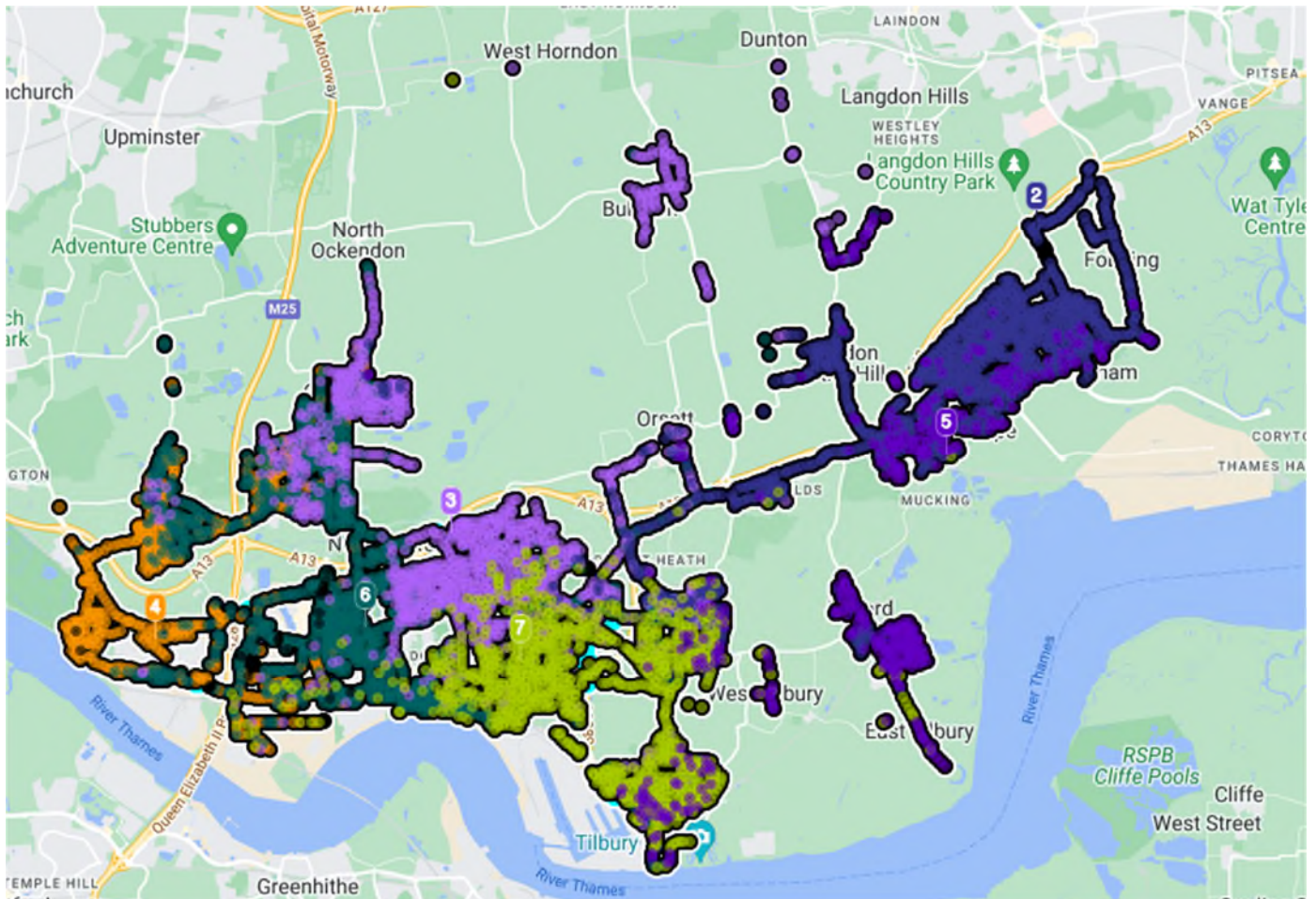


Thurrock Council

Street Lighting

Central Management System Strategy



Contents

Version control	3
1. Introduction	4
2. Purpose and key implications.....	4
2.1. Legal Issues	4
2.2. Strategy	5
2.3. Resource implications	5
2.4. Risk implications.....	5
2.5. Cost of street lighting.....	5
2.6. Environmental implications.....	5
3. Legislation and regulations.....	6
4. Main objectives	6
5. Removal of street lighting.....	7
6. Dimming	7
7. Obstructive light – environmental issues.....	8
8. Use of new and emerging technologies	8
Appendix 1	9
Appendix 2.....	11

Version control

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1. Introduction

This strategy outlines the basic principles and standards applying to street lighting profiles and how they are managed using the Central Management System (CMS).

