



Comhairle Contae Thiobraid Árann
Tipperary County Council



Tipperary County Council Public Lighting Policy 2022



PUBLIC LIGHTING POLICY

1. Introduction

Tipperary County Council has a stock of approximately 17,850 street lights. Public lighting represents 38% of the council's entire energy usage, and 65% of the council's electricity usage. The Council has introduced LED lights in recent years in order to reduce the maintenance bill, as LEDs have to be maintained less frequently. Furthermore, LED's are more energy efficient with up to 50 per cent energy savings being made. By the end of Q1 2022, Tipperary County Council had 6,000 or circa 33% of our lighting stock as LED lights.

The cost to power, maintain and improve the 17,850 street lights in Tipperary in 2021 came to €1,900,000 with a similar projected cost for 2022. At this time it is envisaged that increased energy prices will add substantially to the cost of providing power to our street lighting in future years.

It is the policy of Tipperary County Council to ensure the development of a sustainable energy efficient public lighting network. Public Lighting is a highly valued and visible asset with the potential to make a significant contribution to the wider community in terms of accessibility, road safety and the fostering of commercial activities. It should be noted that the stock of public lighting is increasing due to the taking in charge of estates, construction of housing schemes, new road schemes, active travel projects, urban and village renewal projects, etc. The need to find CO² reductions will also increase.

2. Policy Objectives

The objective of the Public Lighting Policy is to:

- a) Provide a road network to the optimum safety standard;
- b) Achieve energy conservation and sustainability (in accordance with national policies, E.U. directives and climate change strategies);
- c) Minimise any negative environmental effect of public lighting whilst enhancing the night-time ambiance. This encompasses adhering to best practice to mitigate adverse effect of street lights on nocturnal wildlife, and ensuring that light pollution is minimised through proper design and street light unit selection (Dark Sky Ireland);

- d) Ensure public lighting is in keeping with and is properly integrated into existing infrastructure.

3. Policy Strategies

It is proposed that the following strategies be adopted to achieve the objectives of the Public Lighting policy in both a cost-effective and CO² reduction manner. The policy strategy comprises of three main facets:

- a) The Council maintains a database and management system for its stock of public lights;
- b) The provision of new public lighting together with the upkeep and refurbishment of the existing stock will be managed on a programme basis;
- c) The council will participate in the national Public Lighting Energy Efficiency Project (PLEEP).

4.0 Database and Asset Management System

The council's Roads Section will use a database to manage the public lighting stock. This will entail the use of software packages to manage the database and surveyed information, maintain a street lighting inventory of equipment and maintenance records. Having participated in a Smart Space Interreg project Tipperary County Council is trialling a central management system which gives enhanced control of street lighting.

4.1 Programme:

Participation in Public Lighting Energy Efficiency Project

Tipperary County Council along with 20 other Local Authorities and the TII has signed up to participate in the Public Lighting Energy Efficiency Project (PLEEP). For the project Ireland is divided into three regions with Tipperary County Council participating in the East Region. The goal of this project is to retrofit approximately 280,000 street lights to LED. For Tipperary County Council this will involve upgrading circa 11,600 street lights to LED within the next two years. On completion this council will have 100% LED street lights throughout the county. The cost to Tipperary County Council to upgrade these lights is estimated at €7 million and the project will be self-financing over an 8 to 10-year period.

Prioritisation of annual funding

It is recommended that priority be given as follows:

- 1) Any dangerous or substandard poles and fittings must be dealt with as soon as possible;
- 2) Expensive, inefficient and high energy use lighting is replaced to meet the council's commitments in carbon footprint reduction;
- 3) The repair, renewal and replacement of existing lighting stock is undertaken on a phased basis whereby full streets are done together rather than doing lights intermittently;
- 4) The council will prioritise sections of lights that have a high percentage of faults to cut down on maintenance costs;
- 5) Infill lighting and the extension of existing lighting schemes are undertaken on a phased basis within the 50kph zone;
- 6) Lighting at junctions will be considered as part of junction improvement works within the 50kph and 60kph zones;
- 7) Public lighting will primarily be provided by the council for vulnerable road users safety and not for security purposes;
- 8) Where there is existing CCTV, consideration will be given to the effectiveness of the public lighting;
- 9) Public lighting should be provided on traffic routes within 50kph speed limit areas as a first priority, followed by 60kph areas;
- 10) In exceptional circumstances, where there is a proven Active Travel need and Active Travel funding, with the ability to create permanent segregation, lights can be provided outside the 50 kph/60 kph zone. Active Travel is travelling with a purpose, to work, school or retail, rather than for leisure purposes;
- 11) An annual allocation to Municipal/Borough Districts for public lighting improvements in their areas will be provided. Proposed projects must be agreed with and organised through the Public Lighting engineer, and in line with this policy;
- 12) Knockdowns will be dealt with centrally by the Public Lighting engineer.

