

CABINET

Date of Meeting	Tuesday, 16 th January 2024
Report Subject	Street Lighting, Traffic Signals and External Electrical Infrastructure Policy 2023-2028
Cabinet Member	Deputy Leader of the Council and Cabinet Member for Streetscene and Regional Transport Strategy
Report Author	Chief Officer (Streetscene and Transportation)
Type of Report	Strategic

EXECUTIVE SUMMARY

Street lighting provides illumination for various types of highway and public open spaces, assisting road safety and ease of passage for all users in the hours of darkness. Improved visibility reduces the likelihood of traffic collisions and improves road safety. There is no legal requirement on local authorities in the UK to provide street lighting for any highway or proposed highway under its responsibility; however, the Council does have a duty to ensure that lighting units are maintained in a safe condition. Street lighting can enhance the night-time economy and encourage the use of facilities, as well as contributing to the general well-being within communities. It has a wider social role, helping to reduce crime and the fear of crime, and can contribute to commercial and social use of town centres, shopping areas and tourist locations at night-time.

The last time the policy was reviewed was in 2015 when the standards were amended for repairing street lighting faults and the frequency of night-time inspections were revised, as well as including provision for part-night lighting and dimming lights.

The draft policy sets out the responsibilities, requirements and standards for all new or replacement external public highway lighting, and aims to incorporate, wherever practicable, all relevant codes of practice and legislation, together with industry best practice and national policies. The revised policy being presented for consideration with this report takes into account additional electrical infrastructure, such as electric vehicle charging, vehicle activated signs and defibrillators.

RECOMMENDATIONS

1	That Cabinet notes the portfolio's performance against the current standards and policy.
2	That Cabinet supports the revised Street Lighting policy

REPORT DETAILS

1.00	BACKGROUND TO THE STREET LIGHTING POLICY AND PROVISION OF STREET LIGHTING AND ASSOCIATED ELECTRICAL EQUIPMENT
1.01	<p>Street lighting provides illumination for various types of highway and public open spaces, assisting road safety and ease of passage for all users in the hours of darkness. Improved visibility reduces the likelihood of traffic collisions and improves road safety.</p> <p>There is no legal requirement on local authorities in the UK to provide street lighting for any highway or proposed highway under its responsibility; however, the Council does have a duty to ensure that lighting units are maintained in a safe condition. Street lighting can enhance the night-time economy and encourage the use of facilities, as well as contributing to the general well-being within communities. It has a wider social role, helping to reduce crime and the fear of crime, and can contribute to commercial and social use of town centres, shopping areas and tourist locations at night-time.</p>
1.02	<p>Under the Highways Act 1980, the Health and Safety at Work Act 1974 and Electricity at Work Regulations 1989, the Council has a duty to maintain its assets in a safe condition. The Council also has a statutory duty to provide traffic signals and certain illuminated traffic signs and bollards as prescribed within the Traffic Signs and General Directions Act 2023.</p> <p>Under the Highways Act 1980, there is no statutory requirement for local authorities to provide public lighting. However, Councils do have the power to provide lighting for any highway or proposed highway for which they are the designated Highway Authority. The Council also has a duty under Section 17 of the Crime and Disorder Act 1998 to exercise its lighting function with regard to its effect on crime and disorder in an area. Section 39 of the Road Traffic Act 1988 also places statutory duties on the Council to promote road safety. The policy also relates to the following pieces of legislation and codes of practice:</p> <ul style="list-style-type: none">• Code of Practice for Well-Managed Highway Infrastructure• British Standards 5489-1:2020• Construction, Design and Management (CDM) Regulations
1.03	<p>The Council currently owns and maintains 112 traffic signal junctions, 21,300 street lighting units, 3,250 illuminated signs and bollards, 122 vehicle activated signs (VAS) along with various other electrical equipment ranging from feeder pillars, car park ticket machines, illuminated warning lights, defibrillator power sources, speed camera supplies, electric vehicle charging point supplies etc. across the county. In addition, the Council maintains the street lighting and associated infrastructure on behalf of the North and Mid-Wales Trunk Road Agency (NMWTRA), which adds an additional 12 traffic signal junctions across north-east Wales (Wrexham, Flintshire and Denbighshire), 2,500 lighting units, 450 illuminated signs and bollards and a number of other electrical assets.</p>

