

LIGHT

Light

DRAFT
WAITAKI DISTRICT PLAN



Waitaki

DISTRICT COUNCIL
TE KAUNIHERA Ā ROHE O WAITAKI

Light

Introduction

Artificial outdoor light provides safety and security to residential properties, businesses and open space. It also enables people and communities to undertake activities beyond normal daylight hours. However, artificial outdoor light may result in adverse lighting effects that can cause nuisance to nearby residents, users of adjacent areas and to astronomical observation. The three main types of obtrusive or adverse lighting effects are light spill and glare, which adversely affect health and general well-being, and artificial sky glow, which adversely affects views of the night sky. Correct design, positioning and/or shading of the light source can avoid or minimise these effects.

The Waitaki District contains areas where artificial light is limited, and the views of the night sky are valued by locals and tourists alike. The Plan seeks to protect night sky values by controlling light pollution in light sensitive environments where their natural values and qualities may be affected by artificial light, including the townships of Lake Ōhau, Ōmārama, Otematata, Kakanui and Moeraki, and open space areas, such as Cape Wanbrow.

The light provisions enable artificial lighting to support activities and provide a safe environment while minimising potential adverse effects beyond the site.

Helicopter lighting, including helipads, are exempt from the rules and standards in the chapter. In addition, the provisions do not apply to specific types of activities or lighting which have an important functional role, such as navigational aids and vehicle lights.

Objectives

LIGHT-O1 Artificial outdoor light

The benefits of the use of artificial outdoor lighting are recognised while ensuring that artificial outdoor light is designed and located to:

1. be compatible with the purpose, character and qualities of the zone; and
2. maintain the health and safety of people; and
3. maintain safe operation of the transport network and the safety of transport users; and
4. protect the values and qualities of light sensitive environments.

LIGHT-O2 Reverse sensitivity

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

Policies

LIGHT-P1 The benefits of artificial outdoor lighting

Provide for the use of artificial outdoor lighting that:

1. maintains the character and amenity values of the zone and the surrounding area; and
2. contributes to the security and safety of private and public areas; and
3. does not compromise the social, cultural and economic well-being or health and safety of people and communities; and
4. does not compromise road safety.

LIGHT-P2 Managing adverse effects

Minimise the effects from artificial outdoor lighting by having regard to:

1. effects on other established uses and their operation, including existing sensitive activities and the transport network; and
2. the extent to which adverse effects from artificial outdoor lighting can be internalised to the site and minimised at site boundaries; and
3. the intensity, location and direction of artificial outdoor lighting; and
4. the effects of artificial sky glow on the night sky within light sensitive environments; and
5. any adverse effects on the health, safety and well-being of people and communities.

LIGHT-P3 Managing reverse sensitivity

Encourage new sensitive activities in the Town Centre Zone, Open Space Zone, Sport and Active Recreation Zone and Industrial Zones to minimise reverse sensitivity effects by ensuring that habitable rooms are designed and located to minimise adverse effects of light spill on people's health and general well-being.

Rules

Note: For certain activities, a resource consent may be required by rules in more than one chapter in the District Plan. Unless expressly stated otherwise by a rule, resource consent is required under each of those rules. The steps to determine the status of an activity are set out in the General Approach Chapter.