The term 'street lighting' encompasses lighting and all other items of illuminated street furniture provided on the public highway, whether or not adopted by the council, except for Intelligent Traffic Systems – for example, traffic signals.

Public lighting that is well designed and effectively maintained and operated brings many benefits and can support:

- improved public safety
- potential reduced crime
- potential improved commerce
- making sustainable and non-motorised transport a more attractive mode of transport
- reduced energy costs and consumption

Street lighting has many benefits if designed, installed, and maintained correctly. In the past some areas have been over-lit, and on occasion poorly maintained. This street lighting strategy aims to reflect current guidance on street lighting with respects to lighting levels versus energy reduction and support the council's climate change actions.

Where existing street lighting on the adopted highway is below the standards set in this strategy, it will be upgraded to the standards set in this strategy where reasonably practicable and subject to available funding. For example, where it is not reasonably practicable to achieve the standards set in this strategy due to the distance between lamp columns, the council will endeavour to get as close to the standard as reasonably practicable with the most appropriate and available energy efficient lanterns using the existing column spacings.

2. Purpose and key implications

This strategy has been created to outline the deemed acceptable levels for setting lighting and set future maintenance standards. It should be read in conjunction with the council's Street Lighting Policy.

The policy provides a guide for developers for the general principles and requirements for the implementation of new street lighting schemes.

For street lighting information online, go to www.thurrock.gov.uk/street-lighting

2.1. Legal Issues

In accordance with the Highways Act 1980, Health and Safety at Work Act 1974 and Electricity at Work Regulations 1989, there is no statutory requirement for local authorities to provide public lighting. Councils do, however, have the power to provide lighting and once provided, have a duty to ensure that assets for which they retain responsibility for are maintained in a safe condition.

Thurrock Council, as the Highway Authority, is responsible for all street lighting on the public highway and maintains most streetlights – around 27,000 – across the borough, including illuminated signs and bollards.

2.2. Strategy

This strategy considers the needs of all road users and residents and considers achieving Net Zero and the council's own aspirations for the environment. It also considers the need to balance increasing energy costs without compromising safety.

This strategy supports many of the council's goals. Those of particular relevance to street lighting are:

- to minimise carbon emissions and adapt to the impacts of climate change
- to focus on transport, business and homes
- to reduce crime and criminal damage
- to tackle anti-social behaviour

2.3. Resource implications

Repairs to street lighting and energy costs are primarily funded from the council's revenue budgets. Lamp column replacements are carried out in accordance with calculations and structural test results that follow recommendations from the Institute of Lighting Professionals, Guidance Technical Note 22 (TR22). Therefore, Lanterns have been replaced with LED lanterns and are compatible with the CMS operations.

A key aim of this strategy is to decrease the council's financial commitment for street lighting maintenance and ensure value for money is achieved.

2.4. Risk implications

The Council would be at risk of failing in its statutory duties as Highway Authority if it did not have robust highway maintenance and transportation strategies in place. Effective strategies, such as the street lighting CMS strategy, support the wider strategies and policies of the Council.

2.5. Cost of street lighting

In order to install and maintain effective and efficient street lighting there are cost implications in a number of areas that must be considered, these areas include:

- financial – capital, maintenance and energy costs
- environmental – carbon emissions and light pollution
- amenity – visual and aesthetic impact

This strategy strikes a balance between the benefits of street lighting and its associated costs, whilst ensuring all relevant regulation, legislation and British Standards are followed.

2.6. Environmental implications

Poorly designed street lighting can cause light pollution, increase the fear of crime and be inefficient in its energy consumption.

This strategy has been produced to set out how existing lighting work patterns can be changed to effectively reduce the energy consumption of existing and future street lighting assets. It will include the use of new technologies such as the CMS to ensure the objectives are achievable and sustainable.

The council has replaced the majority of its highway lanterns with new LED lanterns. These consume far less energy than previous installations and also provide a greater control of light splay, reducing light pollution. There are a few remaining lanterns which could not be replaced due to access issues or compatibility with existing equipment, these will be replaced over time.

All the new LED lanterns are compatible with the council's Central Management System which will enable energy savings through dimming, trimming and accurate energy reporting.

3. Legislation and regulations

Street lighting systems installed and maintained within the council's control shall be in accordance with the following:

- Highways Act, 1980
- The Management of Health and Safety at Work Regulations, 1999 and 2003
- Electricity at Work Regulations, 1989
- BS 7671 17th Edition Wiring Regulations
- Traffic Signs Regulations and General Directions, 2016
- The (Highways) Road Hump Regulations, 1999
- New Roads and Street Works Act, 1991
- British Standard for the Lighting of Highways
- Well Managed Highway Infrastructure (ACoP)

4. Main objectives

The purpose of lighting is to help create a better environment in which to live, work and play. Street lighting supports this by increasing safety, security and enhancing the night-time environment.

