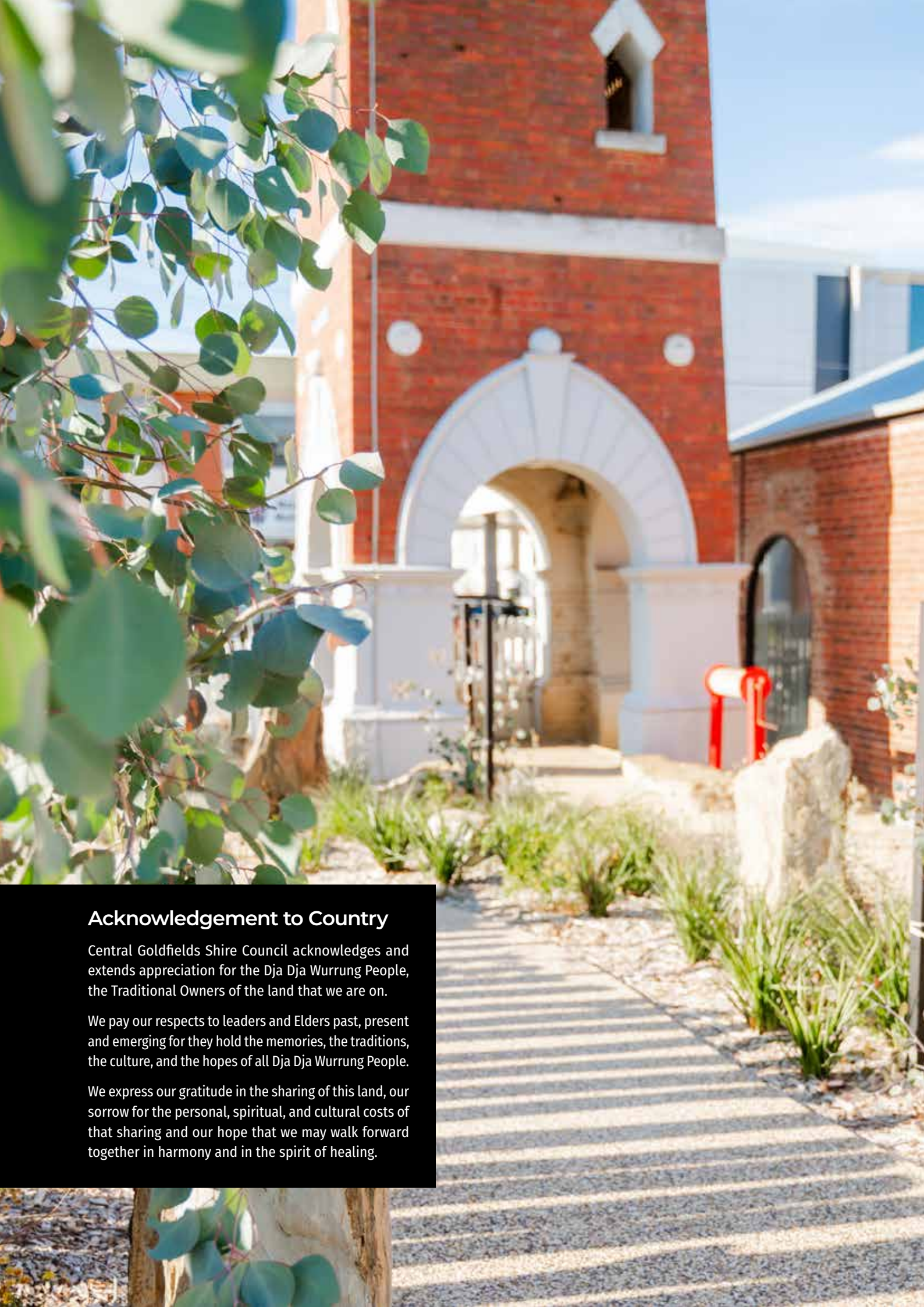
CENTRAL GOLDFIELDS SHIRE COUNCIL

DJA DJA WURRUNG COUNTRY

Public Lighting Strategy



Acknowledgement to Country

Central Goldfields Shire Council acknowledges and extends appreciation for the Dja Dja Wurrung People, the Traditional Owners of the land that we are on.