PERMITTED ACTIVITIES

LIGHT-R1 Outdoor Artificial Light		
<p>All zones</p>	<p>Activity status: Permitted</p> <p>Where:</p> <p>PER-1 Where the activity complies with LIGHT-S1, LIGHT-S2, LIGHT-S3, LIGHT-S4 and LIGHT-S5; and</p> <p>PER-2 If the artificial outdoor light is adjacent to a light sensitive environment, it must:</p> <ol style="list-style-type: none"> 1. be fully shielded (See LIGHT-APP1 – Lighting Fixtures); 2. have a colour corrected temperature of no greater than 2200K (warm white); 3. utilise timers and motion sensors or dimmers between 10:00pm and 7:00am. <p>PER-3 PER-1 and PER-2 do not apply to:</p> <ol style="list-style-type: none"> 1. helicopter lighting or helipads; or 2. traffic signals and navigation aids; or 3. lights of vehicles, trains and aircraft; or 4. temporary lighting for emergency response purposes. <p><i>Note:</i> <i>Streetlights are subject to the provisions of this chapter.</i></p>	<p>Activity status when compliance is not achieved: Restricted Discretionary</p> <p>Where RDIS-1 Compliance is not achieved with LIGHT-S1, LIGHT-S2, LIGHT-S3, or LIGHT-S5</p> <p>Matters discretion are restricted to:</p> <ol style="list-style-type: none"> 1. the matters of discretion of any infringed standard. <p>Activity status when compliance is not achieved: Non-Complying</p> <p>Where NC-1 Compliance is not achieved with LIGHT-S4 or PER-2</p>

	<p><i>However, it should be noted that existing use rights would apply to the existing streetlight network. In addition to 'existing use rights' both State Highways and local roads are designated. A designation has the effect of 'trumping' or superseding the provisions of the District Plan.</i></p>	
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LIGHT STANDARDS

LIGHT-S1	Traffic Safety	
Residential Zones Open Space Zone Sports and Active Recreation Zone	1. Artificial outdoor lighting operating on any site must not exceed a 15% threshold increment limit (based on adaption luminance of 2 cd/m ²) when calculated in the direction of travel within each traffic lane of any State Highway, Arterial, or Principal Road.	Matters of discretion are restricted to: <ol style="list-style-type: none"> 1. transport network safety; and 2. the location, design, number, orientation and screening of the artificial outdoor light, including its support structure(s); and 3. any positive effects generated from the use of artificial outdoor lighting; and 4. any effects on established uses, including their operation.
General Rural Zone Rural Lifestyle Zone Settlement Zone Special Purpose Zone - Lakes Light Sensitive Environments	2. Artificial outdoor lighting operating on any site must not exceed a 15% threshold increment limit (based on adaption luminance of 1 cd/m ²) when calculated in the direction of travel within each traffic lane of any State Highway, Arterial, or Principal Road.	Matters of discretion are restricted to: <ol style="list-style-type: none"> 1. transport network safety; and 2. the location, design, number, orientation and screening of the artificial outdoor light, including its support structure(s); and 3. any positive effects generated from the use of artificial outdoor lighting; and 4. any effects on established uses, including their operation.
Town Centre Zone All Industrial Zones Special Purpose Zone – Macraes Mining	3. Artificial outdoor lighting operating on any site must not exceed a 15% threshold increment limit (based on adaption luminance of 10 cd/m ²) when calculated in the direction of travel within each traffic lane of any State Highway, Arterial, or Principal Road.	Matters of discretion are restricted to: <ol style="list-style-type: none"> 1. transport network safety; and 2. the location, design, number, orientation and screening of the artificial outdoor light, including its support structure(s); and 3. any positive effects generated from the use of artificial outdoor lighting; and 4. any effects on established uses, including their operation.

<p>Local Centre Zone</p> <p>Mixed Use Zone</p>	<p>4. Artificial outdoor lighting operating on any site must not exceed a 15% threshold increment limit (based on adaption luminance of 1 cd/m²) when calculated in the direction of travel within each traffic lane of any State Highway, Arterial, or Principal road.</p>	<p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> 1. transport network safety; and 2. the location, design, number, orientation and screening of the artificial outdoor light, including its support structure(s); and 3. any positive effects generated from the use of artificial outdoor lighting; and 4. any effects on established uses, including their operation.
<p>All zones</p>	<p>Calculations or measurements of the light technical parameters are to be undertaken by persons who are professionally qualified in the discipline of illumination engineering.</p>	

