

The Light-Efficient Community Kit - Contents

This 'kit' includes a number of documents intended to help anyone who wishes to fight light pollution and its effects in his/her community. These materials were developed to help our association educate our council and members of the community about the tremendous energy waste and negative effects on human health, safety, security, as well as local flora, fauna and the environment. It also addresses the huge costs in carbon footprints and land, air and water pollution created by power plants serving the community.

Realizing that light pollution is just the visible tip of the iceberg, one also must see that solving the light pollution problem is also a great way of defining and solving many other energy-related problems that affect our communities and surrounding environment.

The Kit is made up of 'handouts' (documents, maps and graphics) that succinctly and directly present the background to the development of this kit and the various problems associated with light pollution and its effects as well as actions to take. The handouts provide information in an easy-to-read, easily to understand manner. They are based on the results from various aspects of the issue. Much research continues to go on in the areas related to light pollution, especially those related to human health and environmental effects. Surveying the results, one finds that there is much support for the conclusions from initial research. As well, one begins to become much more aware and concerned about the effects of artificial

light at night, especially the effects on humans, animals and plants.

Contents of the Kit:

A. The Light-Efficient Community (LEC) – A Win-Win for Dark Skies and Communities Alike

This handout provides background information on the development of the Light-Efficient Community concept and how it provided our group with the path that enabled us to get the ear of city council. It also indicates how we got interim changes that stopped the continued deployment of antiquated lighting. It also saw the creation of a policy committee that developed a new lighting policy which will make the city's lighting throughout its roads and facilities light-efficient and much more effective and cost-efficient.

B. The Light-Efficient Community - Introduction

This is a four page handout which provides an quick overview of a LEC. It describes the goals of a Light-Efficient Community, examples of light pollution in a community and how the community can minimize its light pollution. It contains an Introduction, What is a Light-Efficient Community?, Advantages of a Light-Efficient Community, Examples of Light-Efficient Communities, Five Steps to a Light-Efficient Community, Urban Centres Waste Light and Electrical Energy, Streetlights: The Good, the Bad, The Ugly and the Totally Ridiculous! - types of streetlighting.

C. Guide to Creating the Light-Efficient Community (LEC)

This document provides vital information for anyone attempting to create a LEC in their community. It outlines a process that has been used to create a LEC in a large city and in other municipalities. Following the steps and procedures in the Guide will help to increase your chances of success in getting local councils to immediately cease the installation of light polluting luminaires, start the process of creating a local LEC Policy for the community, educate the community as to the goals of the program, the processes to be used, the effects to be expected and the outcomes in terms of energy/cost savings, reduction in light pollution, improved night seeing, safety and security as well as the creation of an enhanced night living environment for people, animals and plants.

D. Better Lights for Better Nights

This excellent, one-page, ‘free-for-use’ handout provides graphic examples of unacceptable and acceptable lighting fixtures for use by homes, businesses and industries throughout the Light-Efficient Community.

E. Edmonton, Alberta Light Dome – full page photo

This photograph is a perfect example of the huge ‘light dome’ that covers the city of Edmonton, Alberta and most communities in North America. These light domes can extend hundreds of kilometers into the surrounding countryside, affecting the night

environment well outside our communities.

F. LED Lighting Handout

This handout provides reasons why towns and cities should consider employing full cut-off LED streetlights for roads and area lighting.

G. Light Pollution – Effects on Astronomy

This handout provides information on how light pollution affects the science and teaching of astronomy.

H. Light Pollution – Effects on Culture

Almost all cultures on earth have some tie to the night sky. These ties are represented by myths, creation stories, literature, visual arts, music, etc. Light pollution serves to cut our ties to these various cultural aspects of our societies by preventing us from seeing the very source of inspiration – the dark night sky.

I. Light Pollution – Effects on Energy Consumption

This handout provides statistics for energy use and CO₂ production in the province of Alberta, relating consumption to the problem of wasted energy, CO₂ production, increased carbon footprint, etc.