We pay our respects to leaders and Elders past, present and emerging for they hold the memories, the traditions, the culture, and the hopes of all Dja Dja Wurrung People.

We express our gratitude in the sharing of this land, our sorrow for the personal, spiritual, and cultural costs of that sharing and our hope that we may walk forward together in harmony and in the spirit of healing.

Contents

Executive Summary

This strategy is aimed at ensuring that the essential community service in the provision of energy efficient Public Lighting within Central Goldfields Shire Council (CGSC) is appropriate, affordable, reduces the current footprint size of greenhouse gas emissions, and provides pedestrians and motorists with a safe and comfortable visual environment at night.

The strategy contains several objectives about lighting levels for streets, suggestions about improved lamp technology, design principles for public lighting, and the appropriate requirements that should be taken into consideration for feature and decorative lighting. The strategy also sets goals for bicycle path lighting within the Shire.

Since the previous Public Lighting Strategy was published, many of the 80-watt colour – corrected Mercury Vapour lights have been converted LED Solid State lights, with only 5 Mercury Vapour lights left.

By continuing to apply the strategy CGSC will see more lamps that are twice as energy efficient, considerably reducing Councils carbon footprint, enhancing public safety and the public's sense of security.

- **Directorate:** Infrastructure, Assets and Planning
- **Responsible Manager:** General Manager Infrastructure Assets and Planning
- **Review Due:** 5 years from Month of Adoption
- **Adoption:** Council
- **Date Adopted:** 22nd July 2026

Introduction

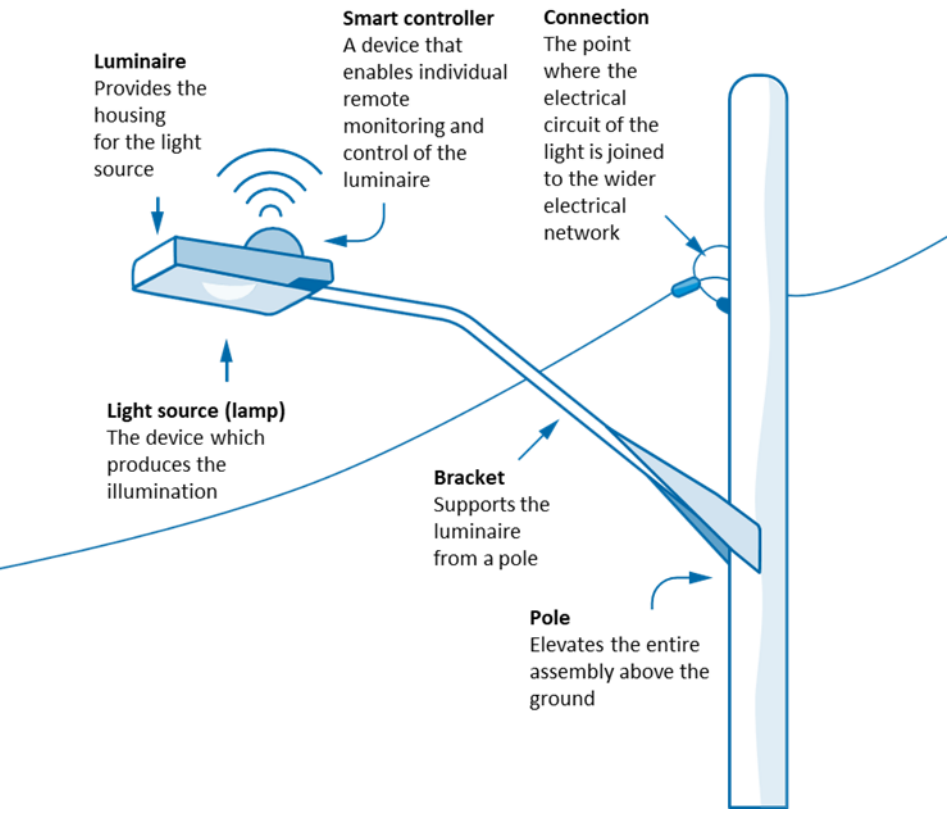
Central Goldfields Shire Council (CGSC) is responsible for the costs associated with the running, maintenance and replacement of approximately 1324 streetlights.