1.04

Budget, Resources and Asset Management

- a) The street lighting and traffic signal budget for 2023-2024 is £296,000 (excluding energy costs). This covers all aspects relating to the maintenance of the electrical and illuminated infrastructure within the adopted highway network.
- b) The resources required to deliver the current street lighting service is 5 FTE electricians plus a supervisor. This includes 1 FTE that is self-funded by the costs recovered from external work for NMWTRA and Town and Community Councils.
- c) Approximately 60% of the lighting assets i.e. 12,050 columns and 1,820 illuminated signs and bollards, are older than their anticipated 30-year life expectancy and we are seeing significant costs arising from structural inspections with a high failure rate and an increasing 1-yearly re-inspection requirement, which is likely to lead to a high replacement need in the coming years.
- d) Currently, 673 columns have been identified as requiring immediate and complete replacement or removal along with approx. 220 illuminated signs that require attention in this financial year with replacement costs in the region of £1.79m. These columns are regularly inspected to ensure that their continuing structural integrity are known. At the present time, around 160 columns per year require immediate action or replacement because of their structural integrity identified following the Council's structural testing regime.
- e) In addition to this and more commonly following the structural testing, which is scored on a six yearly basis chart, we are seeing an increase in one yearly re-visits, which over time will result in a substantial number of columns requiring replacement or action in a future financial year.
- f) The current estimated costs for known street lighting column replacements not including illuminated signs and bollards is £1.35m. This is likely to increase with time and currently it is estimated that we could see costs rising by £400k per year on top of the current requirement costs. There is no budget allocated or available for the replacement of these columns and there is no funding for capital improvements to the lighting infrastructure.
- g) There are also 6 traffic signal sites across the county that have been identified as failing in our annual survey, which are being kept operational through regular repairs and maintenance, but are considered beyond design life with spares availability for outdated equipment running extremely low.
- h) Following this year's maintenance regime of the traffic signal units, a further 8 sites have been identified for future replacement in addition to the 6 sites in the coming year. We will also need to replace all halogen lighting units in the coming 18 months due to new legislation and end of manufacturing of parts. Indicative costs have been obtained from the contractor and vary, as some sites can be upgraded to new replacement light sources while others require a complete signal head and associated parts change.

- i) A cost has been sought to replace the units from halogen to LED; however, the indicative costs for this are prohibitively high. Funding is required for replacement. The sites that have exceeded their life and are failing* are as follows (*please note not failed, but failing):
- FC 252 – A548 Gronant
 - FC 307 – A541 Chester Road, Mold
 - FC 101 – B5127 The Cross, Buckley
 - FC 300 – B5444 King Street / Earl Street, Mold
 - FC 302 – A5119 The Cross, Mold
 - FC 345 – B5101 Keepers Lodge, Llanfynydd
- j) These sites have been classified as Priority 1, which require immediate attention and are constantly being attended to either for failures or replacement parts that are now nearly impossible to source. As a result, we are having to use stock from older sites that have replaced in the last few years, but these have been depleted too. There are also a large number of Priority 2 locations which are considered to be “out of age” sites and again, we are struggling to obtain spare parts for this equipment, and they will soon become an issue, requiring immediate attention at point of failure.
- k) Energy Costs
 The annual consumption and cost of electricity for street lighting and traffic signal units is currently approximately £950,000k per annum, based on the current rate of pence per kilowatt hour (ppkwhr). The portfolio is currently reporting an in-year budget pressure of around £200k for street lighting due to increased energy costs.

1.05

Reporting Faulty Lights or Equipment

Faults involving streetlights are usually caused by the failure of the lamp or other electrical component. In a minority of cases, the fault may be due to the failure of the electricity supply, vandalism or accident damage. Any faults which may occur with this equipment are repaired by the Council, utilising the Council’s in-house street lighting service within Streetscene and specialist contractors under contract as and when required.

Supply faults are the responsibility of the Network Management Organisation (normally Scottish Power), who is responsible for providing the electricity supply to the column.

