

North Lanarkshire Council Report

Environment and Climate Change Committee

Does this report require to be approved? Yes No

Ref AM/NP/VA/CM Date [09/11/22](#)

Lighting Up Parks Appraisal

From Head of Regulatory Services and Waste Solutions

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Executive Summary

This report has been produced in response to the motion passed by council in March 2022 requesting a report on lighting solutions in all our parks.

The report summarises the existing lighting provision in parks including the recent programme of renewable lighting improvements.

Information is provided on the options appraisal which informed the recent programme and provides a basis for any further investment.

Recommendations

It is recommended that the Environment and Climate Change committee:

- 1) Acknowledges the progress made providing sustainable lighting within North Lanarkshire's parks and greenspaces on key routes over the last 2 years.
- 2) Acknowledges that in general terms the provision of solar lighting is the most appropriate choice for lighting paths within our parks and greenspaces where appropriate.
- 3) Supports the intention to continue to implement sensitive and sustainable lighting solutions on a project by project basis as resources allow.

The Plan for North Lanarkshire

Priority [Improve the health and wellbeing of our communities](#)
Ambition statement (16) Transform our natural environment to support wellbeing and inward investment and enhance it for current and future generations

1. Background

- 1.1 At full council on 31 March 2022 a motion by Councillor Fotheringham and Councillor Barclay was passed, namely: *“Council notes the campaign launched by Radio Clyde calling for lighting to be installed along the main routes of public parks; and notes that this campaign is supported by a range of individuals and organisations. Providing lighting in our parks could build on the expertise gained by the Park Power initiative and renewable energy could be built into any design. This would allow greater access and use of these facilities by our residents; Public parks play a very significant role in community life; our parks should always be accessible and safe places; promote and encourage activity all year round; that there are sufficient technological solutions to provide sensitive lighting solutions which keep people safe and promotes the biodiversity in our parks and open spaces. Council therefore agrees to prepare a report in the new committee cycle to provide lighting solutions in all our parks.”*
- 1.2 To date North Lanarkshire Council has invested over £200k installing embedded ground level, solar stud guidance lights throughout six sites across North Lanarkshire, from town parks to country parks, along previously unlit routes. Specific targeted lighting is also provided in key areas such as sports areas and around car parks associated with buildings in evening use. The most recent investment being £45k of sports lighting for the new pump track being built at the Bellshill Gateway to Strathclyde Country Park.
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2. Report

- 2.1 The increased use of our parks and outdoor greenspaces over Covid-19-related lockdowns highlighted the importance of greenspace as a way of improving people's health and wellbeing.
- 2.2 In 2020/21 £50,000, from the Sustrans Spaces for People fund, was secured to improve access to our parks and green spaces to help maximise their use throughout the winter period, with the aim of supporting our community's physical and mental well-being during daytime hours and extend that use into the hours of darkness. This was achieved by implementing low level solar lighting studs in two pilot parks, Drumpellier Country Park, Coatbridge and Duchess Park, Motherwell. The routes selected were in general suitable for solar stud lighting but did still require some minor improvements to the paths such as widening where too narrow, lowering kerbs for increased accessibility, upgrading path surfaces, filling potholes, removing tree root damage and resolving flooding issues.
- 2.3 The solar studs help increase the use of greenspaces several hours into the evening when light is fading. The lights provide guidance lighting and are not intended to light areas throughout the night. A considered approach was taken to balance the statutory obligation to protect biodiversity of our greenspaces and the carbon emissions implications of mains powered lighting with the aims of providing a safer route through popular green spaces in low light conditions. Other practical factors taken into consideration prior to installing the studs included appropriate path surfacing and sufficient day light coverage along the proposed routes to charge the solar studs.
- 2.4 Following on from the success of the pilot project in 2021/22, a one-off Capital Reserves fund of £158,000 was agreed to install solar studs across more sites within North Lanarkshire. Seven sites were initially proposed but due to unsuitable surface path conditions and dense canopy cover across three of the sites,

- The Peace Garden, Cumbernauld
- Moore Park, Chryston
- Wheatholm Park, Airdie

the following four were progressed:

- Burngreen Park, Kilsyth,
- Palacerigg Country Park, Cumbernauld
- Dunbeth Park, Coatbridge
- Strathclyde Country Park, Motherwell.

Works within these four areas will be completed in October 2022.

