

# Environmental and Ecological Planning Advisory Committee

## Report

4th Meeting of the Environmental and Ecological Planning Advisory Committee  
March 15, 2018  
Committee Rooms #1 and #2

Attendance PRESENT: S. Levin (Chair), E. Arellano, A. Boyer, C. Evans, P. Ferguson, S. Hall, S. Madhavji, N. St. Amour, S. Sivakumar and I. Whiteside and H. Lysynski (Secretary)

ALSO PRESENT: G. Barrett, C. Creighton, J. MacKay, L. McDougall, J. Ramsay and S. Shannon

ABSENT: E. Dusenge, C. Dyck, B. Krichker, C. Kushnir, K. Moser, C. Therrien and R. Trudeau

The meeting was called to order at 5:00 PM.

### 1. Call to Order

#### 1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

### 2. Scheduled Items

#### 2.1 Environmental Assessment Act

That it BE NOTED that the Environmental and Ecological Planning Advisory Committee received the attached presentation from E. Schwartzel, Deputy Commissioner, Environmental Commissioner of Ontario, with respect to the *Environmental Assessment Act*.

#### 2.2 Victoria Bridge Environmental Assessment

That the following actions be taken with respect to the e Victoria Bridge Environmental Assessment:

a) the detailed design BE REVIEWED by one of the City of London's Ecologist Planners; and,

b) an Environmental Study Report BE REQUIRED in the Request for Proposal;

it being noted that the Environmental and Ecological Planning Advisory Committee received the attached presentation from S. Shannon, Technologist II, Transportation Planning and Design and S. Muscat, AECOM, with respect to this matter.

### 3. Consent

#### 3.1 3rd Report of the Environmental and Ecological Planning Advisory Committee

That it BE NOTED that the 3rd Report of the Environmental and Ecological Planning Advisory Committee, from its meeting held on February 15, 2018, was received.

3.2 Proposed 2018 City-Funded Environmentally Significant Areas Capital Projects - L. McDougall

That it BE NOTED that the proposed 2018 City-Funded Environmentally Significant Areas Capital Projects list, was received.

3.3 Notice of Application - City of London - Lands South of Exeter Road, North of Dingman Drive, East of White Oak Road and West of the Marr Drain

That it BE NOTED that the Notice dated February 13, 2018 from T. Macbeth, Planner II, with respect to the application by The Corporation of the City of London, relating to the lands located south of Exeter Road, north of Dingman Drive, east of White Oak Road and west of the Marr Drain, was received.

**4. Sub-Committees and Working Groups**

4.1 You, Your Dog and Environmentally Significant Areas - S. Levin

That the revised You, Your Dog and Environmentally Significant Areas brochure BE REFERRED back to the Working Group for further amendments and to report back at the next Environmental and Ecological Planning Advisory Committee meeting.

4.2 (ADDED) Green Standards for Light Pollution and Bird-Friendly Development - Fourth Draft

That the attached, revised, Green Standards for Light Pollution and Bird Friendly Development BE APPROVED.

**6. Deferred Matters/Additional Business**

6.1 (ADDED) Parker Stormwater Management Facility - Water Balance Report

That it BE NOTED that the Working Group consisting of B. Krichker and I. Whiteside will report back on the Parker Stormwater Management Facility at the next Environmental and Ecological Planning Advisory Committee meeting.

**7. Adjournment**

The meeting adjourned at 7:10 PM.

# Protecting Biodiversity in Ontario; the Environmental Commissioner's Perspective

City of London EEPAC  
March 15, 2018  
Ellen Schwartzel, Deputy Commissioner

## Overview

- Ontario's Environmental Bill of Rights
  - your toolkit
  - The municipal connection

### How Ontario protects:

- species at risk
- protected areas



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## The government of Ontario

What are its environmental responsibilities?



3

The government of Ontario has broad  
environmental responsibilities:



4

## an *Environmental Bill of Rights*

• Why?