Powercor is responsible for undertaking the maintenance and replacement of these lights, and in managing maintenance requests. The Council is responsible for managing requests for extra lights or improvements to street lighting within the local road network under its control, as well as meeting the costs of these improvements. As for lighting along the arterial road network, Council has agreements in place with the Department of Transport and Planning to share the costs of maintenance.

BELOW:

A typical set-up of a public streetlight is made up of a components as illustrated.

Source: Public Lighting PAL ATT 12.01 – Public 2026–31 Regulatory Proposal, Australian Energy Regulator (2025)



1. Purpose

This strategy is about addressing the issues of public street and public places lighting that CGSC has an interest in and invests public funds into as part of the Council's commitment to achieve sustainable solutions for the safe and acceptable lighting of urban streets, public places under its care and control, and other identified locations.

2. Objectives

The specific objectives of the CGSC Street and Public areas lighting strategy are to:

- Propose appropriate minimal lighting levels and lighting objectives for the township of Maryborough as well as the townships of Carisbrook, Talbot, Dunolly, Bealiba, Majorca, and other settlements where lighting needs are identified.
- Identify a manageable portfolio of technologies and installation approaches that will achieve lighting and lighting level objectives whilst minimising costs and impacts upon the environment.
- Recommend light improvement priorities.

3. Application and Scope

This Strategy applies to all Council staff.

4. Public Lighting Background

Currently, there are 1324 streetlights with the majority being LED Solid State lamps. Others are 150-watt high pressure sodium lamps, 80-watt mercury vapour, 42W Fluorescent and 14W Fluorescent lamps. Powercor will slowly phase out the remaining Fluorescent, Mercury Vapour and High-pressure sodium lamps to LED once the lamp reaches the end of their serviceable life. In the long run, this will help Council meet its Climate Action Plan of converting Major Roads streetlights to LED.

In existing township areas, residents can request the installation of a streetlight on local roads from CGSC, or in public reserves or other open spaces with approvals based on budget limitations. A request is then sent to Powercor to proceed with the installation. Alternatively, residents may wish to fund the installation themselves with Council taking on the maintenance, provided the location of the streetlight is consistent with Council's strategy and approval is granted.

For new subdivisions and developments, Council can determine the location of new streetlights through the planning permit process, in accordance with applicable standards. A defect liability period also applies from the date of installation during which the developer is responsible for costs associated with faults. Once the defect liability period is over or once Council has administered the installation of a streetlight, they are principally owned, operated, and maintained by Powercor, though the Council is required to meet the costs of most of the lighting, inclusive of replacement of luminaires and fittings, through its rates income. In the event of faulty lights, community members can report it through Powercor's online portal.

In 2011 CGSC paid $110,000 to meet public street lighting running and maintenance charges and in the 2025/26 financial year, based on monthly invoices thus far, CGSC is set to pay $55,000 in public street lighting costs, reflecting the benefit of changing over the bulk of lighting to the low-cost LED Solid State lamps.

The average cost charged by Powercor to supply and install a new streetlight is about $5,000 with further costs if design is involved and much more if there is no power pole to support the light.

The annual charges to meet the costs of operation, maintenance and repair of public lighting are as follows:

Table 1: Annual Charges – Public Lighting 2025/26 (source: Citipower/Powercor Pricing Proposal 2025/2026)

Public Lighting Type	Annual Charge $ (excluding GST)
Category P LED High output	37.06
Category P LED Standard output	37.06
Category V LED Ll Standard Output	72.81
Category V LED L2 Medium output	80.10
Compact Fluorescent 42 watt	67.48
Fluorescent T5 2x14 watt	69.64
Sodium high pressure 150 watt	187.63
Sodium high pressure 250 watt	189.44
Mercury vapour 80 watt	139.48