- 2.5 To date, the process of solar light stud installation has provided the council with a valuable insight as to what would be involved with regards to delivering this lighting alternative in a larger scale. A review of what potential further options could be considered to comply with the ask of the original motion was then undertaken by the Greenspace team.
- 2.6 A key driver behind the request for additional lighting was the sense that this would make our greenspaces safer places during times of darkness. Lighting is perceived as good for reducing crime and accidents, but this is a complex scenario. It can improve safety by reducing the risk of trips and slips in the dark, however there is no clear evidence that increased outdoor lighting reduces crime levels. It may make visitors feel safer, but in some instances bright lighting of areas reduces safety and increases the risk of harm. In particular glare, the excessive contrast between bright and dark areas in the field of view, can aid rather than reduce criminal activity.
- 2.7 According to a 2011 study of London street lighting and crime, there is no good evidence that increased lighting reduces total crime and in [1997 a National Institute of Justice study](#) concluded, “We can have very little confidence that improved lighting prevents crime. A [2015 study published in the Journal of Epidemiology and Community Health](#) found that streetlights don’t prevent accidents or crime, but do cost a lot of money. The researchers looked at data on crime and road traffic collisions in 62 local authorities in England and Wales and found that lighting had no effect, whether authorities had turned them off completely, dimmed them, turned them off at certain hours, or substituted low-power LED lamps.
- 2.8 The very nature of greenspaces encourages biodiversity and is an area attractive to wildlife. Consideration must also be given to how any lighting would impact on these areas. Many species depend on the natural rhythms of day-night and seasonal and lunar changes to light levels. As a result, artificial lighting has several negative impacts on a wide range of species including disrupting their feeding, breeding and movement which may reduce and fragment populations. Some locations are particularly sensitive to light pollution and lighting schemes in these areas must be carefully planned to avoid negatively affecting wildlife and the environment.
- 2.9 An options appraisal exercise was also undertaken to establish the impacts and benefits of each type of available lighting and a summary of the outcome is detailed in the table below:

Option	Limitations	Lighting impact	Secondary Impacts	Revenue Burden	Carbon Emissions

Solar studs	Can only be installed on good quality surfacing. Only works effectively where tree cover does not block sufficient light.	Clearly defines key travel/ recreation routes. Does not provide lighting for 'tasks' such as sport.	Little impact on nocturnal wildlife.	Low replacement costs No annual running costs.	Low embodied carbon. No ongoing carbon emissions
Standard street lighting poles and sports lighting	Requires an adjacent grid connection or expensive cabling costs	Provides lighting for 'tasks' such as sport as well as lighting key routes Creates areas of high contrast linked in some studies to reduced safety	Stronger lighting has more impact on wildlife. Public perceive area to be safer, though studies show this is not evidenced in reduced crime figures	High replacement costs Utilities costs £112.60 annual running cost per unit.	High embodied carbon. Ongoing carbon emissions 13,249kg per year.
Omni Led or Autonomous off grid renewable lighting poles	Only works effectively when location is one where photovoltaics and mini turbine have good supply. Most completely off-grid products are only effective in sunnier climes than Scotland. Batteries may require a mains feed based on 40 days a year during very poor weather conditions (no sun or wind).	Provides lighting for 'tasks' such as sport as well as lighting key routes Creates areas of high contrast linked in some studies to reduced safety. Can be dimmed when no motion is sensed to reduce impacts and extend life.	Stronger lighting has more impact on wildlife. Public perceive area to be safer, though studies show this is not evidenced in reduced crime figures	High replacement costs. £24.53 annual running cost per unit for battery back-up units.	High embodied carbon. No ongoing carbon emissions for off-grid units. Ongoing carbon emissions for battery back-up units, 47.35kg per year.

2.10 In order to envisage the financial implications of extending parks lighting, costs were calculated based on providing a lit active travel route through Strathclyde Country Park on wide, well surfaced asphalt paths. The distance considered is 3604 meters (2.2miles).

- Providing solar light studs, 7m apart on either side of this route – estimated capital cost £94k

- Standard grid street lighting 30m apart on one side of the route (excluding ducting, connection to national grid supply and on-going running costs) – estimated capital cost £363k
 - Providing renewable lighting columns 25m apart would require a battery supply backed up to a mains grid supply to supply enough light during the winter months – estimated capital cost £835k
- 2.11 There are approximately 20 miles of pedestrian paths throughout Strathclyde Country Park and the above figures represent approximately 11% path coverage. The capital costs involved to solely supply lighting, not including any path surfacing works required, would range in the region of £841k for solar studs to £7.453M for off-grid renewable energy lighting.
- 2.12 These above costings are based on existing ground conditions being well maintained, drained, smooth, asphalt surfaces. Major costs would be involved in upgrading most paths within greenspaces given they are predominantly semi-bound surfaces or in poor condition. On-going revenue costs have also not been included in the above figures. An estimated cost to have the 20 miles of paths within Strathclyde Country Park upgraded to a standard width asphalt path would cost somewhere in the region of £5.764M.
- 2.13 The above financial estimate represents roughly one third of the total length of pedestrian paths within NLC's 3 country parks. Extrapolating this further, providing lighting along all pedestrian routes within all country parks is estimated to cost between £2.5m to £22.3m depending on the type of lighting improvements selected and the supporting works required.
- 2.14 With limited financial resources, spending core budget on lighting must be compared to the same spend on other park improvements. During the pilot project, passing members of the public raised questions as to whether evening lighting was in the best interests of the majority or if park users would rather see more investment into surface and drainage improvements. These route improvements make public greenspaces accessible to a wider range of residents during the day as opposed to making changes for a smaller subset of evening users.
- 2.15 During the Master planning stage of Country Parks for the Future, the public were canvassed to find out more about their priorities. There was considerable evidence that visitors wanted improved park access, but this tended to focus on the condition of existing paths, the desire for new connective paths, lack of waymarking and improvements to public transport/ active travel/ parking required to reach the greenspace. There was no real call for the parks to have lighting to provide 24 hour access.
- 2.16 In order to determine whether providing lighting in previously unlight greenspaces has significantly increased public usage, in proportion to the spend, data collection is required before and after lighting is added to the public path. An automated solution is to install pedestrian counters at site specific entrance points and collect data for a period before and after installation. Recent works at SCP will provide an opportunity to monitor increased usage over the next 12 months but this option is not possible on sites where visitor numbers were not monitored before lighting was installed.
- 2.17 The current 5-year capital budget for the Country Parks for the Future programme is less than £5million, considering that lighting up key paths has been estimated to costs between £2.5m to £22.3m, prioritising increased lighting provision over other