5

## Before the *Environmental Bill of Rights*

Little transparency:

- No obligation to consult the public
- No obligation to explain decisions



6

## What is under the *EBR* umbrella?



## What is under the *EBR* umbrella?

17 ministries, including:

- Ministry of the Environment and Climate Change
- Natural Resources and Forestry
- Agriculture, Food and Rural Affairs
- Energy
- Municipal Affairs
- Housing
- Northern Development and Mines
- Transportation



## Ontario's *Environmental Bill of Rights*

Your rights to:

- Have your say on environmental decisions
- Ask for new environmental laws and policies
- Ask for enforcement of environmental rules

## Environmental Commissioner of Ontario

- Impartial
- Officer of the Legislature
- environmental watchdog

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- Impartial
- Officer of the Legislature
- environmental watchdog
- Dianne Saxe



## Ontario's *Environmental Bill of Rights*:

- Tools worth using
- Tools have limitations
- Tools + practice = better results



## Tools that have worked:

- The Environmental Registry
- Applications for Review and Investigation
- Appeals
- Environmental Commissioner's Office



## Having Your Say: the Environmental Registry



## Having Your Say: the Environmental Registry



## The Environmental Registry

- Shows the public what ministries are working on
- Lets the public comment before decisions are made
- Shows the comments of other people
- Shows how the ministry considered public comments



## What's on the Registry?

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## What's on the Registry? Example



## What's on the Registry? Example

### Canada-Ontario Action Plan for Lake Erie

- 75 day comment period (MOECC)
- Registry #012-9971
- Decision: Feb 22, 2018
- **2,205 comments**



## What's on the Registry? Example

### Canada-Ontario Action Plan for Lake Erie

#### Comments by the public:

"Any farming practices that currently favour perennial vegetation (e.g., grazing livestock, forage production) should be encouraged and practices that favour annual cropping (e.g., drainage loan programs, subsidized crop insurance) should be reduced or coupled with a requirement for perennial vegetation."



## What's on the Registry? example

### Ecological Integrity in Provincial Parks and Conservation Areas

- 90 day comment period (MNRF)
- Registry #013-1671
- Comment deadline was January 24, 2018



Photo credit: MNRF, Anishinabe Provincial Park

## What's on the Registry? Example

### Municipal Guide for Watershed Planning

- coordinate all the players
- engage the public
- Best practices for quality/quantity
- Integrate with natural heritage systems
- 160 pages





## What's on the Registry? Example

### Watershed Planning Guidance

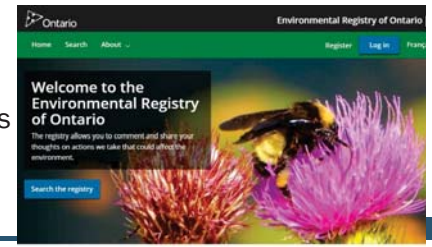
- 60 day comment period (MOECC)
- Registry #013-1817
- Comment deadline April 7, 2018



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## Registry Upgrade Underway

- Better search capabilities
- Fresh look
- Plain language
- Mobile-friendly
- Custom notifications



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## The Environmental Registry

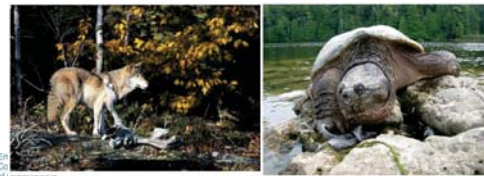
### Do public comments matter?



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## Most Comments 2016/2017

1. Moratorium on Permits to Take Water for water bottling – 21,276
2. Hunting rules for snapping turtles and other wildlife – 13,461
3. Exempting Algonquin wolves from protection – 13,251
4. Hunting rules for wolves and coyotes in northern Ontario – 12,113 (plus 200,000 signatures on petitions)



## Do Public Comments Matter?

### Decision: Ontario's Pollinator Action Plan

- Registry #: 012-6393
- 5,220 comments received (OMAFRA)
- Decision posted Feb. 14, 2017



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## Public Comment Success Story: 2016

### Proposed Changes to Wolf and Coyote Management

MNRF proposed:

- to loosen hunting/trapping rules for wolves and coyotes
- Alleged justification: predation on moose (Moose Project)
- >12,000 comments, including three petitions with >200,000 signatures
- MNRF decided not to proceed