ABOVE:
LED lamp developed for public lighting purposes – Sylvania

4. Public Lighting Background

4.1 Current Lighting Assets

Over the last decade the Council met the costs of the following luminaires within its municipal district:

Table 2: Central Goldfields Shire's Lighting Assets (2026)

Luminaire Type	Assets Number (2011)	Assets Number (2026)
50W Mercury Vapour	56	0
80W Mercury Vapour	869	5
125W Mercury Vapour	7	0
250W Mercury Vapour	0	0
400W Mercury Vapour	4	0
150W High Pressure Sodium	186	202
250W High Pressure Sodium	47	37
400W High Pressure Sodium	1	0
20W Fluorescent	1	0
2 x 24W Fluorescent	1	0
2 x 14W Fluorescent	7	3
42W Fluorescent	0	13
Category P LED High output	0	47
Category P LED Standard output	0	991
Category V LED Ll Standard Output	0	22
Category V LED L2 Medium output	0	4
TOTAL	**1179**	**1324**

5. Environmental Considerations

5.1 Sustainability

There are environmental costs associated with the provision of lighting in public places. These include the increased consumption of resources, the generation of more greenhouse gases, and light pollution. Since 2011 these environmental costs have been minimised as part of this strategy by using more energy-efficient lamps (LED's), by reviewing areas that may not need lighting, or may only be lit for periods of time, and using solar powered luminaires at some of the Council-controlled public places. It is important that a balance be achieved between the general principles of minimising the impact of lighting upon the environment and the demonstrated benefits that good lighting has upon combating anti-social behaviour, vandalism, and a sense of security and safety by the community. Other considerations are further discussed in Section 7 of this strategy (refer Section 7).

6. Other Considerations

6.1 Access and Equity

In support of equity, Council has allowed flexibility in the application of lighting types and requirements at specific locations and/or for specific circumstances. The strategy has had to compromise; for example, in the street lighting goals set for the township of Maryborough compared to the smaller towns over the short to medium term (refer to Section 7.2.1 for further discussion).

Some examples of areas where the Council might be able to deliver improvements to specific public lighting outcomes are:

- Public areas with identified lighting needs.
- Areas that can be pilots and demonstrations for improved public lighting.
- Specific projects in urban areas such as well-used bicycle paths, specific public places, and so on.
- Additional lighting (possibly temporary) to deal with localised problem areas; and
- Private developments.

In the past, there have been equity issues about the level of maintenance of the luminaire assets by the power companies. For example, where a streetlamp is "left on" during the day and causing criticism of the local Council for "not turning the light off", is a demonstration that the faulty luminaire may be an indication that the power company's maintenance program is not being properly managed. Or the use of 'decorative' lighting being used in an area that requires more significant illumination.

6.2 Health and Safety

ABOVE:
An example of inappropriate use of decorative lighting that provides inadequate lighting

Council will aim to incorporate the design principles listed below for the streets and public places under its control:

i. Aim to place lighting at public facilities and at public transport stops that are likely to be used at night.

ii. Public areas not intended to be used at night should not be lit or closed off.

iii. Strive to meet the Australian Standard 1158.1 for major road, and AS 1158.3 for minor road, street lighting.

iv. Light sources should not be placed at eye level because they prevent pedestrians and cyclists from seeing beyond the light source.

v. Avoid over-lighting of a public area as this creates the impression that adjacent areas are under-lit.

vi. Parks and gardens attracting less use after dark can justify the use of lower performing light sources provided that good rendition of greens and browns is achieved.

vii. Lighting should be at a height that prevents vandalism. Where lighting is used at a lower level (such as up lighting of features or up lighting along well-used pedestrian routes) vandal resistant fittings shall be required.

7. Standards and Guidelines

There are several publications and standards that are used particularly in relation to road lighting. Road lighting is an integral part of traffic engineering practice, and must be carefully applied, so that the driving task is able to be performed more successfully by the motorist. Good road lighting also provides benefits to other road users and the community in general. Benefits include reduced road crash risk, improved traffic operation, improved property security, lower crime rates, and enhancement of commercial, business and social/recreation environments.