Street lighting faults are reported the Contact Centre (via 01352 701234 or via email/webpage). The Contact Centre logs the fault on the Customer Relations Management (CRM) system with the road name, asset number and location within the highway and nature of the fault, which is then passed to the portfolio and logged on the asset management system (Mayrise), which shows the location of Council owned lighting units and electrical assets.

Town and Community Council lights that are maintained by the Council will also be entered onto the Mayrise software system and highlighted to ensure that the operator is aware of the specific ownership details. The Mayrise system holds the location of units maintained by Streetscene and these are reported and added to the system in the same process as Flintshire County Council assets.

Once the fault notifications have been logged onto the Mayrise software system, they are then sent electronically to a tablet device for the electrician to carry out the necessary repairs.

1.06

Response Times

The policy sets out the current response times, which are also included in the Streetscene Standards. Emergency or Urgent fault timeframes will apply until the fault is made safe and then allocated for final repair, if required, to the most appropriate fault code prioritisation timeframe following the make safe.

These are as follows: -

- *Emergency call outs - Attend site in 2 hours:
 - damage to underground cable / overhead cable (FCC owned)
 - exposed cable / metal work reported as live
 - column door missing
 - lantern or bowl hanging
 - column or pole swaying in wind
 - structurally unsafe column or pole
- Urgent fault - 1 working day:
 - lanterns or brackets turned or misaligned presenting a danger to the public
 - columns leaning but presenting no clear danger
 - bollard heads turned or misaligned presenting a danger to the public
 - miscellaneous faults deemed as a danger to the public
- Faults in supply system affecting apparatus - Regional Electricity Company informed within 24 hours
- Fault reported to Street Lighting section - 10 working days
- Faults found on night-time inspections - 7 consecutive days
- Routine (cyclical maintenance) - 90 days

Most street lights take their electricity from the mains supply so will fail if there is any loss of power or if there is a problem with the cable. We will report these faults to the electricity company. The performance targets for electricity company responses are defined by OFGEM and are as follows:

- Emergency fault repair response - Attend site in 2 hours
- High priority fault repair, traffic light controlled - 2 calendar days
- High priority fault repair, non-traffic light controlled - Within 10 working days
- Multiple unit fault repair - Within 20 working days
- Single unit fault repair - Within 25 working days

A high priority fault repair is a fault which is considered to be urgent, for example at the site of an accident blackspot, major road junction or an area of public order concerns.

The number of reported faults received by the portfolio in recent years is as follows (not including internal and maintenance reported faults):

2020/2021 - 604
2021/2022 - 1021

2022/2023 - 931

The service performance for responding to faults in recent years has been as follows:

2020/2021 – 27.6 days

2021/2022 – 13.4 days

2022/2023 – 7.2 days

The current standard for mains supply faults is 18 working days (i.e. those not the responsibility of the Council). The Council has recently been successful in obtaining financial compensation from the Network Management Organisation, where they have failed to meet this agreed standard.

1.07

Inspections, Repairs and Maintenance

Night-time driven visual inspections are carried out every 28 days in the Summer months (April to September) and 14 days in the Winter months (October to March). Items checked include:

- Lanterns which are dark or non-operational
- Lamps not fully run up or flickering
- Lanterns turned or misaligned
- Lanterns obscured by foliage
- Lantern bowls hanging, missing or suffering major damage
- Column doors missing
- Brackets misaligned
- Columns leaning

Routine maintenance is carried out tri-annually and split across schedule programmes of work. This includes:

- Clean all lamps, reflectors and other components affecting optical performance.
- Examination of superficial damage, corrosion, chipping, flaking or cracking (concrete columns), cable deterioration, reporting condition.
- Inspect all electrical items rectifying where necessary.
- Check correct operation of photoelectric cell or associated switching device.
- Adjust clocks to correct time where photoelectric cells are not fitted.
- Non-routine maintenance is carried out as required.

Bulk lamp changing of lamps takes place on main routes and in the town centres on a three and four-year cycle based upon lamp source for Street Lighting Lanterns and signs where such lanterns are still installed.

Structural testing and inspection of columns is carried out in accordance with TR22 every year based upon a one, three and six year regime. Currently Flintshire County Council inspect and test approx. 2000 units per year.

Electrical testing is carried out every six years in accordance with BS 7671.