LIGHT-S2		Light spill
Residential Zones Settlement Zone Rural Lifestyle Zone Special Purpose Zone – Lakes	1. Artificial outdoor light spill must not exceed the following maximum luminous intensity limits, as measured from the light source vertically to the windows of habitable rooms of a building used for a sensitive activity: <ul style="list-style-type: none"> a) 7:00am – 10:00pm: 10 lux b) 10:00pm – 7:00am: 2 lux; 2. where a lot is vacant, the maximum luminous intensity limits in 1. above must be measured parallel with the property boundary at the minimum zone setback.	Matters of discretion are restricted to: <ol style="list-style-type: none"> 1. any effects on the well-being and health and safety of people; and 2. the extent to which the character and amenity of the zone is adversely affected; and 3. the extent to which light spill or glare may impact on activities occurring on an adjoining property; and 4. effects on established uses and their operation; and 5. transport network safety.
General Rural Zone Open Space Zone	3. Outdoor artificial light spill must not exceed the following maximum luminous intensity limits, as measured from the light source vertically to the windows of habitable rooms of a building used for a sensitive activity: <ul style="list-style-type: none"> a) 7:00am – 10:00pm: 5 lux b) 10:00pm – 7:00am: 1 lux. 	Matters of discretion are restricted to: <ol style="list-style-type: none"> 1. adverse effects on the well-being and health and safety of people; and 2. any benefits on the well-being and health and safety of people; and 3. the extent to which the character and amenity of the zone is adversely affected; and 4. the extent to which light spill or glare may impact on activities occurring on an adjoining property; and 5. effects on established users and their operation; and 6. transport network safety.
All Commercial and Mixed Use Zones Industrial Zones Sport and Recreational Zone	4. External artificial light spill, when measured vertically at the windows of habitable rooms of a building used for a sensitive activity, must not exceed the following maximum luminous intensity limits: <ul style="list-style-type: none"> a) 7:00am – 10:00pm: 25 lux b) 10:00pm – 7:00am: 5 lux. 	Matters of discretion are restricted to: <ol style="list-style-type: none"> 1. adverse effects on the well-being and health and safety of people; and 2. any benefits on the well-being and health and safety of people; and 3. the extent to which the character and amenity of the zone is adversely affected; and

<p>Special Purpose Zone – Macraes Mining</p>		<p>4. the extent to which light spill or glare may impact on activities occurring on an adjoining property; and</p> <p>5. effects on established uses and their operation; and</p> <p>6. transport network safety.</p>
<p>All Light Sensitive Environments</p>	<p>5. External artificial light spill must not exceed the following maximum luminous intensity limits, as measured from the light source vertically to the windows of habitable rooms of a building on an adjoining site used for a sensitive activity:</p> <p>a) 7:00am – 10:00pm: 2 lux</p> <p>b) 10:00pm – 7:00am: 0.5 lux.</p>	<p>Matters of discretion are restricted to:</p> <p>1. adverse effects on the well-being and health and safety of people; and</p> <p>2. any benefits on the well-being and health and safety of people; and</p> <p>3. the extent to which the character and amenity of the zone is adversely affected; and</p> <p>4. the extent to which light spill or glare may impact on activities occurring on an adjoining property; and</p> <p>5. effects on established users and their operation; and</p> <p>6. transport network safety.</p>

<p>LIGHT-S3 Light Glare</p>		
<p>Residential Zones</p> <p>Settlement Zone</p> <p>Special Purpose Zone: Lakes</p>	<p>1. External artificial lighting on any site adjacent to a building used for a sensitive activity or to a road must be located, directed and positioned to ensure that lighting glare does not exceed the following luminous intensity limits:</p> <p>a) 7:00am – 10:00pm: 10 lux</p> <p>b) 10:00pm – 7:00am: 2 lux.</p>	<p>Matters of discretion are restricted to:</p> <p>1. adverse effects on the well-being and health and safety of people; and</p> <p>2. any benefits on the well-being and health and safety of people; and</p> <p>3. the extent to which the character and amenity of the zone is adversely affected; and</p> <p>4. the extent to which light spill or glare may impact on activities occurring on an adjoining property; and</p> <p>5. effects on established uses and their operation; and</p> <p>6. transport network safety.</p>

