



Light Management Plan (Draft)

Ayrburn Screen Hub

Prepared for Waterfall Park Developments Ltd

08 January 2026

This Light Management Plan has been prepared for Waterfall Park Developments Ltd by Paul Wilson (TechIES) from Xyst.

Revision History

Rev.	Date	Author	Notes
1.2	08/01/2026	PW	Draft for issue

ACRONYMS AND ABBREVIATIONS

ADSA	Australian Dark Sky Alliance
AS/NZS1158	Australian/New Zealand Standard 1158.3.1:2020 Lighting for roads and public spaces, Part 3.1: Pedestrian area (Category P) lighting – Performance and design requirements.
AS/NZS1680	Australian/New Zealand Standard 1680.5: 2012 Interior and workplace lighting Part 5: Outdoor workplace lighting
AS/NZS4282	Australian/New Zealand Standard 4282:2023 Control of the obtrusive effects of outdoor lighting.
CCT	Colour correlated temperature
DarkSky.org	International Dark Sky Association
LED	Light Emitting Diode
PDP	Proposed District Plan
QLDC	Queenstown Lakes District Council

CONTENTS

ACRONYMS AND ABBREVIATIONS	3
1. INTRODUCTION	6
1.1 Overview	6
1.2 Project site	6
1.3 Proposed lighting	8
1.4 Purpose of this plan.....	9
2. REGULATORY CONTROLS	9
2.1 District Plan lighting rules	9
2.2 Southern Light	10
2.3 Comparison of applicable rules, standards and specifications.....	11
3. LIGHTING GUIDANCE.....	12
3.1 Principles for Responsible Outdoor Lighting.....	12
3.2 Control of obtrusive light	12
3.3 Other important factors in control of obtrusive light	14
4. LIGHTING REQUIREMENTS	15
4.1 Working areas.....	15
4.2 Circulation Areas.....	16
5. LIGHT MANAGEMENT PLAN	17
5.1 Design	17
5.2 Selection of light fixtures.....	18
5.3 Installation	18
5.4 Control of lights	18
5.5 Operation.....	18



REFERENCES	19
APPENDIX 1: LIGHTING PLAN	20
APPENDIX 2: COMPARISON OF LIMITING VALUES	21

1. INTRODUCTION

1.1 Overview

The Ayrburn Screen Hub is a proposed production facility featuring two studios, accommodation, and supporting facilities and amenities (the 'Project'). The project is the subject of a fast-track application under the Fast-track Approvals Act 2024.

This Light Management Plan has been prepared to guide the design, installation and operation of outdoor lighting within the project site to minimise the effects of artificial light on the night sky, neighbours and surrounding environment.

The LMP has been prepared in accordance with best practice principles, regulatory requirements and current standards including AS/NZS4282 Control of the obtrusive effects of outdoor lighting.

The Ayrburn Screen Hub – Lighting Plan (3 June 2025) was submitted as part of the substantive application (Appendix 7 (Page 31 Ayrburn Design Report)).

This LMP proposes a higher standard of obtrusive light control than required by the existing regulatory requirements and Australian/New Zealand standards. It has a focus on protecting the quality of the night sky and the amenity of the surrounding environment through good design, careful luminaire selection and use of lighting controls and curfews.

1.2 Project site

The site (Figure 1) sits approximately 2km south west of the Arrowtown township and 1km north of Lake Hayes. The land is relatively flat with the exception of Christine's Hill to the north.

To the north of the site, Millbrook is currently expanding with large areas still undeveloped. The land immediately adjoining the north of the site is zoned for commercial and visitor accommodation activities and is around 7Ha in size.

To the north east of the site is Waterfall Park. Within Waterfall Park there are live consents for a large hotel complex (380 rooms) and a retirement complex (196 units).

To the south exists a well-established rural residential character on both sides of Speargrass Flat Road which has recently been extended east and west to capture residential subdivision.

To the west of the site exists a modified rural landscape. There are three trophy lots with distinct shelterbelts and driveways from Speargrass Flat Road that climb Christine's Hill to three residential building platforms on the top terraces. On the boundary that immediately adjoins the site exists a consent for a meeting room / conference venue and house with a floor area of around 2800m².