Seeing an object with the human eye is achieved by discriminating contrast (that is, the difference in brightness between the object and its background) and colour and size. Night-time visibility in road/traffic situations, very largely, depends on contrast. Static and dynamic visual acuity of the observer's eye also plays an important role in visual performance at night and where there are low levels of light.

Light levels generally experienced in daylight will be around a thousand times higher, and even on dull days a hundred times higher than lighting levels specified for arterial road traffic route lighting levels, which in turn are a lot higher than for local street lighting specified in the standards.

Glare also significantly influences the visual performance of a driver, particularly under low levels of lighting.

The design of lighting installations along a length of street or road is based on arranging the luminaires in such a way as to provide a uniformly bright pavement against which objects may be seen in silhouette. There are all sorts of factors which complicate the design of lighting of streets, inclusive of crests and curves where objects (e.g. pedestrians) may be seen against different backgrounds of sky, or buildings, or trees; intersections where angles of viewing may be across islands, etc.; headlights from vehicles which tend to reduce the silhouette; colour and texture of objects which may match backgrounds; and wet pavements which greatly degrade pavement luminance uniformity by intense specular reflections.

Pedestrians at night traversing local streets are particularly vulnerable to not being seen by a motorist. Pedestrians do not always observe the road rules and often cross a road where they can neither see nor be seen. The more frequent the occurrence of pedestrians crossing roads, the better the road lighting should be.

Colour rendition is also an important factor for motorists to discern pedestrians at night. Both LED and high-pressure sodium lamps are suitable for street lighting. Low pressure sodium lamps are not favoured principally because colour rendition cannot be achieved.

7.1 Standards Used

The following Australian/New Zealand Standards cover various aspects of road lighting practice:

> **AS/NZS 1158:**
> Lighting for roads and public spaces
>
> **AS1798:**
> Preferred dimensions for lighting columns and bracket arms
>
> **AS4282:**
> Control of the obtrusive effects of outdoor lighting
>
> **AS1158.6:**
> Road lighting luminaires with integral control gear
>
> **AS4799:**
> Installation of underground utilities services and pipelines within railway boundaries

The Australian Standard AS/NZ1158 leaves it up to the local authority to nominate which sub-category of lighting should be used in any area, based upon specific local circumstances such as night-time traffic and pedestrian flows, levels of crime and other patterns of use. The category that is recommended in the Standard for local roads is called "Category P lighting" in the standard which is further sub categorised into:

- PR category – for roads in local areas.
- PP category – for pathways.
- PA category – for public activity areas (excluding car park areas).
- PE category – for connecting elements.
- PC category – for outdoor car parks.

While AS 1158 does not prescribe specific spacing for public street lighting, an indicative approach to achieve Category PR5 lighting in urban street settings is the installation of standard Category P lighting at intervals of approximately 40–50 metres.

For traffic routes, where the visual requirements of motorists are dominant, "Category V" lighting is typically applied, with spacing generally in the range of 50–60 metres and is generally associated with Arterial Roads.

7.2 Goals for Local Roads Street Lighting within Central Goldfields Shire

There are a few ways that the Council can, within the significant funding constraints that a rural council with a small population and a large portfolio of local road infrastructure must handle, achieve a satisfactory public lighting outcome and that reduces risk to its community. These include:

- Balancing the risks and costs associated with the location of local street lighting along local urban roads.
- Researching and implementing more energy-efficient lamps.
- Reducing carbon use; and
- Applying timing switches upon public and feature lighting.

7.2.1 Urban Local Street Lighting Locational Goals

Given the need to balance costs associated with street lighting (and the lack of control that the Shire has in being able to keep costs at or below inflation) with the benefits of improved safety and the dis-benefits of lighting to the environment, the following goals are outlined that may be achieved in the medium term (10 years).

The medium-term goals have considered the population concentrations in the townships of Maryborough, Carisbrook and Talbot with the smaller populations of the other towns as well as with each other. Maryborough's population of 8,160 and the associated number of pedestrians in the town is the prime factor driving the medium-term goal of one lamp every second pole for the lesser roads compared to the much smaller townships such as Carisbrook, Dunolly and Talbot. Longer term it is advocated to review the goal suggested for the smaller townships public streetlamp locations to align with the Maryborough medium term goal.