Some Practical Applications of Policy

- Tipperary County Council will not increase the number of church floodlights in the county;
- Flood lighting of heritage sites etc. should not be provided by the council as a rule. Where the running cost of such public lighting is currently being paid by the council this arrangement will continue;
- Tipperary County Council will implement dimming, trimming or turning off lights where same is appropriate. This will be done in accordance with nationally agreed burn profiles with ESB Networks (see Appendix 1);
- Decorative lights to be phased out where possible due to the excessive cost of upgrading to LED and maintenance costs;
- Landscape design and layout shall take into consideration the agreed public lighting design and no trees should be planted within falling distance of a public lighting column;
- Ducting to service new public lights shall be installed underground, be accessible to public lighting maintenance service providers and shall not be located in private property.

5. Design Standards & Guidelines

It is essential that all External Lighting schemes comply with the current CEN (European Committee for Standardisation) and BS (British Standards) Code of Practices. Tipperary County Council requires the installation of energy efficient exterior lighting schemes, using the best available technologies.

Measures required to achieve this include the use of lanterns with efficient optics which would minimise light pollution, optimisation of scheme layout, use of energy efficient lamps and electronic control gear, complying with best practice and taking account of the 'Campaign for Dark Skies' issues where appropriate. Therefore, all lighting schemes shall incorporate the requirements of "*Guidance notes for the Reduction of Light Pollution*" issued by the Institution of Lighting Professionals and available as a download from its website <https://www.theilp.org.uk>.

The conditions set out hereunder are required to ensure that County Tipperary has a public lighting system that will:

- Support environmental best practice
- Support energy efficient design and whole life maintenance
- Be designed and installed by competent personnel
- Be designed and installed to the relevant and appropriate Standards and Codes of Practice.

All External Lighting Schemes must meet the requirements of the following documents, as amended:

- SR CEN/TR 13201-1:2014
- BS5489: 2013 and BS 5489: 2020
- ET101: 2008 and ET211:2003
- ESB National Code of Practice for Customer Interface 4th Edition 2008
- Relevant conditions established by the Commission for Energy Regulation (CER) (www.cer.ie)
- Guidance for the Reduction of Obtrusive Light, Institution of Lighting Professionals, Jan 2012 (www.theilp.org.uk).

6. Lighting Designer Requirements

To ensure established exterior lighting design standards are applied to residential and commercial developments where relevant, external lighting designs are required to be undertaken and certified by a trained and competent Lighting Designer who has successfully completed the Institution of Lighting Professionals (ILP) Diploma in Exterior Lighting.

This includes a requirement that exterior lighting schemes should be designed from junctions and traffic (both pedestrian and vehicular) conflict areas back e.g. T-junctions, pedestrian crossings etc. The illuminance/luminance at conflict areas should be as per BS5489 and EN13201 for the particular scheme/location. The External Lighting Designer shall ensure lighting designs meet standards and maximises energy efficiency with consideration to maintenance and whole life costs.

7. General Requirements for New Developments

External Lighting design reports to BS 5489-1:2013, BS 5489: 2020 & I.S. EN 13201-2:2015 as amended, shall be submitted with details on the make and model of proposed lamps, to the Planning Authority for approval.

The lighting designs for all new schemes and modifications to existing developments must include provision for up-grading street lighting at existing junctions, entrances and access roads in addition to any lighting requirements for the proposed development.

For new installations in residential areas, Tipperary County Council requires light-emitting diode (LED) lamps which should be energy efficient, easy to maintain and cost effective. All relevant Irish, British and European Standards and Codes of Practice must be met. Any proposed lights must be listed on the SEAI Triple E register.

Lighting Design Reports should be produced and must include, at a minimum, the following:

- Roadway Report Summary, providing information on:
- Road Data
- Column and Luminaire data
- Polar Diagram
- Lux Plot
- Luminance (cd/m²)
- Site Layout Map of the proposed Public Light Scheme, to a scale of 1/500 or 1/1000, detailing the position of -
 - lighting column position reference and numbers
 - micro pillars
 - mini pillars and supply circuits
 - ducting locations
 - schedule of lanterns installed within the development.

Upon completion the Planning Authority will require the submission of a Certificate of Compliance (Safe Electric Certificate) along with 'as constructed' drawings, calculations, specifications and particulars. The specifications for products for certificates will include Declaration of Performance for materials/products.

It will be a requirement that where lights are installed on a public road as part of a new development that these lights will be on a separate circuit from the rest of the development with associated separate MPRN and pillars.

The first energy bill including the MPRN and GMPRN numbers for the public lighting should be submitted to the Planning Authority within 3 months of the first unit becoming occupied. Public lighting to the development shall be kept energised and maintained by the developer until taken in charge by Tipperary County Council.

8. Specifications

8.1. Columns

- Columns for public lighting should be made of steel or aluminium alloy and certified to IS EN 40 Series.

8.2. Photocells

- All photocells should be manufactured to accord with BS 5972 and have a 35/18 Lux switching regime.