The east site boundary borders the Ayrburn development. Within Ayrburn there are seven bars and five restaurants, and comprehensively landscaped grounds, including large ponds, vineyards and productive gardens. East of this sit pastoral paddocks owned by The Hills golf course.

The Site and Locality

The site sits approximately 20m south west of the Arrowtown township and 10m north of Lake Hayes. The land is relatively flat with the exception of Christine's Hill to the north.

To the north of the site, Millbrook is currently expanding with large areas still undeveloped totalling around 200ha. The land immediately adjoining the north of the site is zoned for commercial and visitor accommodation activities and is around 20m in size.

To the north east of the site is Waterfall Park. Within Waterfall Park there are five consents for a large hotel complex (380 rooms) and a retirement complex (175 units). The applicant has chosen to build the retirement complex and a smaller hotel at the head of the valley and works are underway.

To the south exists a well established rural residential character on both sides of Speargrass Flat Road which has recently been extended east and west to capture residential subdivision (shown on next page planning map).

To the west of the site exists a modified rural landscape. There are three trophy lots with distinct shelterbelts and driveways from Speargrass Flat Road that climb Christine's Hill to three residential building platforms on the top terraces. On the boundary that immediately adjoins the site exists a consent for a meeting room / conference venue and house with a floor area of around 2000m².

The east site boundary borders the Ayrburn development. Within Ayrburn there are 7 bars and 5 restaurants, a large wedding venue and comprehensively landscaped grounds, including large ponds, vineyards and productive gardens. East of this sit pastoral paddocks owned by The Hills golf course. This land is subject to a district plan appeal for a number of houses and also an application has been accepted through the fast-track legislation.

Wai Whakaata

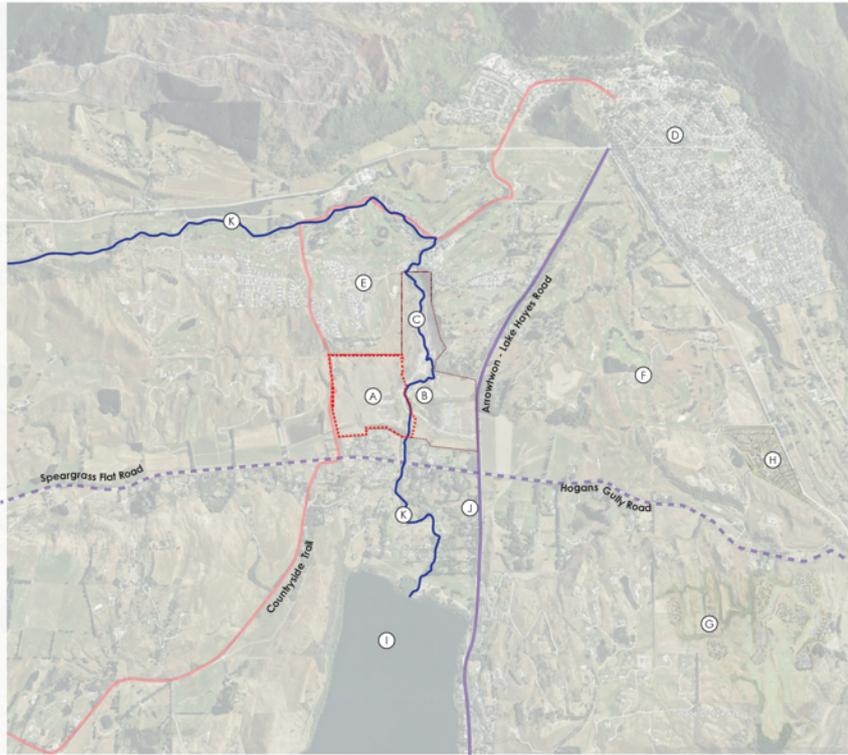
The site sits within the catchment area of Wai Whakaata (Lake Hayes), which is a small lake with one main tributary (Mill Creek).

The water quality in the lake is degraded. Sediment load from Mill Creek is the main contributor to the poor health of the lake. In the summer months when the lake warms and stratifies the nutrient in the sediment is made available to the algae which taint the lake into a eutrophic state. This causes algal blooms, meaning that the lake is sometimes not safe to swim in, turns brownish green and has an odour.

