

# Submission on behalf of “Friends of Mayo Dark Skies” to ‘Ireland 2040 Our Plan’

## Draft National Planning Framework

Written and submitted by Georgia MacMillan October 2017

### Background

There is no doubt that artificial lighting has its place in our world and is invaluable to our businesses, homes, roads and recreation. However, when used inappropriately or excessively, artificial lighting can cause light pollution. Many of us are not aware that light pollution has adverse effects on the environment, our health, biodiversity, and our climate (through energy waste).

In the UK over 80% of the population can no longer view The Milky Way from their home due to light pollution. In Ireland, over 45% of us have also lost sight of this natural night sky phenomenon and this figure is rising due to the increase in domestic, commercial and public lighting over recent years.

The impact of such wasted energy not only affects our view of starlight from above, but can interfere with our health and wellbeing by impacting our sleep patterns, circadian clock and melatonin production.

Our Biodiversity, wildlife, trees and insects are also affected by the interruption of our natural night and daylight cycles with excessive artificial light at night.

Ireland is home to two internationally recognised dark sky places; Kerry International Dark Sky Reserve and Mayo International Dark Sky Park. Both have been awarded a gold tier for the quality of their night skies, free from light pollution and are important assets of natural night sky heritage. Without preserving such dark sky places, there is a real risk of losing our natural night skies to light pollution across the country.

Encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

### Irish Facts and Figures\*

- Unmetered electricity (public lighting) accounts for over 30% of a local authority budget.
- 16% of residential electricity is used for lighting
- equivalent to 195W or 20% of an electricity "unit"
- ≈ twice the energy of a modern wide-screen tv
- Costs €233 million annually, 71 ktonnes of CO<sub>2</sub>
- Per household Costs €230/year, ≈5 kg CO<sub>2</sub>

\*Source TCD School of Physics

In Ireland, between 1992 and 2010 there was a +20% increase in light level across most of the country as determined from satellite measurements due to increased development during the boom years. Growth of public lighting in the republic of Ireland is 10x faster than that of Northern Ireland.

### **General Comments on The Draft National Planning Framework**

The Draft National Planning Framework currently makes no mention of Light Pollution or preservation of Night Sky heritage. We request inclusion in the following areas:

#### *8.4 | Creating a Cleaner Environment for a Healthy Society*

Light pollution is a threat to creating a cleaner environment for a Healthy Society and therefore needs to be presented to the same extent as Noise Pollution, Air Quality and Water Quality. We recommend that a case study also be included to demonstrate the tranquillity and wellbeing benefits from time spent away from artificially lit environments such as Mayo Dark Sky Park.

#### *4.6 | Planning and Investment to Support Job Creation*

#### *7.4 | Co-ordination of Investment in Infrastructure*

#### *8.3 | Protecting Conserving and Enhancing our Natural Capital*

Within the above headings, natural nightscapes should be included as part of our natural heritage and duly recognised for preservation. Our landscapes are noted yet our nightscapes are not and are at risk from the rapid growth in artificial lighting.

## Recommendations for inclusion in National Planning Framework

Responsible lighting should be included in planning by all local authorities.

The UK's CPRE group produced the following 9 recommendations for Local Authorities based on the results of their report entitled "Shedding Light" and a similar guideline would offer a variety of solutions for Ireland to reduce its current state of light pollution.

**1**

### Light pollution policy

All local authorities should have a policy to control light pollution in their Local Plan, in line with the National Planning Policy Framework and the associated National Planning Practice Guidance on light pollution. This should include identifying existing dark areas that need protecting.

**2**

### Street lighting policy

Local authorities should consider preparing a Street Lighting Policy, which could include Environmental Lighting Zones to ensure that the appropriate lighting levels are used in each zone, with very strict requirements applying in identified dark areas.

**3**

### Part-night lighting schemes

We encourage local authorities to investigate how part-night lighting schemes (e.g. switching off between midnight and 5am) or dimming could work in their areas, including examining the cost, energy and carbon savings. This should be done in full consultation with the local community.

**4**

### LANTERNS research project

All local authorities who are switching off or dimming street lighting should monitor crime and accident statistics and consider taking part in the Institution of Lighting Professionals/LANTERNS research project which aims to quantify any effects of changes to street lighting on road traffic accidents and crime.

**5**

### LED lighting

Local authorities should give careful consideration to the type of Light-Emitting Diodes (LED) lighting they use and consider the potential impacts that higher temperature blue rich lighting has on ecology and on human health.

**6**

### Targets for replacing lights

Local authorities with responsibility for street lighting could set targets for replacing all their street and road lights with less light polluting types, such as full cut off flat glass lamps.

**7**

### Testing new street lighting

New street lighting should be tested 'in situ' before a lighting scheme is rolled out across a wider area to ensure that it is the minimum required for the task and does not cause a nuisance to residents.

**8**

### Preserving dark skies

Local authorities should have a strong presumption against new lighting in existing dark areas, unless essential as part of a new development or for public safety reasons that have been clearly demonstrated.

**9**

### Highways Agency guidance

The Highways Agency should review the lighting section of the Design Manual for Roads and Bridges, which is used to design motorway and trunk road lighting, to ensure it remains relevant for local authorities.

Environmental Zones - It is recommended that Local Planning Authorities specify the following environmental zones for exterior lighting control within their Development Plans.

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark	UNESCO Starlight Reserves, IDA Dark Sky Parks
E1	Natural	Intrinsically dark	National Parks, Areas of Outstanding Natural Beauty etc
E2	Rural	Low district brightness	Village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Small town centres or suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

We recommend that the following key points are promoted for adoption for new/retrofit installations:

- Colour Temperature /Kelvin - To avoid sky-glow, streetlights should have a colour temperature of 2700 or less as a default specification. Exceptions should be justified. New technology such as Narrow band amber lighting to be brought into Ireland (as recommended by the National Optical Astronomy Observatory).
- Full cut-off fixture (FCO) - Only Full Cut-Off lights should be used for lighting streets. These provide improved spread along the street, and prevent light being wasted into the sky. Because they are better directed, it is often the case that fewer FCO lights are required compared to lighting with lenses. The effects of non-cut off streetlights are illustrated below.