## Public Comment Success Story: 2017



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Small Game Hunting Regulations:  
MNRF proposed streamlining and updating, Dec. 2016:

- to restrict harvests for snapping turtles



## Public Comment Success Story: 2017

Small Game Hunting Regulations:  
MNRF proposed streamlining and updating, Dec. 2016:

- to restrict harvests for snapping turtles

**Decision: March 31<sup>st</sup>, 2017**

- >13,000 comments
- MNRF decided to end hunting for snappers



## Public Comment Success Story: 2017

MNRF Decision:

“Based on public feedback, there was significant opposition to maintaining any open season for snapping turtles. Snapping Turtle is a long-lived species that reproduces slowly and is subject to other significant stressors such as road mortality. The Ministry has closed the Snapping Turtle season to help maintain populations of this species into the future.”

## Effective Registry Comments

- Do your homework
- Stay on point
- The devil's in the details
- Remember, it's a public platform

## YOU Know Your Community

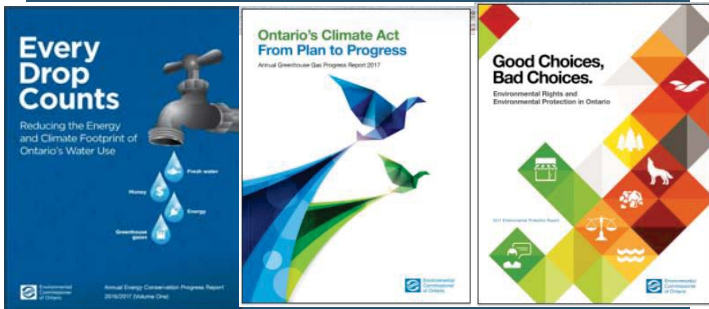
Location-specific information  
+ Contextual information =

Better Decision Making





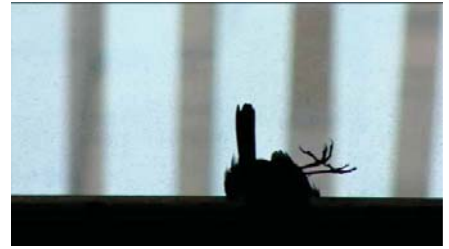
## Another EBR Tool: Our reports



37

## We flag emerging or chronic issues

e.g.  
Light Pollution



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## We flag emerging or chronic issues

e.g.  
Light Pollution

The ECO recommends:  
the MOECC publicly **clarify how it will regulate reflected light from buildings** to protect birds, now that an Ontario court has ruled that it is a contaminant under the Environmental Protection Act.  
- 2014/2015 Annual Report; p. 63



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## We flag emerging or chronic issues

e.g.  
Invasive Species



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## We flag emerging or chronic issues

e.g.  
Invasive Species

Plant Native Species:  
Purchase native plants and trees for your garden and avoid invasive plants and trees at all costs –  
2015/2016 Environmental Protection Report; p. 43



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## We flag emerging or chronic issues

e.g.  
Provincial Policy Statement is weak on protecting natural heritage:

Environmental Commissioner of Ontario Annual Report 2013/2014

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## We flag emerging or chronic issues

“Overall, the PPS is wholly inadequate to safeguard natural heritage against the irreparable damage and loss of biodiversity that inevitably accompany development.”