improvements identified during the community consultation would severely impact on the rest of the programme delivery.

- 2.18 In summary therefore it is the recommendation from the Greenspace Team that solar studs are selected as the most effective option for the general lighting of our paths within parks and greenspaces where resources allow, not only based on capital costs but also in relation to revenue costs, impacts on wildlife, carbon emissions and the lack of evidence that lighting improves safety.
- 2.19 Notwithstanding the paragraph above, there will be occasions where certain areas require additional lighting - routes which provide active travel links, shortcuts in busy areas, very high traffic recreational routes and specific area-based activities such as sports pitches. Lighting requirements for these areas will be carefully considered on a project by project basis and funds sought to continually build on the improvements made to date.
- 2.20 The next proposed lighting improvement project involves trialling combined street lighting, public Wi-Fi, CCTV and sensor technology installations at Palacerigg and Strathclyde Country Parks. The units under consideration contain their own individual solar arrays and mini wind turbines which generate around 60% of the electricity required for normal operation.
- 2.21 The Greenspace Team are part of the Scottish Park Managers Forum, facilitated by Greenspace Scotland, which meets regularly to discuss a range of relevant operational issues and keep members updated on the latest developments in the field. Parks lighting was the topic of a meeting earlier this year and the forum provides an ideal opportunity to consider best practice and learn from any experimental developments. Studies and research are ongoing throughout the UK looking into the wider impact outdoor lighting has on human behaviour, wildlife and the wider environment in general to provide best practice guidance for those seeking to light up greenspaces and the outcome from this will be incorporated into future developments.

3. Measures of success

- 3.1 Increased public use of key routes in low light as monitored via people counters in Strathclyde Country Park.
- 3.2 Consideration of the most suitable lighting solution for park improvement projects on a case by case basis bearing in mind anticipated public usage levels, visitor safety, carbon emissions and biodiversity impacts.
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5. Impacts (<http://connect/report-template-guidance>)

<p>5.1 Public Sector Equality Duty and Fairer Scotland Duty Does the report contain information that has an impact as a result of the Public Sector Equality Duty and/or Fairer Scotland Duty? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, please provide a brief summary of the impact? If Yes, has an assessment been carried out and published on the council's website? https://www.northlanarkshire.gov.uk/your-community/equalities/equality-and-fairer-scotland-duty-impact-assessments Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>5.2 Financial impact Does the report contain any financial impacts? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, have all relevant financial impacts have been discussed and agreed with Financial Solutions? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, please provide a brief summary of the impact? No recommendations for additional spend on park lighting are made.</p>
<p>5.3 HR policy impact Does the report contain any HR policy or procedure impacts? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, have all relevant HR impacts have been discussed and agreed with People and Organisational Development? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, please provide a brief summary of the impact?</p>
<p>5.4 Legal impact Does the report contain any legal impacts (such as general legal matters, statutory considerations (including employment law considerations), or new legislation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, have all relevant legal impacts have been discussed and agreed with Legal and Democratic Solutions? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, please provide a brief summary of the impact?</p>
<p>5.5 Data protection impact Does the report / project / practice contain or involve the processing of personal data? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, is the processing of this personal data likely to result in a high risk to the data subject? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, has a Data Protection Impact Assessment (DPIA) been carried out and e-mailed to dataprotection@northlan.gov.uk Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>5.6 Technology / Digital impact Does the report contain information that has an impact on either technology, digital transformation, service redesign / business change processes, data management, or connectivity / broadband / Wi-Fi? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If Yes, please provide a brief summary of the impact?</p>

The report outlines progress on Proof of Concept work on utilising renewable energy lighting and Wi Fi provision in parks.

Where the impact identifies a requirement for technology, has an assessment been carried out (or scheduled) by the Enterprise Architecture Governance Group (EAGG)?

Yes No

5.7 Environmental / Carbon impact

Does the report / project / practice contain information that has an impact on any environmental or carbon matters?

Yes No

If Yes, please provide a brief summary of the impact?

The report recommends renewable lighting options as the preference for any new projects to contribute to the transition to net zero

5.8 Communications impact

Does the report contain any information that has an impact on the council's communications activities?

Yes No

If Yes, please provide a brief summary of the impact?

5.9 Risk impact

Is there a risk impact?

Yes No

If Yes, please provide a brief summary of the key risks and potential impacts, highlighting where the risk(s) are assessed and recorded (e.g. Corporate or Service or Project Risk Registers), and how they are managed?