Catchment remediation with a focus of removing sediment load is the main strategy to improve water quality being implemented by the Wai Whakaata Strategy Group. This group is comprised of Iwi (Iwi Iohu), Friends Of Lake Hayes Society Incorporated, Otago Regional Council and Queenstown Lakes District Council.

The applicant's land contains c. 1.2km of Mill Creek. They have undertaken significant catchment remediation since the land was purchased in 2014. They have also taken measures to ensure that development of the site has been done in such a way that it positively contributes to the health of Wai Whakaata.

- A Site 23.5ha
- B Ayrburn Hospitality Precinct
- C Waterfall Park Retirement Complex
- D Arrowtown
- E Millbrook Resort
- F Hills Resort
- G Hogan's Gully Resort Consented plan underway
- H Arrowtown Retirement Village Consented plan underway
- I Lake Hayes
- J Mora Wines Restaurant
- K Mill Creek



Ayrburn Screen Hub - Site and Locality
3 June 2025



Figure 1 Site and locality

This LMP covers all fixed exterior lighting within the Project site as shown in Figure 2.



Figure 2 Site masterplan showing site boundary (red)

1.3 Proposed lighting

The application states that “External lighting will incorporate a mixture of low intensity bollards, downlights and garden lights to assist with wayfinding, in line with the lighting approach approved elsewhere in Ayrburn. All specified fixtures comply with the QLDC Southern Light Strategy and will be installed according to the proposed lighting plan provided in Appendix 7 (Page 31 of the Ayrburn Design Report). It is not expected that the external lighting will result in any breaches to the PDP requirements in terms of spill beyond the property boundary and a condition of consent has been proposed to ensure such result (refer Appendix 6)”¹.

¹ Ayrburn Screen Hub substantive application – Appendix 37 Rules Assessment Ayrburn Screen Hub Planning Report. B&A Urban & Environmental August 2025 p.31

The Transportation Assessment submitted with the substantive application (Appendix 29) states “As the parking areas serve non-residential activities, they are required to be illuminated. There are no reasons why this cannot be achieved.”²

The Ayrburn Screen Hub – Lighting Plan (3 June 2025) is attached as Appendix 1.

1.4 Purpose of this plan

This LMP seeks to address concerns raised by neighbours with respect to potential lighting effects on the rural night-time environment and apply best practice principle to management of lighting in the design, installation and operation of lighting proposed on site.

These concerns go beyond direct illumination of adjoining properties dwellings and extend to protection of the night sky including ‘sky-glow’.

2. REGULATORY CONTROLS

The following existing regulatory controls exist.

2.1 District Plan lighting rules

Rule 24.5.17 of the Queenstown Lakes Proposed District Plan states that:

- a. All fixed exterior lighting shall be directed away from adjacent roads and sites.*
- b. Activities on any site shall not result in more than a 3 lux spill (horizontal and vertical) of light to any other site, measured at any point within the boundary of the other site.*
- c. There shall be no upward light spill.*

Rule 29.5.11 of the Queenstown Lakes Proposed District Plan states:

Lighting of parking areas

² Ayrburn Screen Hub substantive application – Appendix 29 Transportation Assessment -Carriageway p.41

- a. *Excluding parking areas accessory to residential activity, where a parking area provides for 10 or more parking spaces, which are likely to be used during the hours of darkness, the parking and maneuvering areas and associated pedestrian routes shall be adequately lit.*
- b. *Such lighting shall be designed in accordance with the Queenstown Lakes District Council Southern Light Part One - A Lighting Strategy (March 2017) and Queenstown Lakes District Council Southern Light Part Two – Technical Specifications (March 2017).*
- c. *Such lighting shall not result in a greater than 10 lux spill (horizontal or vertical) of light onto any adjoining site within the Business Mixed Use Zone, the Town Centre Zones, and the Local Shopping Centre Zone, measured at any point inside the boundary of any adjoining site.*
- d. *Such lighting shall not result in a greater than 3 lux spill (horizontal or vertical) of light onto any adjoining site that is zoned High Density Residential, Medium Density Residential, Lower Density Suburban Residential, Airport Zone, or the land subject to Designation #2 measured at any point more than 2m inside the boundary of the adjoining site.*

2.2 Southern Light

The QLDC Southern Light – A Lighting Strategy (Part One) and Part Two – Technical Specifications set out the Council’s requirements for public lighting infrastructure and provide guidance and technical considerations for private lighting within the district.