Between 2015 and 2022 the majority of the council's highway lanterns were replaced with new energy efficient lanterns and a Central Management System was installed in 2022/23 for the majority of the council's lighting stock, approximately 17,000 lights. The system reports faults directly through an online dashboard and this allows the Council to remotely control the light output of the lanterns. Some advantages of using a CMS with LED lanterns are as follows:

- increased maintenance periods as LED lanterns are anticipated to last between 20 and 25 years with less maintenance requirements than traditional street lighting lanterns
- reduced energy bills – replacing older lanterns with more modern energy efficient units (LED lights)
- reduced energy consumption by use of CMS – precise wattage figures and precise lighting times can be used to calculate the energy consumption rather than traditional national average times
- functionality of the CMS allows other energy saving innovations such as dimming of lights or part night lighting to be introduced, trialled or modified in specific locations without the need for any works at street level
- functionality of the CMS ensures lighting faults are reported directly to Thurrock Council's Highways Street Lighting team via an online dashboard, enabling the council to maintain lights effectively and reducing the number of helpdesk calls and reports of lights that are not working

Delivery of the LED roll out of the project was essential for the council as the majority of lantern stock was at the end of its life and used significantly more energy in comparison to LED alternatives. The council's objectives are to:

- provide a safe road network for all highway users
- help reduce crime and the fear of crime
- provide a cost-effective public lighting service
- conserve energy and provide sustainability in line with the council's emerging climate change strategy

The main considerations when considering the above objectives are:

- avoid unnecessary lighting
- avoid over-lighting
- improve reliability and maintenance of equipment
- reduce whole-life costs
- ensure a co-ordinated street scene approach
- improve electrical, structural and other safety issues
- improved location and accessibility of equipment
- improve passive safety
- use of innovative and maturing technology such as part-night lighting, variable lighting levels with electronic gear
- lighting for closed circuit television (CCTV)

5. Removal of street lighting

This strategy sets out the standard of street lighting on the adopted highway and where it shall be provided subject to available funding.

Where there is existing street lighting that is not specifically required by this strategy then this will be removed when possible and practical and where it is safe to do so, based on a risk assessment of road safety and crime.

The streetlights that do not meet the requirements of the council's Street Lighting Policy are mainly those on link roads with a de-restricted speed limit between settlements in rural areas. These lights are not required by statute or under British Standards and similar roads are not usually lit in other areas of the southeast and the rest of the United Kingdom.

Local Members will be consulted on the risk assessment to ensure it reflects all relevant factors before a determination is made.

Illuminated signs will be removed or de-illuminated, where permitted by the Department for Transport's Traffic Signs Regulations and General Directions 2016.

6. Dimming

Where the street lighting equipment installed allows, lighting levels will be dimmed as follows.

Area	Times	Dimming
Strategic road network junctions	All operating hours	30% dimmed
Controlled crossings and subways	All operating hours	Unaffected

Area	Times	Dimming
Local road network	Dusk to midnight	30% dimmed
	Midnight to 5am	50% dimmed
	5am to daylight	30% dimmed

An illustrative plan is shown in Appendix 1.

The above reflects the reduction in road traffic and pedestrians late in the evening and early in the morning. The above dimming profiles, continue to provide a reasonable level of lighting, which has been benchmarked across the ADEPT Eastern region (Appendix 2).

Consideration will be given to the level of lighting where CCTV is present, and the dimming profiles will be reviewed and set at the appropriate level to ensure the CCTV operations are not compromised.

7. Obstructive light – environmental issues

Obtrusive light can be any light that is emitted in a direction in which it is not required or wanted and as such can be detrimental to those affected. The effects of obtrusive light are:

- unwanted illumination of premises
- impairing the view of the night sky
- keeping people awake during the night or disturbing sleep patterns

These effects shall be minimised by the selection of the correct column heights, illumination levels and lanterns for the specific application.

Where obtrusive lighting can be determined, a shield should be specified as part of the design process where possible. However, the illumination of the highway shall remain the priority.

Customer reports of obtrusive lighting shall be considered on an individual basis and alternatives explored before the installation of a shield.

