

February 18th, 2005

Yorkton City Council
37 - 3rd Avenue North
Yorkton, Saskatchewan
S3N 2W3

In Consideration of a Light Pollution Abatement Bylaw for the City of Yorkton

Mayor DeVos and Council:

The mere mention of pollution usually sends all but the most ardent environmentalists scurrying for cover; whatever has to be cleaned up, it's invariably expensive. So, when the opportunity comes to improve quality of life, increase citizens' safety and decrease air pollution while actually saving you real money, it should be welcomed. Curtailing light pollution not only improves the environment, health and safety, it saves real dollars, and the only cost is a change of attitude.

A common source of atmospheric pollution is that caused by the burning of fossil fuels by the power plants which provide our electrical needs, including lighting. Night lighting is totally necessary for both convenience and safety; we need light to be able to see our way and to feel secure, both in residential and in public areas. However, up to 70% of the light used for nighttime light in most older technology fixtures, such as the fixtures employed by the City for street lighting, is wasted by allowing it to escape sideways and upward into the sky, in directions where the light is not used.

Besides the process of creating power for lights, indiscriminate lighting itself can cause environmental pollution. Light that causes *glare* can reduce visibility for drivers and reduces everyone's vision in general. Light overshooting its intended target can create light *trespass*, such as streetlamps or sports venue lights that shine into your bedroom windows all evening or night. Light misdirected above the horizontal *pollutes* the sky above cities, allowing you to spot the location of Yorkton at night from 70km away, but wiping out people's enjoyment of the night sky. It costs just as much to light the sky *above* a streetlamp as it does to light the ground beneath it, but there is no benefit whatsoever for doing so. It is 100% *waste*. A well-designed fixture that directs all of its light where intended allows you to use lower wattage lamps, thus providing *better lighting at less cost*.

Yorkton's urban lighting habits are headed in the wrong direction at an accelerated pace. Overly intensive lighting, such as that at the *Kawkewistahaw* service station on West Broadway can pose a safety hazard to drivers who have their night-vision reduced for long periods after they leave the gas bar, and to passing motorists because of the intense glare. The lamps at the new Liquor Board outlet downtown look great in the daytime, but produce large amounts of glare and distraction for motorists at night, not to mention throwing half my tax dollars up into the sky. Incidentally, these sit in sharp contrast to the properly shielded fixtures in the adjacent Cornerstone Credit Union parking lot. An unshielded floodlight illuminating an outdoor ice sheet in Columbian Park on Circlebrooke south also throws a blinding light into the east-facing

windows of the residences of Regent Bay, and on cold nights, a bright vertical beam up into the sky that can be seen from Broadway. Not only is this light annoying when the rink is in use, it blazes away whether anyone's skating or not. In the summer, similar ill-designed floodlights illuminate empty tennis courts long into the night, rain or shine.

The most recent example of bad lighting choices would be the new lighting fixtures being installed outside the *Gallagher Centre*. These 'Jekyll & Hyde' fixtures begin with a good design which throws all their light downward, but then incorporates a reflector which then scatters the beam in all directions, including up into the sky. As if we're not already spending enough on the Centre's renovations, less than half of the light from these fixtures actually falls on the walks and roadways they are supposed to illuminate.

Besides the detrimental effects of glare and light trespass, excess light in our nighttime environment has been linked to sleeping disorders, the death of migratory birds and the increased incidence of crime (the public perception that crime diminishes with more light is false; in fact, the opposite is true). Across Canada, more than a billion dollars annually is simply wasted through lost light that shines sideways or up; wasted light that is not used at all. The thing is, light pollution and its associated problems can be stopped today. What we need is to place quality before quantity, and this requires only that lights be pointed or shielded so that they shine *only where needed*.