Maryborough:
For Urban Collector, Access, and Link roads a minimum of one (1) PR5 Lighting (or equivalent) lamp on every second pole (not at an intersection) as well as on at least one pole at an intersection.

Other Towns: *e.g. Carisbrook, Dunolly, Talbot*
For Urban Collector, Access, and Link roads a minimum of one (1) PR5 Lighting (or equivalent) lamp on every third pole from an intersection with one pole on every intersection as indicated on Diagram 2.

Diagram 1:

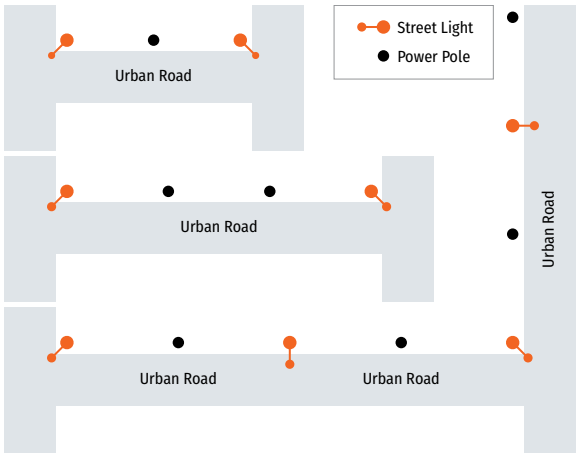
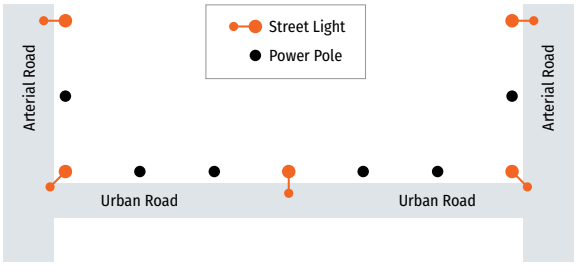


Diagram 2:



All Arterial Roads:
Specific lighting designs in accordance with Department of Transport and Planning's policies and standards.

7. Standards and Guidelines

Table 1: Current lighting compared with targeted lighting levels and associated costs.

Township	Current	Current maintenance cost (excl. GST)	Target based on this Strategy's goal	Addition lighting required to meet this Strategy's goal	Cost to meet target (excl. GST)	Added annual maintenance cost bill (excl. GST)
Maryborough	994		1024	30	$150,000	$1,112
Carisbrook	81		109	28	$140,000	$1,038
Talbot	43		49	6	$30,000	$222
Dunolly	71		95	24	$120,000	$889
Bealiba	24		22	*Target met*	*Target met*	N/A
Total	**1213**	**$52,937**	**1299**	**86**	**$440,000**	**$3,261**

Table 2: Cost to add lighting to power poles currently without lighting.

Township	Number of all power poles	Current number of power poles with lighting	Number of power poles without lighting	Cost to install lighting on remaining power poles (excl. GST)	Added annual maintenance cost bill (excl. GST)
Maryborough	1879	994	885	$4,425,000	$32,798
Carisbrook	328	81	247	$1,235,000	$9,154
Talbot	124	43	81	$405000	$3,002
Dunolly	286	71	215	$1,075,000	$7,968
Bealiba	66	24	42	$210,000	$1,557
Total	**2683**	**1213**	**1470**	**$7,350,000**	**$54,478**

Table 3: Shows total number of lights for best practice streetlighting in urban areas.

Township	Total streetlights required for best practice in urban areas (every 40m)
Maryborough	2371
Carisbrook	504
Talbot	291
Dunolly	559
Bealiba	143
Total	**3868**

These tables demonstrate that the current locational lighting goal for Bealiba has been met, whereas the other localities are close to meeting their targets as well. Priority will be given to Dunolly and Carisbrook as their percentage of lighting met for this strategy's locational lighting goal is significantly lower than Maryborough and Talbot.