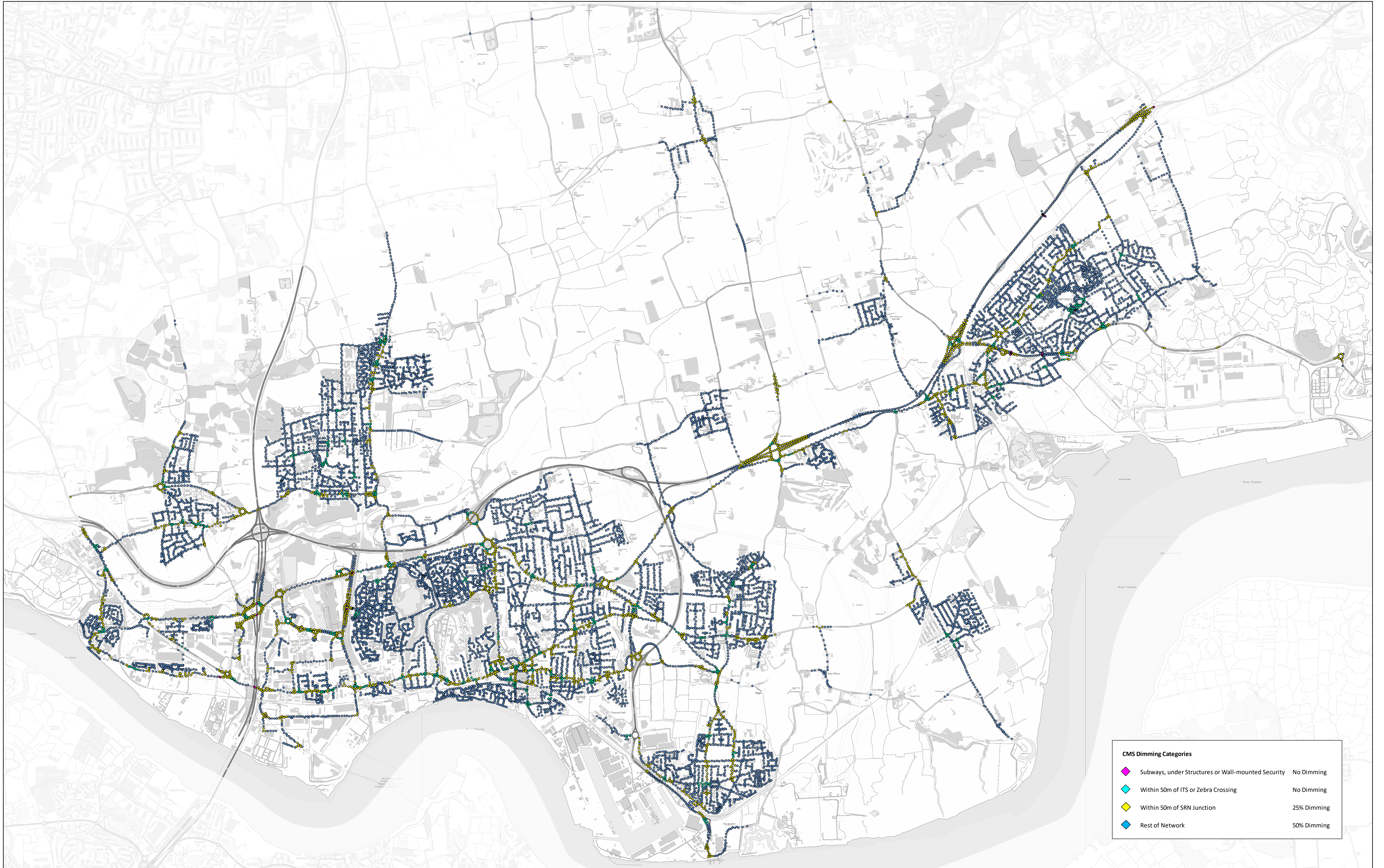
8. Use of new and emerging technologies

The council will continue to review new and emerging technology to ensure that the most technically and economically advantageous street lighting technology is utilised.

LED light sources and a central management system to facilitate dimming and remote monitoring are currently in place on all lamp column assets.

Appendix 1

A map of Thurrock lighting column CMS dimming categories is show on the following page.



Appendix 2

County	Criteria	Dimming regime, percentage of start-up	Times
Cambridge	Traffic routes	80	8pm to midnight
		60	Midnight to 6pm
	Local routes	60	10pm to 6am
	Cambridge City	80	10pm to 2am
		60	2am to 6am
Hertfordshire	PNL	50	9pm to 11pm
		20	11pm to 1am
	ANL	75	11pm to 6am
Suffolk	Traffic routes	75	All night
Essex	PNL	70	8pm to 10pm
		50	10pm to 5am
		70	5am to 6am
	ANL	70	8pm to 10pm
		50	10pm to 5am
		70	5am to 6am
Thurrock	SRN	75	5pm to 7am
	Local routes	75	8pm to midnight
		50	Midnight to 5am
		75	5am to dawn
	Xings	100	5pm to 7am
Norfolk	Traffic routes	75	8pm to 10pm
		50	10pm to dawn

Criteria abbreviations:

- PNL – Part Night Lighting
- ANL – Artificial Night Lighting
- SRN – Strategic Road Network
- Xings – All controlled crossing including subways