

## **Municipality of Chatham-Kent**

### **Community Development**

#### **Planning Services**

**To:** Mayor and Members of Council

**From:** Gabriel Clarke, MES, BA, RPP Candidate  
Manager, Growth & Sustainability

**Date:** April 6, 2023

**Subject:** Greenhouse Lighting By-law

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#### **Recommendation**

It is recommended that:

1. The proposed By-law to regulate the lighting of greenhouses, attached as Appendix A to this Report, be approved.

#### **Background**

At its December 14, 2020 meeting, Council passed the following motion regarding greenhouse lighting:

*“Whereas the greenhouse industry is an important part of agriculture today and in the future in Chatham-Kent, and Whereas it is important to ensure greenhouse owners are able to be successful, while simultaneously promoting the existence of dark night sky in the Municipality of Chatham-Kent. Therefore Be it resolved that staff return to council with a report on the subject of greenhouse light emissions. And, That this report include a summary of engagement with industry stakeholders, members of the public, and neighbouring communities with regard to greenhouse regulations and That this report provide recommendations with options to proactively address any potential light nuisance from greenhouses in CK. and That this report return to council no later than April 1st 2021.”*

At its May 10, 2021 Meeting Council received a Report titled [“Planning for Large Scale Development”](#). The Report proposed the following two focus areas for addressing Council’s Motion on greenhouse light emissions:

- Adopt regulations for greenhouse lighting abatement.
- Optimize land-use policies related to large-scale greenhouse development.

During this meeting, Council also approved an Interim Control By-law to control large-scale greenhouse development in proximity to urban settlement areas (By-law 77-2021).

At its May 9, 2022, Council received an additional [Report](#) on the issue of greenhouse light emissions. The Report provided justification in support of the recommendation to extend the Interim Control By-law for an additional year, and provided additional information on each of the two focus areas previously identified in the May 10, 2021 Report. The Report outlined a number of utility projects that are currently under way in the region and the impact that these will have in terms of affecting future opportunities for greenhouse development in Chatham-Kent. The Report also provided an update on the development of greenhouse lighting regulations for Chatham-Kent.

During this meeting, Council approved a one year extension to the Interim Control By-law, which is now scheduled to expire at 11:59 p.m. on May 10, 2023. According to Section 38 of the Planning Act, no further extensions of the Interim Control By-law are permitted.

The issue of land use policy associated with greenhouse development is the subject of a Report to Council that is included in the April 24, 2023 Council Meeting Agenda.

The issue of greenhouse lighting regulations is the subject of this Report.

## **Comments**

### **Artificial Greenhouse Lighting**

The use of artificial lighting has become a widespread practice in the greenhouse sector. Artificial lighting significantly boosts greenhouse plant productivity by extending the times where photosynthesis can occur and by providing greenhouse operators with more control over the various stages of plant lifecycle. In short, artificial lighting allows greenhouse operators to boost productivity. Throughout this time, lighting technologies have also progressed significantly. For example, modern Light Emitting Diode (LED) lighting technology is more energy efficient than older lighting technologies and allows greenhouse operators to vary the light spectrum and light intensity based the specific stages of plant growth, further enhancing productivity.

The high density of plants in greenhouse agriculture naturally creates excess moisture which needs to be vented in order to prevent the built up humidity and associated heat from damaging or even killing the plants being grown. As a result, the use of ceiling vents to allow excess heat and humidity to escape is a normal practice associated with greenhouse agriculture.

As more greenhouses have incorporated artificial lighting into their operations, so has the volume of light that emanates from these facilities into the nighttime sky and on to adjacent properties. The negative impact that artificial lighting can have on quality of life is particularly evident in areas that feature a high concentration of greenhouses located in proximity to other sensitive land uses, such as residential. In response to this, the

greenhouse sector has developed a variety of retractable blackout curtain systems which allow natural light to enter the greenhouse during the day and prevents artificial light from escaping the greenhouse at night. The technical limitation with blackout curtain technology is it cannot prevent all light from escaping during the venting process, which involves physically opening ceiling vents and creates an opening where light can also escape the greenhouse. So even with a full blackout curtain system in place, artificially lit greenhouses inevitably emit some light throughout the regular course of operations.

### **Municipal By-laws to Regulate Light Emissions from Greenhouses**

Over the last few years, two Ontario municipalities with high concentrations of greenhouse development – the Town of Kingsville and the Municipality of Leamington – have introduced By-laws to regulate light emissions from greenhouses. These By-laws are described below.

#### **Kingsville's Greenhouse Odors and Light Nuisance By-law**

On October 26, 2020, the Town of Kingsville introduced an Odors and Light Nuisance By-law to regulate light and odor emissions generated by greenhouse operations. The By-law features the following elements:

- A general prohibition on the emission of light used for the cultivation of plants onto adjacent properties or into the dark night sky whenever doing so creates a nuisance.
- A general prohibition on the emission of odors emanating from greenhouses used to grow cannabis whenever doing so creates a nuisance.
- Does not specify the means that are to be employed to manage light or odor emissions.
- Does not provide specific times of the day when light or odors must be controlled.
- Employs a set two-tier fine-based enforcement mechanism with lower fines for individuals and more substantial fines for corporations found to be in contravention of the By-law.