Adopting light pollution abatement policies is not radical. Cities in more than 60 US states have outdoor lighting ordinances. La Salle, Quebec, Richmond Hill, Ontario, as well as Canmore, Calgary, Elkwater and Okatokes, Alberta all have adopted light pollution bylaws. Closer to home, however, we are, so far, missing the boat. For example, the inappropriately named *Saskatchewan Department of Energy Conservation* is mandated to develop energy alternatives, but has no plans regarding energy conservation measures. The one bright light (so to speak) is our parks: Alberta Parks is considering making all of their provincial parks Dark Sky Preserves, and Sask Parks is destined to follow. Cypress Hills became a Dark Sky Preserve in 2004. While we need a national policy on light pollution abatement, initial strides can be made locally until that happens. We need to stop using fixtures and placing lights in ways that waste light either sideways or up. We need to stop creating *light pollution* of the night sky, eliminate *light trespass* into windows at night, *light clutter* and *dangerous glare* on our roadways. We need to stop polluting urban and rural wildlife habitats, and we need to reduce crime. An effective light abatement program saves dollars immediately and continues to save dollars every day that inefficient light sources are not allowed to operate.

Light pollution abatement always is a two-part plan. The first is to stop the spread of light pollution by enacting responsible outdoor lighting guidelines for municipal, commercial and residential lighting. Such guidelines have already been developed by the International Dark Sky Association (IDA) as well as many urban authorities, so one does not have to re-invent the wheel. Only the *desire* to adopt these guidelines needs to be embraced.

The second part of the plan is a retrofit program, a policy that is self-funding through immediate energy savings. For example, the City of Calgary implemented a light pollution reduction program simply because the math made sense. With an investment of \$5,300,000 to change 41,000 poorly designed inefficient streetlights, Calgary saves \$2,000,000 annually in energy costs... a fully funded payback in only 2.5 years! They will also be responsible for the reduction of 16,000 tonnes of polluting hydrocarbon emissions per year due to reduced energy consumption. The money saved will be put toward replacing more old streetlights, decreasing pollution and costs even further.

The Royal Astronomical Society of Canada, Regina and Saskatoon Centres, have begun a campaign against light pollution within Saskatchewan. Last fall, as previously mentioned, the Cypress Hills Inter-provincial Park (Saskatchewan & Alberta sides, and including the national historic site of Ft. Walsh) signed a historic agreement declaring a Provincial Dark Sky Preserve to save energy and save the night sky. Other park authorities in Canada and the US have taken notice and are looking at similar regulations. However, there is no reason whatsoever that we should have to travel to remote parks to at least notice that there *is* a night sky, or to sleep without the window shades closed, or to be able to walk and drive more safely at night.

My personal interest in seeing the City adopt a responsible lighting policy is two-fold: first from the position of being a taxpayer who objects to any wasteful spending of my tax dollars, and secondly, from the position of an amateur astronomer who used to enjoy reasonable good views of the night sky from my back yard. While not everyone appreciates the night sky, the very real effect of poor lighting on taxpayers' wallets should make this issue a concern to all citizens of the City, especially as it is simply a matter of making good choices.

I look forward to seeing the City at least place a moratorium on any new street and commercial lighting that does not meet light pollution abatement standards until a full light abatement policy can be developed and implemented. To continue as we are is not only wasteful, it's irresponsible.

Further sources for information on light pollution and light pollution abatement are attached.

Respectfully,

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Light Pollution Informational Resources

Saskatchewan resource:

The Saskatchewan Light Pollution Abatement Committee
The Royal Astronomical Society of Canada Saskatoon and Regina Centres
PO Box 317, RPO University
Saskatoon SK S7N 4J8
(<http://www.ras.sk.ca/lpc/lpc.htm>)

Internet resources:

Royal Astronomical Society of Canada (<http://www.rasc.ca/light/home.html>)

International Dark-Sky Association (<http://www.darksky.org>)

Illuminating Engineering Society of North America (IESNA) (<http://www.iesna.org>)

How-to Guide to Effective Energy-Efficient Street Lighting - for Municipal Elected / Appointed Officials (<http://www.rpi.edu/dept/lrc/nystreet/how-to-officials.pdf>)

How-to Guide to Effective Energy-Efficient Street Lighting - for Planners and Engineers (<http://www.rpi.edu/dept/lrc/nystreet/how-to-planners.pdf>)