1.08	<p>The Council is responsible for the structural integrity of all its electrical assets on the adopted highway network, including the street lighting columns and the electrical apparatus within them. This extends to all infrastructure which is placed upon, within and over the adopted network. Additionally, the Council is responsible as highway authority (but not always at the Council's cost) for all assets installed to and from these.</p> <p>Such applications and infrastructure to this could be any electrical or illuminated assets, which span across or over any adoptable Council infrastructure regardless of ownership. An example of these maybe festive illuminations or remembrance poppies erected onto street lighting columns. All such installations require formal approval to be erected onto Flintshire County Council's infrastructure along with full compliance with the appropriate specification and legal requirements. Such applications should be made directly to the Operational North and Street Lighting Manager on the relevant form within the street lighting specifications.</p> <p>We are not responsible for and do not maintain lighting or electrical assets on unadopted or private roads.</p>
1.09	<p>Some Town and Community Councils (T&CCs) own and maintain their own footway lighting columns which total approximately 3,000 units. Approximately half of the T&CC's subsequently contract the Council to carry out the necessary repairs and maintenance on their behalf with the remaining Councils contracting the work to private contractors or organisations.</p> <p>All T&CCs must follow the same standards, rules and regulations as the County Council, and they must submit when requested, the relevant information to Streetscene to demonstrate compliance with the Highways Act 1980.</p> <p>There are variations in the way T&CC owned footway lighting is maintained i.e. either via the County Council or through independent contractors.</p> <p>Where the T&CC then contracts the Council to carry out the work, the lighting is maintained to the same standard as Council owned lighting. Whilst details of the lights are being entered onto the Council's inventory, complaints regarding faults are received directly into the Contact Centre and passed to the electricians electronically to carry out the necessary repair work.</p> <p>Once details of the T&CC inventories have been gathered, the lighting units owned by the T&CC's will be managed in exactly the same manner as the County Council's own lighting and fault details will be passed electronically to the electricians.</p> <p>Street lighting is also installed on new housing estates where the roads (or footpaths) are to be adopted by Flintshire County Council. Developers are required to install lighting in accordance with our requirements and are responsible for all maintenance until formal adoption by the local authority takes place. This occurs only after a thorough inspection by the Council's street lighting supervisor or Operational North and Street Lighting Manager.</p>

<p>1.10</p>	<p>LED conversion / Dimming lights / Part night lighting</p> <p>Like so many other councils across the country, we took the decision in 2015 to reduce carbon emissions and costs, through a phased introduction of new replacement LED light installation and the Council completed a two-year programme to convert all the county’s street lanterns to LED in 2019.</p> <p>All Flintshire County Council Streetscene lanterns have the ability to be dimmed and as such we dim a large number of lights between the hours of 22:00 and 06:00, resulting in energy savings of up to 30%. Most lanterns have automatic sensors (photocells), which turn them on at night at a selected illumination level and off when there is sufficient natural light. Other lights are set to turn on and off at specific times depending on location e.g. if road is overshadowed by dense trees or is a known accident hotspot.</p> <p>Many other local authorities have already introduced part night lighting schemes successfully and without adverse effects, which have made significant savings. With rising energy costs and reduced budgets these types of changes to street lighting are becoming more common.</p> <p>As part of the MTFS budget solutions for 2023-2024, work is ongoing to deliver further efficiencies either through consideration to extending part night lighting or dimming in line with the policy.</p> <p>Any areas proposed for part night lighting will be subjected to a risk assessment and consultation. Such consultations would include the Police, local ward members and other interested parties where required. By extending the part-night lighting a financial saving of approximately £12k per 1,000 lanterns will be delivered. This will be achieved by replacing the photocells on the lanterns installed at locations defined within the policy.</p> <p>Rapid technological advancements, particularly in the realm of illumination and control systems, coupled with a growing demand for electrical infrastructure to support various amenities, have necessitated a thorough review of the Street Lighting Policy. By embracing innovation and adopting a forward-thinking approach, the Council can ensure that its street lighting infrastructure remains efficient, sustainable, and well-equipped to meet the needs of the community.</p> <p>Lighting systems are designed to provide consistent levels of light in a road. Turning off every other light is not only likely to create pockets of darkness but also make it harder for the eyes to adjust and see clearly between lights.</p> <p>Modern light sources and lanterns are designed with improved optical control to concentrate the light downwards onto the street rather than permit spillage upwards into the night sky. Any new illumination sources that we install are designed to minimise light pollution in this way and older lights will gradually be replaced with these at the end of their life.</p>
<p>1.11</p>	<p>Policy Review</p> <p>The current policy covers all aspects of the service, including adoption, installation and the various maintenance regimes, which are essential for maintaining the system in a safe an efficient state of repair.</p>