J. Light Pollution – Effects on Health

Light at night is one of the most insidious aspects of contemporary society as it promises safety and security while seeping into our homes causing health problems that range from breast and prostate cancer to sleep-deprivation and its health-related, psychological, physiological, social and work problems.

K. Light Pollution – Effects on Science and Education

How light pollution affects our attempts to carry on science and science education.

L. Light Pollution - Lighting and Crime

Most community residents are concerned about any change to the lighting in their communities, but the main concern has to deal with how the change will increase the chances of crime and reduced security. Many myths exist about lighting and crime and these are covered. Light-Efficient Communities improve safety and security by using lighting technologies and techniques in the most appropriate manner thus improving on these two aspects of lighting use.

M. Light Pollution – The Problem of Glare

One of the most disturbing aspects of light pollution is the problem of glare – reducing the ability to see from light sources shining directly into one’s eyes.

N. Light Pollution – The Problem of Light Trespass

Many of the problems associated with artificial lighting results from light trespass. Few communities take notice of this problem nor have policies restricting light trespass. Light trespass is also a major source of light pollution, wasting light and energy in the process.

O. Light Pollution Map - Alberta

This map, a small section of a world-wide map of city lights at night, well illustrates the massive amounts of light pollution and the far-ranging areas affected throughout the province of Alberta. There is literally no part of the southern half of the province not affected by light pollution.

P. Non and Semi-cutoff Street Lighting Fixtures

Photographs and graphics illustrate how these fixtures cause light trespass and light pollution.

Q. North America Light Pollution Map

This excellent, effective map shows light polluted areas throughout North America and the levels of pollution found in the areas surrounding town and cities.

R. Introductory Letter to Council

This document provides a draft example of a letter that may be sent to your council to initiate the process of establishing a light-efficient community.

It contains the essential information you should include and allows you to edit the contents to make the letter more appropriate to your particular circumstances.

S. The LEC Community Coordinator (LECCC)

In order to increase understanding, eliminate misunderstandings and educate citizens as to the upcoming changes in community lighting, policy and bylaws, council should create a position of LECCC. This document briefly describes the job description and duties of a person chosen to work with the council, the local LEC Policy Committee and the citizens of a community. This person becomes the central point for creating and distributing LEC-related materials, answering questions and gathering information from the community in which he/she works. The LECCC may be a temporary job but the proper qualifications are essential for the success of this position in community education.

T. Desirable Coverage of Full Cut-Off Lighting

This graphic illustrates the way in which full cut-off LED streetlighting focuses most of the light onto the sidewalks and street while producing only minimal light trespass to the side of the roadway.

U. Light Pollution PowerPoint Presentation

This PowerPoint presentation is provided in 'production' mode. The intent is that the user will not only be

able to review the content him/herself for his/her own education, but use and modify the content for audience presentations to raise awareness of light pollution, its causes and effects.

As well, the user may borrow slides from the material to use along with his/her own production or incorporate his/her own slides into the production to suit his/her own purposes, localize photos and data, etc. (Individual photos may not be removed from the presentation for any other purpose.)

The English content of the presentation may be translated into other languages to support the fight against light pollution. If you wish to do a translation, please contact the author, Rod E. Mc Connell at rodemcc@shaw.ca

The materials have been put in the public domain so that they may be easily copied, distributed, used and modified to ensure the maximum impact for the particular audiences the user has in mind. All rights are reserved.

Of course, the user may develop whatever audio components he/she wishes to supplement or complement the visual materials in the presentation for his/her use in fighting light pollution.

It would be preferable that the user provide the presentation (modified or not) along with any particular changes for his/her area, free of charge and restraint for any others who wish to use it in fighting light pollution and energy waste. Pass it along!

NOTE: Without notice, these materials are being upgraded, modified and added-to all the time at the reserved prerogative of the author.