<p>General Rural Zone</p> <p>Rural Lifestyle Zones</p> <p>Open Space Zone</p>	<p>2. External artificial lighting on any site adjacent to a building used for a sensitive activity or to a road must be located, directed and positioned to ensure that lighting glare does not exceed the following luminous intensity limits:</p> <p>a) 7:00am – 10:00pm: 5 lux b) 10:00pm – 7:00am: 1 lux.</p>	<p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> 1. adverse effects on the well-being and health and safety of people; and 2. any benefits on the well-being and health and safety of people; and 3. the extent to which the character and amenity of the zone is adversely affected; and 4. the extent to which light spill or glare may impact on activities occurring on an adjoining property; and 5. effects on established uses and their operation; and 6. transport network safety.
<p>All Commercial and Mixed Use Zones</p> <p>All Industrial Zones</p> <p>Sport and Recreational Zone</p> <p>Special Purpose Zone: Macraes Mining</p>	<p>3. External artificial lighting on any site adjacent to a building used for a sensitive activity or to a road must be located, directed and positioned to ensure that lighting glare does not exceed the following luminous intensity limits:</p> <p>a) 7:00am – 10:00pm: 25 lux b) 10:00pm – 7:00am: 5 lux.</p>	<p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> 1. adverse effects on the well-being and health and safety of people; and 2. any benefits on the well-being and health and safety of people; and 3. the extent to which the character and amenity of the zone is adversely affected; and 4. the extent to which light spill or glare may impact on activities occurring on an adjoining property; and 5. effects on established uses and their operation; and 6. transport network safety.
<p>All Light Sensitive Environments</p>	<p>4. External artificial lighting on any site adjacent to a building used for a sensitive activity or to a road must be located, directed and positioned to ensure that lighting glare does not exceed the following luminous intensity limits:</p> <p>a) 7:00am – 10:00pm: 2 lux</p>	<p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> 1. adverse effects on the well-being and health and safety of people; and 2. any benefits on the well-being and health and safety of people; and

	<p>b) 10:00pm – 7:00am: 0.5 lux.</p>	<ol style="list-style-type: none"> 3. the extent to which the character and amenity of the zone is adversely affected; and 4. the extent to which light spill or glare may impact on activities occurring on an adjoining property; and 5. effects on established uses and their operation; and 6. transport network safety.
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LIGHT-S4 Artificial Sky Glow		
<p>All Light Sensitive Environments</p>	<ol style="list-style-type: none"> 1. External artificial lighting must be designed to direct light beams downwards and be fully shielded (See LIGHT-APP1 – Lighting Fixtures); 2. external artificial lighting must have a colour corrected temperature of no greater than 2200k (warm white); 3. all external artificial lighting must, between the hours of 10:00pm and 7:00am, utilise timers and motion sensors or dimmers. 	<p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> 1. the design and location of luminaries, shields, baffles and lighting installation; and 2. the use of overhangs to limit light spill into the night sky; and 3. the existing level of artificial light; and 4. any benefits on the well-being and health and safety of people; and 5. transport network safety; and 6. the effect of the lightspill on the skyline.