Kingsville's Odors and Light Nuisance By-law remains unchanged since it was approved in 2020 and can be accessed [here](#).

#### **Leamington's Greenhouse Lighting By-law**

On December 8, 2020, the Municipality of Leamington introduced a Greenhouse Lighting Abatement By-law to regulate light emissions generated by greenhouse operations. The By-law required the installation and use of blackout curtains to eliminate light emissions from artificially lit greenhouses during the nighttime. The by-law required the full deployment of blackout curtains from one hour before sunset to one hour after sunrise to eliminate light emissions and allowed up to 10% of light to escape through ceiling vents between 2am-6am for venting activities.

Soon after it was introduced, a number of local greenhouse operators challenged the By-law through the Normal Farm Practices Protection Board (NFPPB), alleging that the By-law was attempting to over-regulate greenhouse lighting which should be considered a normal farm practice. As the case proceeded throughout 2021, the Ontario Greenhouse Vegetable Growers Association (OGVG) – Ontario's vegetable greenhouse sector association – obtained third party status.

In response, Leamington amended its [Greenhouse Lighting Abatement By-law](#) in June 2022. The amendments reflected a negotiated settlement between the industry and the Municipality which sought to balance the Municipality's goal of reducing light emissions against the technical limitations faced by greenhouse operators that were prevented from opening ceiling vents during certain times under the previous version of the By-law. The amended By-law features the following elements:

- A requirement to install and deploy full blackout curtains whenever artificial lights are used in a greenhouse between 5pm and 8am. The previous By-law required the use of blackout curtains from an hour before sunset until an hour after sunrise, allowing for seasonal variation.
- Provides two periods of time where ceiling curtains may be retracted by up to 10% for ceiling venting purposes (5pm-10pm and 2am-8am). The previous By-law provided only one period between 2am-6am.
- A reference to the Municipality's ability to apply a fine per the Provincial Offenses Act, though the By-law does not contain a specific fine schedule.
- A reference to the Municipality's ability to apply to the Superior Court of Justice for an order to cease greenhouse operations for up to 2 years if a greenhouse operator has been found, on the balance of probabilities, to have contravened the By-law.

The updated By-law continues to acknowledge the adverse community impact that can arise from excessive nighttime light emissions emanating from greenhouses. The updated By-law also considers what is currently possible with existing blackout technologies and the technical realities of growing plants with artificial lights under glass.

Leamington's recent experience suggests that while greenhouse operators have shown a willingness to limit the adverse impacts of their operations on the community, attempts to regulate greenhouse light emissions beyond that which can be accomplished through existing technology or in ways that unduly impact greenhouse productivity are likely to be challenged by the greenhouse sector.

Throughout this time, staff from the Municipality of Chatham-Kent followed the case, as the outcome had the potential to impact any regulation that might be introduced locally. Once Leamington amended its By-law, staff took the view that a sufficient period of time should be allowed to lapse before proceeding on the matter locally to ensure that no further challenges would be made against Leamington's updated By-law.

## Proposed Greenhouse Lighting Abatement By-law for Chatham-Kent

The proposed By-law (attached as Appendix A to this Report) features the following elements:

1. Defines blackout curtains as being able to eliminate 99% of light emissions (per industry standards).
2. Requires the installation of blackout curtains on the sidewalls, endwalls and ceilings of lit greenhouses.
3. Requires the use of blackout curtains between the hours of sunset and sunrise if greenhouse lights are used during those times.
4. Includes allowances for increased light emissions for ceiling venting. This permits operators to retract ceiling curtains by up to 10% for venting purposes between the times of sunset-10pm and 2am-sunrise.
5. Provides an extended phase in period (18+ months) to allow existing operators with time to comply with the regulation.
6. Establishes a multi-tiered enforcement system that includes a set fine schedule along with a reference to the Municipality's ability to apply to the Superior Court of Justice for an order to cease greenhouse operations for up to 2 years in the unlikely event of a repeated and/or particularly egregious By-law contravention.

### Areas of Strategic Focus

This report supports the following areas of strategic focus:

			
<b>Economic Prosperity</b>	<b>Healthy &amp; Safe Community</b>	<b>People &amp; Culture</b>	<b>Environmental Sustainability</b>
1.2			

### Consultation

The development of the proposed Greenhouse Lighting By-law was informed with consultations with representatives from the Ontario Greenhouse Vegetable Growers Association (OGVG) and some local greenhouse operators.

Legal Services were consulted in the development of the draft By-law document.

### **Communication**

Communication is proposed to be through the inclusion of this report on the Council agenda, related communications and a corporate press release.

### **Diversity, Equity, Inclusion and Justice (DEIJ)**

This report does not have implications related to diversity, equity, inclusion or justice.

### **Financial Implications**

There are no financial implications resulting from the recommendation.

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Reviewed by: Ryan Jacques, RPP, MCIP, Director, Planning Services

Reviewed by: Bruce McAllister, RPP, MCIP, General Manager, Community Development

Consulted and confirmed the content of the consultation section of the report by:

Dave Taylor, Director, Legal Services

Attachment: Appendix A: Proposed Greenhouse Lighting By-law