b>							
32.1	Matthew Reading	LIGHT-S5	Sky Glow  <b>Neighbourhood Centre Zone</b>  3. Outdoor artificial lighting must not exceed  Matters of discretion restricted to:  1. The number, placement, design, height, colour,	3.6	Accept in part	See body of report	Yes

<sup>29</sup> Oppose – Kainga Ora, [FS65.280]<sup>30</sup> Oppose – Kainga Ora, [FS65.280]

Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to PDP?
			<p><b>Local Centre Zone</b> an upward light ratio of 15%. <u>not project any light above a horizontal plane. Any fittings or applications where this is not achievable should either be operated on a fixed timer circuit where the fixture is not illuminated between 10pm-7am, or should be on a motion-activated circuit which illuminates the fixture for a maximum of 5 minutes upon movement being detected. Fixtures used should not emit light at a colour temperature exceeding 3000K.</u></p> <p><b>Large Format Retail Zone</b></p> <p><b>Mixed Use Zone</b></p> <p><b>City Centre Zone</b></p> <p><b>General Industrial Zone</b></p> <p><b>Hospital Zone</b></p> <p><b>Special Purpose Zone (BRANZ)</b></p>			<p>orientation and screening of light fittings and light support structures;</p> <ol style="list-style-type: none"> <li>2. Effects on views to the night sky;</li> <li>3. Effects on visual amenity; and</li> <li>4. Any positive effects generated from the use of artificial lighting.</li> </ol>	
32.2	Matthew Reading	LIGHT-S5	Sky Glow	3.6	Accept in part	See body of report	Yes

Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to PDP?
			<p>2. Outdoor artificial lighting must <del>not</del> exceed an upward light ratio of 5%. <del>not</del> project any light above a horizontal plane. Any fittings or applications where this is not achievable should either be operated on a fixed timer circuit where the fixture is not illuminated between 10pm-7am, or should be on a motion-activated circuit which illuminates the fixture for a maximum of 5 minutes upon movement being detected. Fixtures used should not emit light at a colour temperature exceeding 3000K.</p> <p><b>Residential Zones</b></p> <p><b>Open Space and Recreation Zones</b></p> <p><b>Maori Purpose Zone (Hongoeka)</b></p>				
			<p>Matters of discretion restricted to:</p> <ol style="list-style-type: none"> <li>1. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> <li>2. Effects on views to the night sky;</li> <li>3. Effects on visual amenity; and</li> <li>4. Any positive effects generated from the use of artificial lighting.</li> </ol>				
32.3	Matthew Reading	LIGHT-S5	<p>Sky Glow</p> <p><b>General Rural Zone</b></p> <p>1. Outdoor artificial lighting must <del>not exceed</del> an upward light ratio of 3%. <del>not</del> project any light above a horizontal plane.</p>	3.6	Accept in part	See body of report	Yes
			<p>Matters of discretion restricted to:</p> <ol style="list-style-type: none"> <li>1. The number, placement, design, height, colour, orientation and screening of light fittings and light support structures;</li> </ol>				

Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to PDP?
			<p><b>Rural Lifestyle Zone</b> <u>Any fittings or applications where this is not achievable should either be operated on a fixed timer circuit where the fixture is not illuminated between 10pm-7am, or should be on a motion-activated circuit which illuminates the fixture for a maximum of 5 minutes upon movement being detected. Fixtures used should not emit light at a colour temperature exceeding 3000K.</u></p> <p><b>Settlement Zone</b></p> <p><b>Future Urban Zone</b></p>				

## Appendix C. Report Author's Qualifications and Experience

My name is Rory McLaren Smeaton.

I hold the following qualifications:

- Master of Planning Practice (First Class Honours) (University of Auckland);
- Postgraduate Diploma in Science in Geography (with Distinction) (University of Canterbury);  
and
- Bachelor of Science in Geography (University of Canterbury).

I am a full member of the New Zealand Planning Institute. I have nine years' experience working as a planner for local and central government organisations, and a multi-disciplinary consultancy.

I have been employed by the Porirua City Council since April 2020 as a Senior Policy Planner within the Environment and City Planning Team. My work at PCC has included finalising PDP chapters and preparing the associated section 32 reports, summarising submissions, and preparing section 42A reports.