Compliance with the Southern Light Technical specifications is often referenced in resource consent decisions made by QLDC and is referenced in Rule 29.5.11 of the District Plan as discussed above.

The Part Two – Technical Specifications state:

“The following will apply to any consent application for non-domestic private development with respect to exterior lighting:

- *Mandatory use of luminaires with a maximum CCT of 3000k (except Private Sports Fields or by QLDC granted exemption).*
- *Luminaires used for general area lighting, i.e. safe movement and security shall provide no more than 1% upward waste light ratio as installed.*
- *Feature lighting (such as building façade and inground luminaires) will require QLDC approval upon application and if granted will be subject to the operating times defined in Section 26.*
- *Lighting Levels shall be selected based on the Sub-Categories listed in the Tables in Sections 9, 10 and 11 for general area, security, and access lighting.*
- *Lighting Levels for specific exterior work tasks shall be selected based on (and not exceed) the guidance in AS/NZS 1680.5*
- *Lighting Levels for private sports fields shall be considered on application by QLDC with detail of the activity being required to assess suitability.*
- *All lighting must comply with the requirements of AS/NZS 4282.*

- *Lighting Design Results shall be reasonably close to the Light Technical Parameters utilised in the design to avoid excessive lighting. QLDC reserves the right to instruct any applicant to reduce designed lighting results if they are assessed to be excessive by our consents team or nominated technical review panel.*

2.3 Comparison of applicable rules, standards and specifications

Table 1 compares the various technical requirements for lighting required by:

1. The Queenstown Lakes District Plan rules
2. AS/NZS4282
3. Southern Light Strategy

Table 1 Comparison of lighting controls

Requirement	District Plan	AS/NZS4282	Southern Light
Aiming	<i>All fixed exterior lighting shall be directed away from adjacent roads and sites.</i>		
Spill Light	<i>Activities on any site shall not result in more than a 3 lux spill (horizontal and vertical) of light to any other site, measured at any point within the boundary of the other site.</i>	<i>No more than 5 lux vertical during non-curfew and 1 lux vertical during non-curfew measured at the dwelling of an adjoining site, the building set back or 10m within the boundary of the adjoining site.</i>	<i>All lighting must comply with the requirements of AS/NZS 4282.</i>
Maximum Upward Light Ratio	0	0.01 (1%)	0.01 (1%)
Lighting of car parks	Required to subcategory PC3		
Colour Temperature	3000K for car parks only	Preference for 3000K or lower	3000K

As can be seen, there is a general lack of consistency between the various lighting controls, especially where the District Plan requires compliance with the Southern Light strategy and in turn the Southern Light strategy requires compliance with AS/NZS 4282.

This LMP proposes conditions which exceed the performance requirements of the District Plan, AS/NZS 4282, Southern Light and the previously proposed conditions and in particular aim to address concerns over sky-glow.

3. LIGHTING GUIDANCE

3.1 Principles for Responsible Outdoor Lighting

DarkSky and the IES have jointly published five principles for responsible outdoor lighting to prevent and reduce light pollution through the proper application of quality outdoor lighting. These principles should be applied when designing and operating all exterior lighting within the Project site.

Five Lighting Principles for Responsible Outdoor Lighting		DarkSky	IES Illuminating Engineering Society
Responsible outdoor lighting is	1 Useful	Use light only if it is needed All light should have a clear purpose. Consider how the use of light will impact the area, including wildlife and their habitats.	
	2 Targeted	Direct light so it falls only where it is needed Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.	
	3 Low Level	Light should be no brighter than necessary Use the lowest light level required. Be mindful of surface conditions, as some surfaces may reflect more light into the night sky than intended.	
	4 Controlled	Use light only when it is needed Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.	
	5 Warm-colored	Use warmer color lights where possible Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.	