8.3. Luminaries

- Luminaries shall comply with I.S. EN 60598-2-3.
- The Institution of Engineering and Technology (IET) Code of Practice for the Application of LED Lighting Systems 2013 shall apply.
- Lamps to have minimum Lumens per Watt (Efficacy) value of 100.
- Colour temperature of the light source to be in the region of 3300k to 2700k range. Colour temperature up to 4000K can be used at busy intersections. (See Appendix 1)
- A minimum Colour Rendering (RA) value of 65 is required for new installations.
- All lanterns to include dimmable and programmable control gear (either pre-programmed or alterable post installation).
- All LEDs shall be sealed to IP66.
- Tipperary County Council will not accept SOX, SON or mercury sources in new exterior lighting schemes.
- Lighting schemes in the charge of Tipperary County Council include equipment manufactured by various suppliers such as Phillips, WRTL, Urbis, CU Phosco, Thorn, ASD, Verde Led and others. In order to facilitate maintenance Tipperary County Council recommends the use of common

brands for which spare parts are likely to be available for the whole life duration of the asset.

- Tipperary County Council may consider luminaries produced by other less common suppliers/manufacturers provided that the proposed lantern meets the minimum technical requirements as set out in this document, with a demonstrated regard for thermal management of heat for electronic control gear, with readily available parts and being economically feasible to maintain. Details should be discussed with the Public Lighting engineer.
- The Council will monitor developments and emerging technologies where reasonably practical in the area of solar powered lighting, smart lighting, and central management systems.

Appendix 1

National guidelines indicating suitable locations to use dimming profiles are as set out in the table below:

Location	Profile
National Road Networks	As per the TII-DN-LHT-03038 document
City/town centres, main roads	Profile U14 considering reduced activity levels during the hours 12am and 6am. Where there are pubs, nightclubs open until 2am, no dimming will be applied (trimming only) for these areas in city/town centres and main roads. Where there is a possibility of anti-social behaviour, dimming should not be considered (trimming only).
Residential Estates and Rural Residential Settlements	Profile U15 to reduce over lighting and light trespass during sleeping hours. In residential estates where there is a possibility of anti-social behaviour, dimming should not be considered.
Carparks	Profile U17 to provide sufficient lighting levels for staff and sufficient illumination to deter criminal activity late at night.
Park areas, pedestrian areas	Profile U16 due to low traffic volumes and to deter anti-social behaviour between 12am and 6am. If the park is closed, consideration should be given to Profile U23. No dimming will be applied on the pedestrian crossing areas (trimming only).
Dark Sky areas, National parks, within 2.5km radius of bat roost locations	It shall be considered on a Scheme by Scheme basis. Refer to ILP Guidance Note 08/18 "Bats and Artificial Lighting".

Dimming:

Dimming of street lights is the practice of decreasing light intensity at night depending on the expected amount of activity in the area at that time. LED lights use half the energy of traditional public lights, and allow for dimming at appropriate times, which can add a further 7% to 26% efficiency. A reduction in energy use means a reduction in harmful CO² emissions.

Trimming:

Trimming of New LED Street Lights

Existing burn profiles for older Sox and Son lamps are either 70/70 Lux or 70/35 Lux switch on/off. This means that with our older lights once daylight drops to 70 lux the street light will begin to come on. It takes several minutes to reach full strength and it will remain at full strength until the dusk to dawn sensor registers that sunrise has begun and the light level has reached 70 lux or 35 lux depending on the sensor fitted. This allows time for the light to ramp up each night.

LED street lights turn on instantly so a buffer time is not required. The new profiles agreed with ESB Networks to cater for LED will incorporate a switch on/off at 35/18 Lux or 20/20 Lux. Depending on which new dusk to dawn sensor is fitted the LED light will turn on when the daylight dims to 35 lux or 20 lux and will turn off when the dawn light returns to 18 lux or 20 lux. This will decrease the number of hours the lights will be on over a year while still achieving minimum lighting requirements.

Colour Temperature of LED lights.

Public lighting is manufactured to pre-specified colours, which is measured in kelvin (k). 1000k lights are orange/red in colour moving up to white at 6000k and blue at 10,000k. Our Public Lighting policy states that 'colour temperature of the light source to be 4000k or less'.



Kelvin Scale of Colour for Lighting



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AT A MEETING OF THE COUNTY COUNCIL, HELD IN THE COUNCIL CHAMBER, CIVIC OFFICES, NENAGH, CO. TIPPERARY AND REMOTELY, ON THE 12TH DAY OF DECEMBER 2022,

IT WAS MOVED BY: Tom Fitzgerald

AND SECONDED BY: Michael O'Wineola

AND RESOLVED:-

"That Tipperary County Council hereby adopts the Public Lighting Policy 2022, as presented by the Roads, Transportation and Infrastructure Strategic Policy Committee".

SIGNED:

Roger Kennedy
Cathaoirleach



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Tipperary County Council

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