Environmental Commissioner of Ontario Annual Report 2013/2014; p. 143

## We flag emerging or chronic issues

e.g. No \$ for buying natural heritage lands

Ontario's budget for land acquisition:  
\$1000/year province-wide

Environmental Commissioner of Ontario Annual Report 2014/2015

## Strengths of ECO Reports

- Current info
- Ontario-focused
- Fair, independent
- Plain language

•Catalyst for change

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## Strengths of ECO Reports

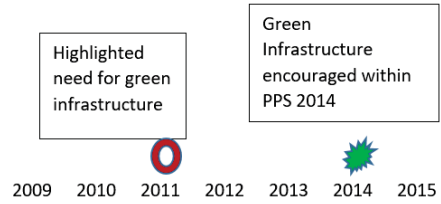
•Catalyst for change



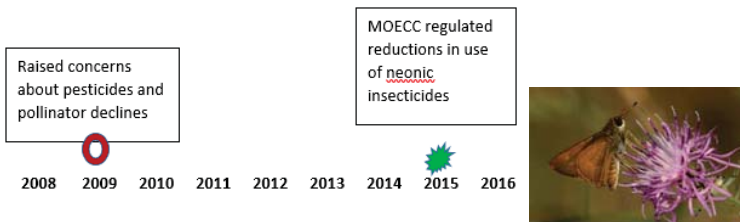
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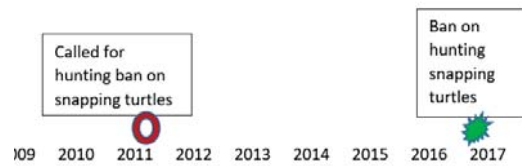
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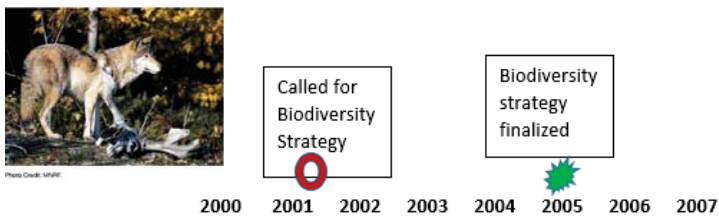
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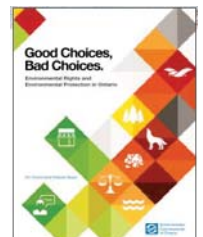
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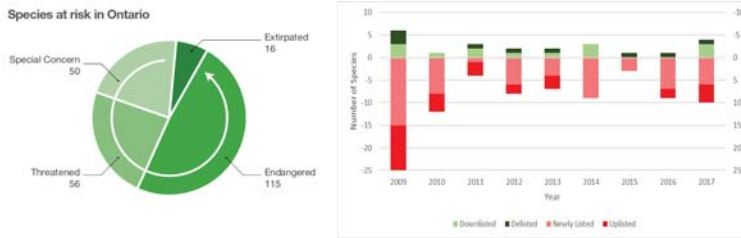
## Change Happens.....



## Species at Risk In Ontario



## 237 Ontario Species Already at Risk



## Endangered Species Act: Should Protect and Recover Species

- Flexibility tools
  - Permits
  - Agreements
  - Regulatory exemption & permit-by-Rule
    - forestry operations
    - hydro-electric generating stations
    - aggregate pits and quarries
    - ditch and drainage activities
    - early exploration mining
    - wind facilities
    - development and infrastructure

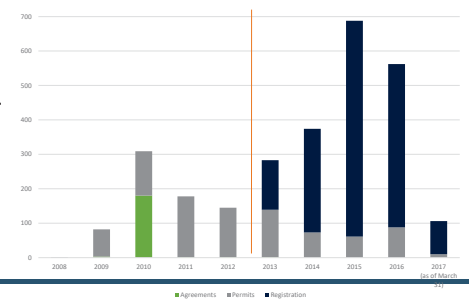


## How is it working?

- Since 2013, MNRF simplified the authorizations for harming, harassing or damaging the habitat of a species at risk
- permit-by-rule system
- Most permit-by-rule only requires proponents to minimize harm, not eliminate or compensate for it
- MNRF does not monitor compliance with permit-by-rule, nor does it assess the effectiveness of the rules

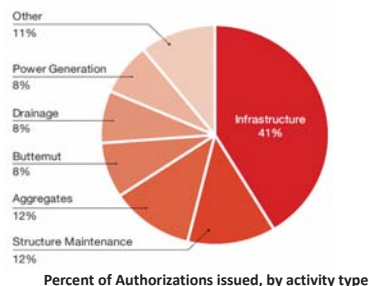
## How Have ESA's Flexibility Tools Been Used?