Figure 3 Five Lighting Principles for Responsible Outdoor Lighting (DarkSky.org)

3.2 Control of obtrusive light

AS/NZS 4282 is the current Australian/New Zealand standard for the control of obtrusive light. Applicable technical light limiting factors are based on selecting the relevant environmental zone which considers the ambient light levels present in the environment noting that in very dark rural areas, less light is required and people may be more sensitive to obtrusive light than in brightly lit urban areas.

3.2.1 Environmental Zone

ASNZS4282 (Table 3.1 Environmental zones) sets out environmental zones used for the assessment of conformance of lighting schemes under the Standard.

This LMP has assessed the site and surrounding environment as **Environmental Zone A2 – Low District Brightness**.

Table 3.1 — Environmental zones

Environmental zones	Ambient light conditions	Descriptions/ Examples
A0	Intrinsically dark	UNESCO Starlight Reserve. IDA: Dark Sky Parks, Reserves or Sanctuaries Major optical observatories Other accreditations for dark sky places for example astrotourism, heritage value, astronomical importance, wildlife/ecosystem protection Lighting for safe access may be required
A1	Dark	Relatively uninhabited rural areas (including terrestrial, marine, aquatic and coastal areas) Generally roadways without streetlighting through rural areas
A2	Low district brightness	Sparsely inhabited rural and semi-rural areas Generally roadways without streetlighting through suburban, rural or semi-rural areas other than intersections
A3	Medium district brightness	Suburban areas in towns and cities Generally roadways with streetlighting through suburban, rural or semi-rural areas
A4	High district brightness	Town and city centres and other commercial areas Residential areas abutting commercial areas Industrial and Port areas Transport Interchanges
TV	High district brightness	Vicinity of major sport and event stadiums during TV broadcasts
NOTE Zones A0 and A1 would normally have a minimum area of 50 ha.(0.5 km ²). There may be smaller environmentally sensitive areas.		

Figure 4 ASNZS4282 Table 3.1 Environmental Zones

While the site and surrounding environment is assessed as Environmental Zone A2, this LMP recommends applying the limiting values of Environmental Zone A1 as these ensure zero upward light up spill which is the standard anticipated by the PDP (Rule 24.5.17 (c)).

A comparison of the limits proposed by this LMP and current regulatory requirements is included in Appendix 2.

3.2.2 Applicable limiting values

The applicable limiting values set by ASNZS4282 for Environmental Zones A1 and A2 are as follows:

Table 2 Summary of limiting values for Zones A1 and A2

Technical parameter	Limiting Value Zone A1 (Dark)	Limiting Value Zone A2 (Low District Brightness)
Maximum vertical illuminance (non-curfew)	2 (E _v) lux	5 (E _v) lux
Maximum vertical illuminance (curfew)	0.1 (E _v) lux	1 (E _v) lux
Maximum Threshold increment (TI)	20%	20%
Default Adaptation Level (L _{ad}) cd/m ²	0.1	0.2
Maximum Upward Light Ratio (ULR _s or ULR _t)	0.00	0.01
Maximum luminous intensities per luminaire (Non-curfew Level 1)	2,500 cd	7,500 cd
Maximum luminous intensities per luminaire (Curfew)	500 cd	1,000 cd
Maximum average luminance of surfaces (signs, façade lighting and objects)	50 cd/m ²	150 cd/m ²

The values for Environmental Zone A1 (recommended) and A2 (assessed) have been included for comparison.

3.3 Other important factors in control of obtrusive light

Appendix A of ASNZS4282 sets out a variety of measures that can help mitigate the effects of obtrusive light. Measures relevant to this LMP include the following:

1. A competent and experienced lighting designer should be engaged in the detailed design and commissioning of the lighting scheme.
2. Employ lighting controls such as time or motion sensors to limit lighting to only when it is needed.
3. Select fixtures of appropriate design and output to minimise light pollution.
4. Use the minimum amount of light required to meet standards and operational needs. Do not over-light.
5. Consider the reflective properties of surfaces and materials being lit. Select path and road surfaces with low reflectivity.
6. Use light sources with a CCT of 3000K or less.

7. Carefully select mounting heights of light fixtures. Low mounting heights can result in higher mounting angles, with higher intensities and increased spill light. Low mounting heights will also result in more fixtures being needed to light a given area with the required uniformity.
8. Where possible use building eaves, vegetation and other structures to shield lighting.