	<p>The review of the Street Lighting Policy and amendments to the specifications for electrical assets have been prompted by a number of changes and advancements in technology, not only in light emitting diodes for illumination and electronics for control systems, but also due to the additional requirement and number of requests for the installation of certain electrical assets within and on adoptable and maintained Council infrastructure, such as vehicle activated signs, defibrillators and electrical vehicle (EV) charging points. Additionally, the recent consultation on the potential for a new national park encompassing large parts of the west of the county and the Clwydian Range will need to be taken into account.</p> <p>The new policy sets out the responsibilities, requirements and standards for all new or replacement external public highway lighting, and aims to incorporate, wherever practicable, all relevant codes of practice and legislation, together with industry best practice and national policies.</p>
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2.00	RESOURCE IMPLICATIONS
2.01	<p>Revenue: The portfolio is currently reporting an in-year budget pressure of £200k for street lighting due to increased energy costs.</p> <p>As part of the MTFs budget solutions for 2023-2024, work is ongoing to deliver further efficiencies either through extending part-night lighting or light dimming in line with the policy. By extending the part-night lighting a financial saving of approximately £12k per 1,000 lanterns will be delivered. This will be achieved by replacing the photocells on the lanterns installed at locations defined within the policy.</p> <p>Capital: As outlined in Section 1.04, a number of street lighting assets and electrical infrastructure are now at a critical stage and in urgent need of replacement. A bid has been submitted to the Capital Programme Board for 2024-2025 for the most critical assets and will be subject to sufficient budget being available and approval by the Board.</p> <p>Human Resources: There are no known implications for additional capacity or for any changes to current workforce practices, structures or roles as part of this policy review.</p>

3.00	IMPACT ASSESSMENT AND RISK MANAGEMENT	
3.01	Ways of Working (Sustainable Development) Principles Impact	
	Long-term	Positive – the revised street lighting policy can help with Council’s carbon reduction and reduce light pollution, energy consumption, carbon emissions, and costs, while improving safety, health, and well-being for people and wildlife
	Prevention	Positive – prevention of problems by adopting a responsible outdoor lighting policy: sufficient

	light, glare control, light trespass reduction, sky glow reduction, and energy conservation
Integration	Neutral - integration of sustainable development into all aspects of operations
Collaboration	Neutral – continue to collaborate with other departments, organisations and sectors e.g. Town & Community Councils, developers
Involvement	Neutral - engaging with local communities and stakeholders to understand their needs and preferences for street lighting, and to raise awareness of the benefits of sustainable lighting

Well-being Goals Impact

Prosperous Wales	Positive - The development of street lighting and technology will ensure that infrastructure is innovative and contributes to a low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately.
Resilient Wales	Positive – Street lighting is an important aspect of urban infrastructure that can affect the safety, security, and sustainability of communities. Street lighting can help to promote security and deter crime or reduce the fear of crime by increasing visibility and surveillance. Reducing energy consumption and carbon emissions by switching to more efficient LED lights, dimming lights at off-peak hours, or using renewable energy sources contributes to a resilient Wales. Additionally, street lighting can contribute to a resilient Wales by enhancing road safety and reducing traffic accidents by providing adequate illumination and visibility for all road users.
Healthier Wales	Positive - street lighting can improve the quality of life, health, safety, resilience and sustainability of people and communities by extending the hours of activity and reducing the fear of active travel at night. It can also improve the safety and comfort of road users by reducing the risk of accidents and collisions. However, street lighting can also have negative impacts on the environment, wildlife and human health if not installed efficiently, sensitively or carefully, such as increased light pollution, increased energy consumption and disruption of circadian rhythms and habitats.
More equal Wales	Positive - Street lighting can have various impacts on society, such as road safety, crime prevention, environmental sustainability, and social inclusion. Street lighting can also affect the well-being and quality of life of people, especially those who live in rural or