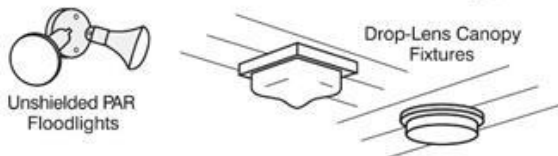
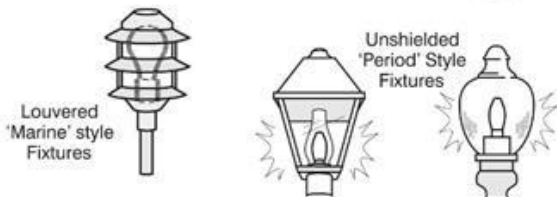
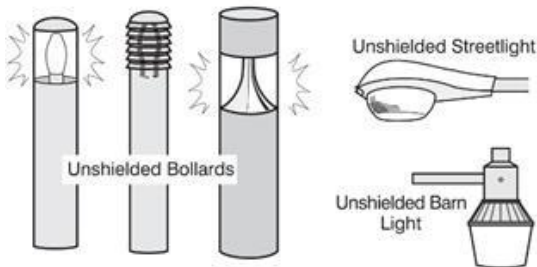
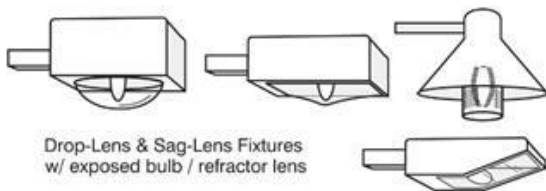
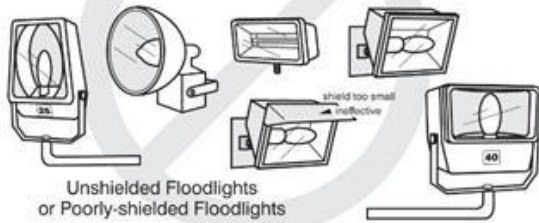
LIGHT-S5 Measurement		
<p>All zones</p>	<ol style="list-style-type: none"> 1. Where a development is located on a site, which adjoins or is directly across a road from a different lux maximum limit in LIGHT-S2 or LIGHT-S3, the lowest of the two lux limits will apply when measured at their common boundary. 2. All measurements must be undertaken in accordance with Standard AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting. 	<p>Matters of discretion are restricted to: Not Applicable</p>

LIGHT-APP1 – Lighting Fixtures

Examples of Acceptable / Unacceptable Lighting Fixtures

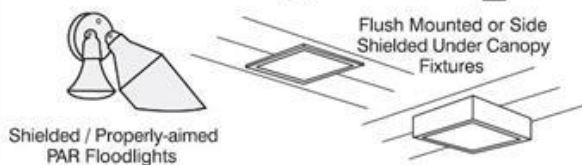
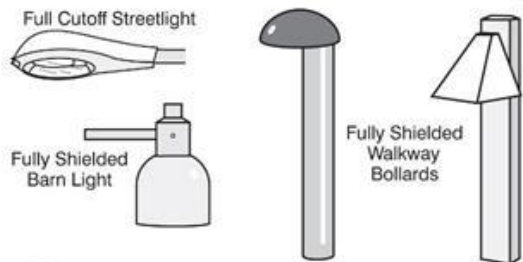
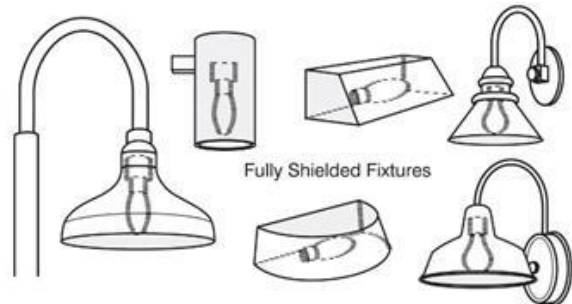
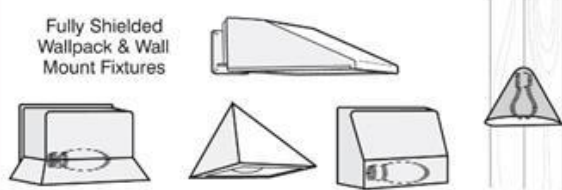
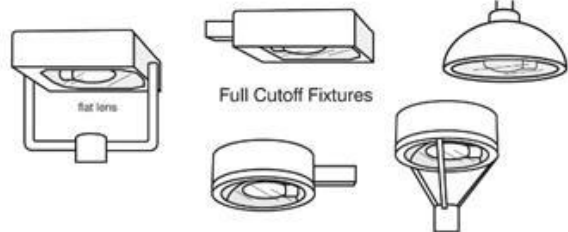
Unacceptable / Discouraged

Fixtures that produce glare and light trespass



Acceptable

Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night



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