- ESA authorizations have drastically increased under permit-by-rule

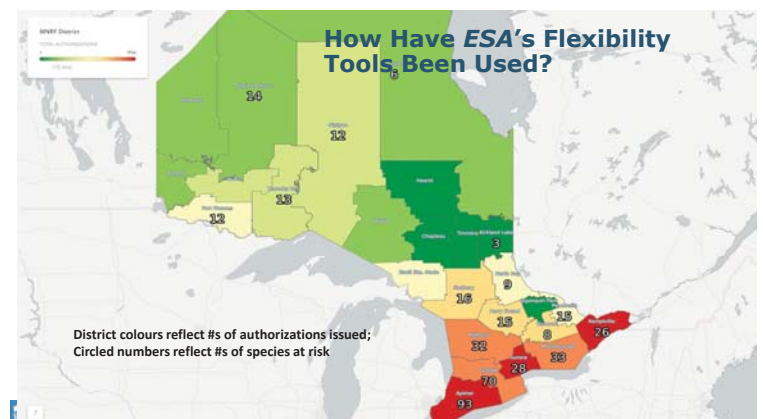


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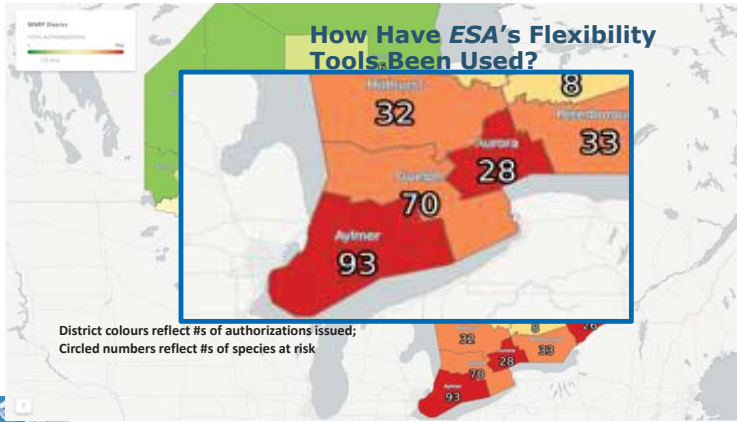
- "Infrastructure" has the largest impact on species at risk
- i.e., roads, power lines, etc.



## How Have ESA's Flexibility Tools Been Used?

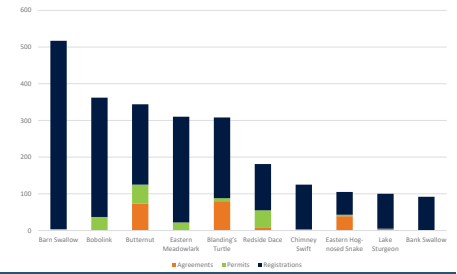


## How Have ESA's Flexibility Tools Been Used?



## How Have ESA's Flexibility Tools Been Used?

- Some species at risk are affected more frequently



## Blind Faith: The MNR Doesn't Check

- No routine compliance auditing
- Enforcement data not tracked
- No legal authority to conduct site inspections for permit-by-rule activities
- No monitoring for effectiveness



Eastern Meadowlark - Threatened

## No public information about ESA Activities

- The public is cut out of ESA decision making
- The MNR does not share information about permit-by-rule activities
- No way to appeal ESA permit decisions
  - A back-door appeal route for renewable energy projects



Blandings Turtle - Threatened  
Photo Credit: Outley McNaught

## The Problems with ESA

- 237 Ontario Species Already at Risk
- ESA Should Protect, Recover Species
- Species Getting Less Protection Under Permit-by-Rule
- Blind Faith: The MNR Doesn't Check
- Public Can't Access Information About Activities That Affect Species at Risk
- Big Changes Needed to Protect Species at Risk



Barn Swallow - Threatened  
Photo Credit: Charles Sawley Sharp

## Recommendations: big changes needed to protect species at risk

- Determine the effects of its approvals and authorizations on species at risk and publicly report on the results.
- Amend the ESA to give enforcement officers the ability to conduct inspections of registered activities to ensure compliance with rules in regulation.
- Post instrument proposals for all permits on the Environmental Registry for full public notice and comment.
- Make all species at risk approvals, including registrations, publicly accessible on Access Environment.
- Amend the ESA to create a right of appeal.