These measures have been incorporated into this LMP.

4. LIGHTING REQUIREMENTS

As described in the Application, the lighting requirements are minimal and in keeping with the low intensity lighting approach used elsewhere in Ayrburn.

There are requirements for lighting of the car park areas as prescribed by the District Plan and for working and security around the studio/workshops as well as for general circulation and wayfinding.

4.1 Working areas

AS/NZS 1680 describes the requirements for lighting of outdoor workplaces. The limiting values for lighting are shown for the relevant workspaces are shown in Table 3.

Table 3 AS/NZS 1680 Limiting values for outdoor workspaces

Description	Average illuminance (E_{av}) Lux	Minimum Illuminance (E_{min}) Lux	Uniformity of illuminance Max	CIE Glare Rating (maximum) GR_{max}
Loading and unloading (manual and forklift)	40	5	5	45
General Storage – pedestrian access with through traffic	20	2.5	7	50
General Storage – Pedestrian access	10	1	7	50

It is anticipated that the areas surrounding the filming studios and workshop/workroom spaces and other operational areas will be lit with building mounted and pole mounted bulkheads and or floodlights with time and motion controls as appropriate for security, access and health and safety reasons.

4.2 Circulation Areas

AS/NZS1158 describes the requirements for lighting of roads, carparks, paths and circulation places where the owner or local authority requires design and installation of a lighting scheme in compliance with the Standard. The Standard does not cover lighting intended specifically as security lighting for building exteriors or 'wayfinding' lighting where lights are intended to provide a guide rather than to provide a particular level of illumination.³

Applicable technical requirements are show in Table 4 below:

Table 4 AS/NZS 1158 Limiting values for parking, roads and pathways/cycleways

Type of Area	Subcategory	Average horizontal illuminance E_h Lux	Minimum horizontal illuminance E_{ph} Lux	Illuminance Uniformity U_{E2}	Minimum vertical illuminance E_v Lux
Parking spaces, aisles and circulation roadways	PC3	3.5	0.7	8	n/a
Designated parking spaces intended for people with disabilities	PCD	n/a		n/a	n/a
Local Roads	PR6	0.7	0.07	10	n/a
Pathways and cycle paths	PP5	0.85	0.14	5	0.02

It is anticipated that circulation spaces will be lit with downlighting on timber bollards to provide wayfinding lighting only as there is no requirement to meet ASNZS1158 for these spaces. Car parks will be lit with pole mounted area lights with motion controlled dimming to ASNZS1158 subcategory PC3/PCD.

³ ASNZS 1158.3.1 2020 p.6

5. LIGHT MANAGEMENT PLAN

The following sets out the requirements for the design, selection, installation and operation of lighting within the Project site.

5.1 Design

1. A lighting design complying with the requirements of this LMP shall be completed by a qualified and competent lighting designer and adhere to the principles for responsible outdoor lighting
2. The design shall meet the requirements of AS/NZS4282 for environmental zone A1 (Dark), the limiting values for which are included in Table 5 below

Table 5 AS/NZS4282 Limiting Values Environmental Zone A1

Technical parameter	Limiting Value Zone A1 (Dark)
Maximum vertical illuminance (non-curfew)	2 (E _v) lux
Maximum vertical illuminance (curfew)	0.1 (E _v) lux
Maximum Threshold increment (TI)	20%
Default Adaptation Level (L _{ad}) cd/m ²	0.1
Maximum Upward Light Ratio (ULR _s or ULR _i)	0.00
Maximum luminous intensities per luminaire (Non-curfew)	2,500 cd
Maximum luminous intensities per luminaire (Curfew)	500 cd
Maximum average luminance of surfaces (signs, façade lighting and objects)	50 cd/m ²

3. All permanent light fixtures with an output greater than 500 lumens shall meet the following minimum criteria:
 - a. Be independently certified as Dark Sky approved fixtures by DarkSky or ADSA; or
 - b. Meet the following minimum specifications
 - i. Upward Waste Light (UWL): 0%
 - ii. Correlated Colour Temperature (CCT): ≤3000K (2700K preferred)
 - iii. On/Off control required
 - iv. Front & Back Very High Light (FVH & BVH): ≤2.0% (TM-15-11 standard)
 - v. Maximum luminous intensity of 7000 cd during non-curfew periods and 1000 cd during curfew periods