7.2.2 Town Public Lighting Goals – Improvement Strategies

The preferred strategy is to upgrade existing lighting particularly within the residential areas of Maryborough, Carisbrook, Dunolly, Bealiba and Talbot by:

- Achieving the goals aforementioned.
- Ensuring that all new luminaires in local roads that are subject to Category P lighting standard be fitted with appropriate type lamps to ultimately achieve at minimum PR5 standard in the long term.
- Ensuring that new residential and commercial areas achieve meet the Australian Standards for lighting and have standardised Powercor lighting.
- Designing the tree trimming program to also facilitate the distribution of light and establish a list of locations where extended arms or catenary lighting should be considered.
- Collecting information on dark areas in open spaces and determining the necessity of lighting there.
- Consulting with communities in rural living/low density residential areas to assist in ultimately establishing a lighting policy commensurate with these areas and road safety requirements; and
- Consulting with hamlet towns and villages communities about appropriate lighting suitable for their needs as well as road safety requirements.

7.2.3 Goals for Bicycle Paths Lighting within Central Goldfields Shire

The need to light bicycle paths does depend upon the use of such a path, particularly at night.

Categories of bicycle paths where lighting should be considered are:

- Bicycle paths that are associated with an area of night-time activity, typically in town centres where a high standard of lighting is desirable; and
- Bicycle paths that are used predominantly for commuting by workers and/or students.

Categories of bicycle paths where lighting is not required are:

- Bicycle paths that are used for recreation, as they are predominantly used during daylight hours and the cost of lighting is not justified.

Where not justified, however, consideration may be given to lighting key areas such as:

- Intersections with other paths and with roads.
- At sharp curves and/or steep grades.
- Ramps to structures and at underpasses.
- At locations where low clearances exist; and
- At stairs, or where bicycle parking facilities exist.

ABOVE:
Shared pedestrian/bicycle path from Maryborough to Carisbrook

8. Decorative Lighting

Decorative lighting is not widely supported by electricity distribution companies, with ownership and maintenance responsibilities typically transferred to Council. This includes responsibility for the replacement of both lighting poles and luminaires (lighting fixture). Decorative lighting also attracts higher ongoing operating and maintenance costs when compared with standardised public lighting.

To manage long term financial risk and ensure sustainable asset management, all new developments will be required to install standardised public lighting. This approach ensures that future replacement and maintenance responsibilities remain with the relevant power companies and supports Council's long term financial and asset management objectives.

Existing decorative or non standard lighting will generally be replaced with standardised lighting at the end of its service life or following accidental damage, unless a strategic exemption applies.

Exceptions for decorative lighting will be limited and only supported where there is a clear strategic purpose, specifically:

- Illumination of significant public features within the municipality;
- Architectural lighting for façades of significant public buildings; and
- Illumination of key directional or wayfinding signage.

9. Constraints

Given the current budget constraints and broader economic pressures, Council is operating within a challenging economic environment. As Council continues to work towards the commitments outlined in the Financial Plan, operational and strategic deliverables are being reassessed to ensure they remain achievable within available resources. Updates to Council Strategies, Audit Actions and Council action plans and project timelines will reflect this recalibration and will be provided as part of ongoing existing performance reporting. Council is taking decisive action to address significant financial pressures by reducing costs, prioritising essential services, and focusing investment on maintaining existing assets. Through disciplined budgeting and strong advocacy, Council is restoring true long term financial sustainability while balancing continued support to the community.

Where new lighting is proposed, Council may need to pursue external grants and alternative funding sources, including programs such as the Safer Local Roads and Streets Program. A further constraint is that not all power poles are currently configured to support street lighting infrastructure. In these instances, upgrades to poles and/or associated electrical infrastructure may be required prior to installation, significantly increasing project costs.

While a spacing of 40–50 metres between lights is considered ideal and can be achieved through Planning permits conditions in new subdivision developments, this may not always be achievable in established neighbourhoods due to the existing location of power poles. In such cases, lighting outcomes may need to be adapted to suit existing infrastructure constraints.