## What is a protected area?

- permanently set aside and managed to conserve nature – where plants, animals and natural processes are not negatively affected by human activities
- E.g., provincial parks, conservation reserves, wilderness areas, dedicated protected areas and national parks



Nanshobha  
– The Sleeping Giant



## Why have protected areas?



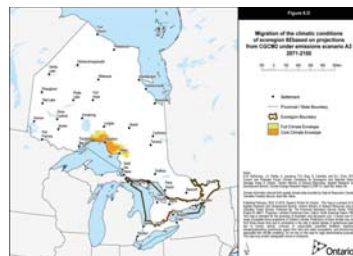
## Why have protected areas?

- Conserve habitat – habitat loss is the biggest single driver of species extinctions and extirpations
- Diversity and abundance of species is often higher within protected areas
- Safe-haven for species at risk
  - E.g., Rondeau Provincial Park is home to over 75 species at risk
- Source habitat to support biodiversity outside their boundaries
  - E.g., Algonquin Provincial Park is source habitat for eastern wolves



## Why have protected areas: climate change

- Migration corridors for species to follow shifting climatic envelopes
- Climate refugia – areas species can retreat to and persist in under future climate conditions
- Ecosystem-based adaptation (e.g., flood control)
- Carbon sequestration



## Why have protected areas?



Pukaskwa National Park holds ~23 megatonnes of carbon; Ontario buildings emit ~35 mt/year



## Commitment to protect 17% by 2020

- Canada committed to the Aichi Biodiversity Targets under the Convention on Biological Diversity
- Target 11:  
By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.



## Commitment to protect 17% by 2020

- Biodiversity: It's in Our Nature – Ontario Government Plan to Conserve Biodiversity 2012-2020
  - Ontario government commits to expand Ontario's system of protected areas and conservation lands, but does not explicitly discuss the 17% target
  - Ontario government states that it will work with existing legislation and policy to "explore opportunities for expanding the system of protected areas and conservation lands"
- The target is also endorsed in the Ontario Biodiversity Council's conservation strategy



## Why 17%?



## Where are protected areas needed?

- Improve ecoregional representation
  - Southern Ontario needs more protected areas
- Plan for connectivity between areas
- Protect biodiversity hotspots
  - E.g., Important Bird Areas
- Protect climate refugia
- Protect significant carbon sinks



## How much progress has Ontario made?

- Only 10.7% of the province is protected

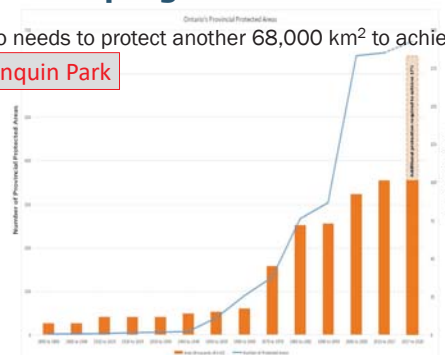
Government Regulated Protected Areas in Ontario			
Provincial Protected Areas	Number	km <sup>2</sup>	% of Province
Regulated Provincial Park	334	74,193	6.9%
Regulated Conservation Reserve	295	15,142	1.4%
Dedicated Protected Area – Regulated under PPRA	5	3,495	0.3%
Dedicated Protected Area – Non-regulated	4	8,800	0.8%
Wilderness Area	11	8	<0.1%
<b>Total Provincial Protected Areas</b>	<b>649</b>	<b>101,637</b>	<b>9.4%</b>
National Protected Areas	Number	km <sup>2</sup>	% of Province
National Park	5	2,056	0.2%
National Urban Park	1	19	<0.1%
National Marine Park	1	114	<0.1%
National Marine Conservation Area	1	10,880	1.0%
National Wildlife Areas	10	54	<0.1%
Migratory Bird Sanctuary	8	319	<0.1%
Other National Protected Area	Number	km <sup>2</sup>	% of Province
National Capital Commission Area	16	82	<0.1%
<b>Total National Protected Areas</b>	<b>42</b>	<b>13,523</b>	<b>1.3%</b>
<b>Total National and Provincial Protected Areas</b>	<b>691</b>	<b>115,160</b>	<b>10.7%</b>