4. The design shall be submitted for the approval of the regulatory authority prior to installation.

5.2 Selection of light fixtures

5.3 Installation

1. All lights shall be mounted such that the light emitting surface is horizontal, downward-facing, and with no forward tilt.
2. All fixed exterior lighting shall be directed away from adjacent roads and sites.
3. All bollard mounted lighting shall be a maximum height above ground level of 1.2m
4. All building mounted lighting shall be a maximum height above ground level of 6m
5. All lighting shall be inspected on completion of installation and a certificate of compliance with this LMP issued prior to operation.

5.4 Control of lights

1. All lights exceeding 500 lumen output shall have one or more of the following control methods:
 - a. Motion detection – capable of being activated on detection of human presence and being deactivated 5 minutes after activation.
 - b. Time control – capable of being switched on and off according to time of night/day
 - c. Dimming – capable of being dimmed according to human presence and/or time of night/day

5.5 Operation

1. A “curfew” period will operate from 11:00PM to 6:00AM, at which time all lighting shall meet the requirements of AS/NZS4282 Environmental Zone A1 for spill light and intensity.
2. Lighting shall be inspected annually to ensure lighting is correctly aimed and operated in accordance with the approved design and this LMP.

REFERENCES

AS/NZS 1158.3.1:2020 Lighting for roads and public spaces, Part 3.1: Pedestrian area (Category P) lighting – Performance and design requirements. Standards New Zealand 2020

AS/NZS 1680.5:2012 Interior and workplace lighting – Part 5 Outdoor workplace lighting. Standards New Zealand 2012

AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting. Standards New Zealand 2023

Ayrburn Screen Hub substantive application – Appendix 7 Ayrburn Design Report

Ayrburn Screen Hub substantive application – Appendix 37 Rules Assessment Ayrburn Screen Hub Planning Report. B&A Urban & Environmental August 2025

Ayrburn Screen Hub substantive application – Appendix 22 Landscape Assessment Report Rough Milne Mitchell Landscape Architects

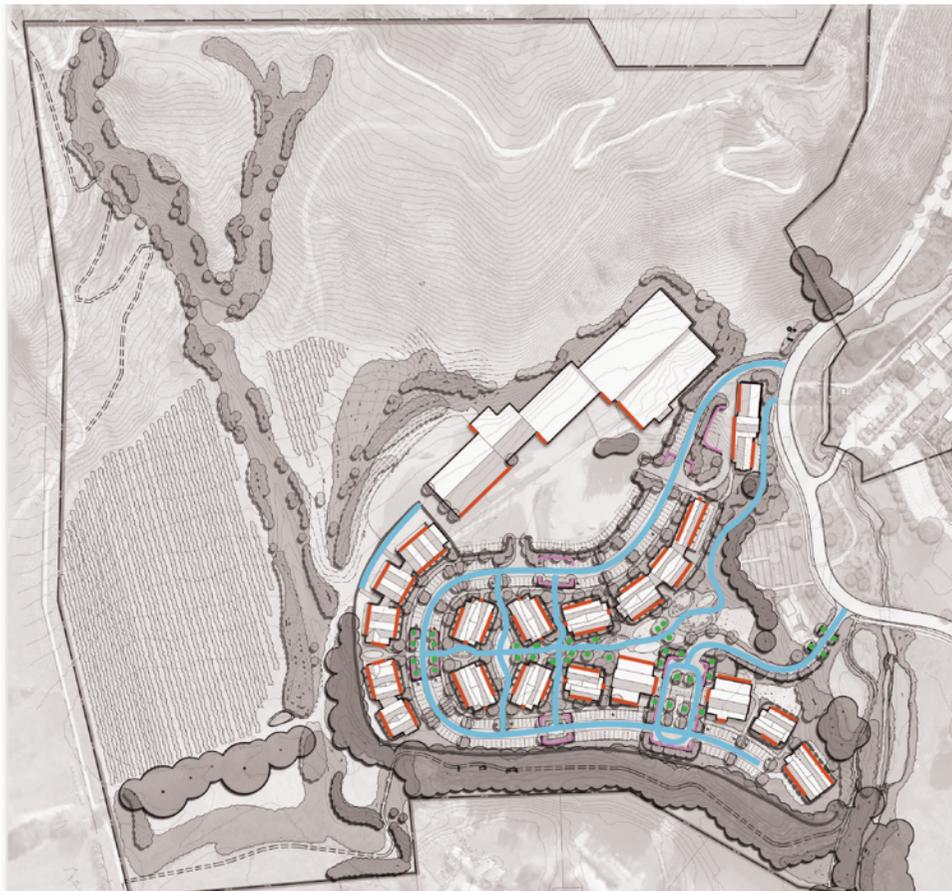
Ayrburn Screen Hub substantive application – Appendix 29 Transportation Assessment -Carriageway