		disadvantaged areas. Street lighting can provide a sense of security, comfort, and belonging, as well as enable social and economic activities after dark. Therefore, street lighting can be seen as a way of promoting social justice and equality, by ensuring that everyone has access to the benefits of public lighting, regardless of their location, income, or background.
	Cohesive Wales	Positive – Street lighting can help to deter crime and antisocial behaviour by creating a sense of surveillance and community cohesion.
	Vibrant Wales	Positive - Street lighting can create liveable spaces that enhance social engagement, public services, and community pride, as well as supporting local economy and social inclusion by facilitating night-time activities, such as shopping, entertainment, or cultural events.
	Globally responsible Wales	Positive - how street lighting is designed, operated and maintained can affect how Wales contributes to global well-being. Some of the ways that street lighting can contribute to this goal are by using energy-efficient technologies, such as LED lamps, that reduce greenhouse gas emissions and save costs, implementing smart lighting systems, such as dimming, switching off or adjusting the colour of lights, that respond to traffic, weather and ambient light condition, and by minimising light pollution.
	<p>The policy also links to the Council’s Well-being Objectives 2022-2023 in terms of supporting safer communities and limiting the impact of the Council’s services on the natural environment and supporting the wider communities of Flintshire to reduce their own carbon footprint.</p> <p>The provision of street lighting also aims to contribute to the Council’s priorities in terms of providing a well-connected, safe and clean local environment and supporting people in need to love as well as they can by creating resilient communities where people feel connected and safe.</p>	

4.00	CONSULTATIONS REQUIRED/CARRIED OUT
4.01	Deputy Leader of the Council and Cabinet Member for Streetscene and Regional Transport Strategy.

4.02	With the Environment & Economy Overview & Scrutiny Committee.
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5.00	APPENDICES
5.01	Draft Street Lighting, Traffic Signals and External Electrical Infrastructure Policy – To be presented at Cabinet. Specifications for Street Lighting, Traffic Signals and External Electrical Infrastructure – To be presented at Cabinet.

6.00	LIST OF ACCESSIBLE BACKGROUND DOCUMENTS
6.01	None.

7.00	CONTACT OFFICER DETAILS
7.01	<p>Contact Officer: Barry Wilkinson, Highway Network Manager Telephone: 01352 704656 E-mail: barry.wilkinson@flintshire.gov.uk</p> <p>Contact Officer: Darell Jones, Operational North and Street Lighting Manager Telephone: 01352 701290 E-mail: darell.jones@flintshire.gov.uk</p>

8.00	GLOSSARY OF TERMS
	<p>British Standards 5489-1:2020 – the standards provide recommendations for the general principles of road lighting, including aesthetic, technical, operational and maintenance aspects. It also provides guidance on energy consumption and environmental impacts, and considers the design of lighting for all types of highways, public thoroughfares and pedestrian and cyclists subways and bridges. It also covers the design of lighting for urban centres and public amenity areas, including lighting relating to smart cities</p> <p>British Standards 7671:2018 (18th edition) – the standards provide recommendations for the general principles of Electrical infrastructure and the current standard used in the UK. It came into effect from 1st January 2019 and is the national standard used for electrical installation and wiring safety across domestic, commercial, and industrial properties.</p> <p>Code of Practice for Well-Managed Highway Infrastructure: The UK Road Liaison Group (UKRLG) publish a Code of Practice for Highway Authorities to following respect of highway maintenance (the Code). Whilst this Code does not place a statutory requirement on the Council, it provides Highway Authorities with guidance on highways management arrangements. Adoption of the recommendations within the Code is a matter for each Highway Authority, based on their own legal interpretation, risks, needs and priorities. The code advocates a risk-based approach to highway management, which is followed in the Council’s HAMP, which recognises resource availability and prioritises areas in</p>

the greatest need, in order to provide the maximum benefit from the available investment.

Institution of Lighting Professionals Guidance Note 22 - This is the structural inspection requirements for all asset owners who are responsible for lamp posts, traffic posts, traffic signal poles, signs, CCTV, WiFi, floral decorations or similar. The documentation states and highlights the current practices and requirements of structural testing of various structures and their scoring.