BELOW:
An example of decorative lighting at Princes Park, Maryborough

10. Community Feedback

A draft version of this Strategy was publicly exhibited to seek community feedback on public lighting and its gender impacts. The consultation findings demonstrate a clear relationship between lighting and perceived safety, with respondents, particularly women, indicating that they are more likely to be adversely affected by inadequate lighting conditions.

A significant proportion of respondents also identified that lighting across the municipality is currently insufficient, contributing to both road safety risks (including visibility between pedestrians and vehicles) and perceived personal safety concerns, particularly in areas such as footpaths, car parks, parks and pedestrian links.

Council acknowledges the concerns raised by the community, particularly the need for more consistent, reliable and appropriately located lighting to support safer and more equitable use of public spaces. However, it is recognised that the implementation of widespread lighting upgrades is constrained by Council's financial capacity and competing infrastructure priorities.

In response, Council will identify public areas in need of better lighting and continue to pursue external funding opportunities and grants to support the delivery of public lighting improvements over time.

11. Action Plan

The following Action Plan has been developed to support the implementation of the Public Lighting Strategy over the next ten (10) years. The actions outlined are intended to progressively improve public lighting outcomes across the municipality through the delivery of compliant, safe, efficient and financially sustainable lighting infrastructure.

The actions are grouped into short, medium and long-term priorities to provide a staged approach to implementation, recognising Council's financial constraints, competing infrastructure priorities and the reliance on external funding opportunities for major lighting expansion projects. While the actions are presented in broad timeframes, many initiatives will require ongoing review, coordination with external authorities and integration with future capital works programs to achieve the desired outcomes of the Strategy.

Short term (1–3 years)

- Ensure all new residential and commercial developments provide public lighting that complies with relevant Australian Standards, using standardised pole and luminaire types.
- Ensure all new luminaires installed in existing residential areas subject to Category P lighting standards use appropriate lamp types, with progressive upgrades to achieve a minimum PR5 lighting standard.
- Align the tree trimming program with public lighting objectives to improve light distribution and identify locations where extended bracket arms or catenary lighting may be required.
- Identify public areas requiring additional lighting and seek external funding opportunities to support installation.
- Seek additional external funding to achieve lighting targets identified in Table 1 and to support the provision of additional lighting poles.
- Integrate the installation of additional lighting poles identified in Table 1 into relevant capital works projects (e.g. road safety upgrades or road reconstruction projects) where lighting gaps exist within project boundaries.

Medium term (4–7 years)

- Identify locations along the existing bicycle network where improved lighting would enhance safety and usability.
- Ensure public areas that are not intended for night time use remain unlit to avoid unnecessary energy use and maintenance costs.
- Progressively achieve the lighting targets outlined in Table 1, with priority given to Dunolly and Carisbrook.

Long term (8+ years)

- Review and update lighting targets across all townships to achieve consistency with the current lighting standards adopted for Maryborough.

12. References and Acknowledgements

AS - STANDARDS AUSTRALIA (2020)	*AS/NZS 1158 Lighting for roads and public spaces*
Powercor Australia (2025-2026)	*Citipower/Powercor Pricing Proposal 20235-264*
National Association of State Road Authorities (1988)	*Guide to Traffic Engineering Practice Part 12 Roadway Lighting*
Engineering management Styles (2011)	*Central Goldfields Shire street and public areas lighting strategy*
Powercor Australia (2023-24)	*Citipower/Powercor Pricing Proposal 2023-24*

13. Review

This Strategy must be reviewed a minimum of once every 10 years.

14. Gender Impact Statement

A Gender Impact Assessment is being undertaken based on the outcomes of the public consultation process, including survey data and community feedback on perceptions of safety and access to public spaces.

15. Relevant Legislation and Council Policies

- Central Goldfields Shire Financial Plan 2025/26 – 2034/35
- Central Goldfields Shire Asset Plan 2025
- Central Goldfields Shire Walking and Cycling Strategy 2026-2036
- Central Goldfields Shire Climate Action Plan 2022-2030
- Road Safety Act 1986 (Victoria)
- Road Management Act 2004 (Victoria)
- Electricity Distribution Code of Practice

CENTRAL GOLDFIELDS SHIRE COUNCIL

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