Southern Light Part One – A Lighting Strategy. Queenstown Lakes District Council March 2017

Southern Light Part Two – Technical Specifications. Queenstown Lakes District Council 12th May 2025

APPENDIX 1: LIGHTING PLAN

Note: "feature uplighting" has been modified by proposed condition to exclude any uplighting



Overview - Lighting

Different styles of lighting will be used to illuminate circulation routes, signs and landscape features to aid navigation of the development at night. Different fittings and fixtures will be chosen for safety and general amenity.

Bollard lighting will be placed for wayfinding at regular intervals along the edges of roads and paths. In areas which are more likely to be frequented after dark such as around the Annals and Amenities building lighting will be more frequent to reflect the higher use of these areas and increase the amenity for residents at night.

Final placement of individual fittings along paths and roads will be subject to an appropriately qualified lighting designers recommendations and assessed at the time of engineering approval. All lighting will have consideration for viewing the night's sky in accordance with the Southern Light Strategy and AS/NZS 1156.

Note: All lighting is to be low consumption LED with a wavelength between 2700k-3500K.



Downlighting on timber bollards
To have a hidden light source and be located less than 1.0m above GL. Fitting to be we-el 5VL200 6 Watt 3000K (or similar)



Wall or post mounted spot lighting
To be directly focused towards features being illuminated, such as terraces in a way to minimise light spill. Fitting to be Hunza Wall spot 6 Watts 3000K (or similar)



Downlighting (Wall)
To have a hidden light source and be located less than 1.0m above GL. Fitting to be Hunza Mosaic Light 2 Watt 3000K (or similar)



Feature uplighting
To be directly focused towards features being illuminated, such as trees, buildings signs and stone walls in a way to minimise light spill. Fitting to be Hunza Lawn Light 6 Watts 3000K (or similar)

APPENDIX 2: COMPARISON OF LIMITING VALUES

Requirement	Proposed District Plan	AS/NZS4282 (Zone A2)	Southern Light	LMP
Aiming	<i>All fixed exterior lighting shall be directed away from adjacent roads and sites.</i>	No requirement	No requirement	All fixed exterior lighting shall be directed away from adjacent roads and sites.
Spill Light	<i>Activities on any site shall not result in more than a 3 lux spill (horizontal and vertical) of light to any other site, measured at any point within the boundary of the other site.</i>	<i>No more than 5 lux vertical during non-curfew and 1 lux vertical during non-curfew measured at the dwelling of an adjoining site, the building set back or 10m within the boundary of the adjoining site.</i>	<i>All lighting must comply with the requirements of AS/NZS 4282.</i>	No more than 2 lux vertical during non-curfew and 0.1 lux vertical during non-curfew measured at the dwelling of an adjoining site, the building set back or 10m within the boundary of the adjoining site.
Maximum Upward Light Ratio	0.00	0.01 (1%)	0.01 (1%)	0.00
Lighting of car parks	Required to subcategory PC3	n/a	Required to subcategory PC3	Required to subcategory PC3
Colour Temperature	3000K for car parks only	Preference for 3000K or lower	3000K	3000K (2700K Preference)
Curfew	None	Recommended	None	Additional limits apply 11PM to 6AM
Time/Proximity Controls	None	Recommended	None	Required where output exceeds 500 lumen
Monitoring	None	Recommended	None	Certificate of conformance and annual monitoring