## How much progress has Ontario made?

- Ontario needs to protect another 68,000 km<sup>2</sup> to achieve 17%

= 9 x Algonquin Park



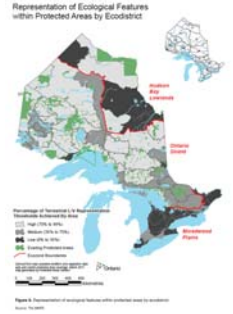
## ECO Recommendations

- The MNRF should fund the work required to inventory and assess Ontario's natural heritage areas as protected areas and other conservation lands

## ECO Recommendations

The MNRF should develop a plan to achieve 17% conservation in the province, including:

- Identifying priority lands for protection (e.g., biodiversity hotspots, improving ecoregional representation, protecting climate refugia)
- Identifying priorities for ecological restoration in the protected areas system
- Identify opportunities for co-management with Indigenous communities
- Provide financial and capacity-building support to increase protection of partially protected natural heritage areas
- Restore land acquisition funding programs



## Change Happens.....

Dear Dr. Saxe:

I want to thank you for meeting with me to discuss the 2017 Environmental Protection Report *Good Choices, Bad Choices* on October 25, 2017.

I think we had a good exchange of views and I hope you appreciated the complexity of balancing social, economic and environmental considerations in managing our natural resources.

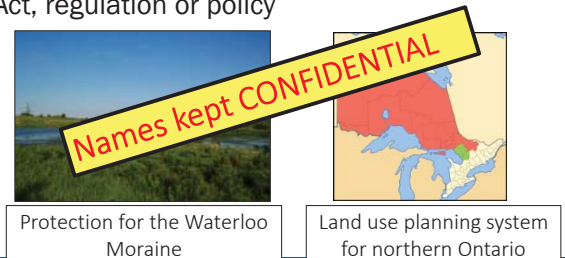
Following our meeting, I have established a project team within MNRF to review your 2017 report and advise our executive table on areas for improvement going forward. I hope this will, among other things, improve the information sharing between our offices that we agreed was necessary.

## Another EBR tool: Applications for Review

### How to Ask for New Environmental Laws or Policies

## Applications for Review

The public can also request a review of the need for a new Act, regulation or policy



## Applications for Review

Ministries accept ~ 19%  
of these requests:

## Applications for Review

Ministries accept ~ 19%  
of these requests:

- New laws
- Amended regulations
- Amended approvals

## Applications for Review Example

2015



## Applications for Review example



real-time bypass alerts for Toronto;  
to Twitter and Website; fall 2017

## Kingston now has real-time by-pass alerts

### Know Before You Go



## Another EBR Tool: Applications for Investigation

How to Ask for Enforcement of Environmental Rules





## Applications for Investigation

If you believe someone has contravened or violated a prescribed Act, regulation or instrument, you can ask the government to investigate

## Applications for Investigation

Damage to the habitat of an endangered species



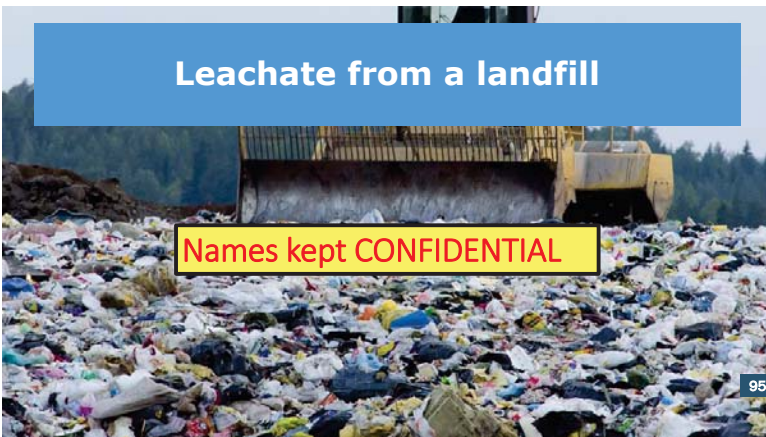
### Noise, vibration or air emissions



### Leachate from a landfill



### Leachate from a landfill



Names kept CONFIDENTIAL

## Applications for Investigation

Ministries accept ~ 37% of these requests:



## Applications for Investigation

Ministries accept ~ 37%  
of these requests:

- Charges
- Provincial Officers' Orders

## Applications for Investigation

Legislation most cited:

Environmental Protection Act (65%)

Section 14 – Prohibits discharge of a contaminant into the natural environment that causes an adverse effect, including:

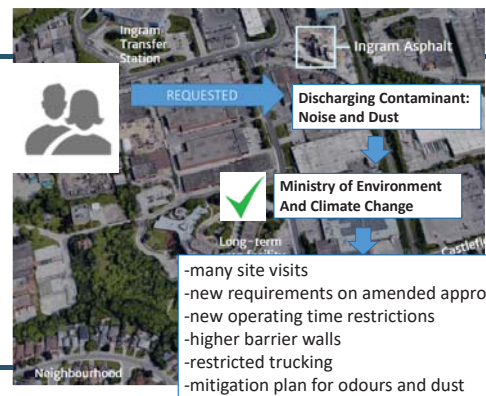
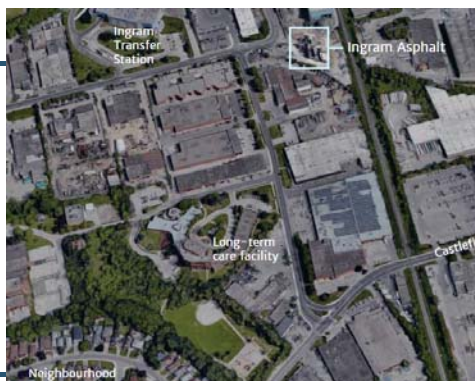
## Applications for Investigation

- Impairment of the quality of the natural environment for any use that can be made of it
- Injury or damage to property or plant/animal life
- Harm or material discomfort
- Loss of enjoyment of normal use of property
- Interference with normal conduct of business

## Applications for Investigation

- Ingram Asphalt plant 2015-2016

Toronto



### In North York, lax environmental enforcement pits neighbours against asphalt plant

Ministry of Environment allowed plant to operate for years under inadequate permit as neighbours complained about dust, noise.

By AINSLIE CRUICKSHANK Staff Reporter  
Wed., Feb. 7, 2018



### Application for Investigation (2014)



### Application for Investigation



### Applications for Investigation Example

2015



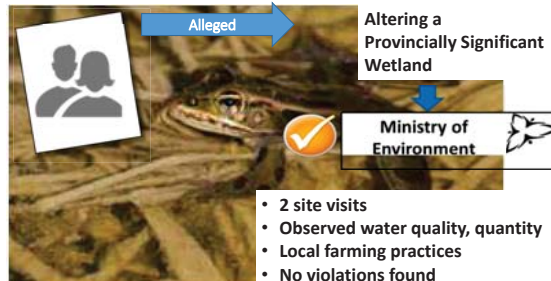
### Applications for Investigation Example

2015



### Applications for Investigation Example

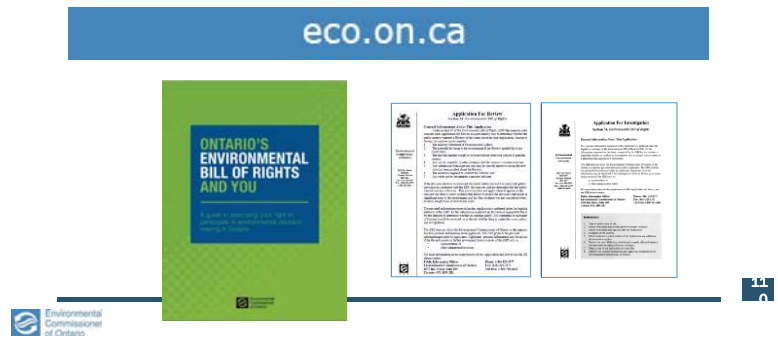
2015



## EBR Applications



## How to Submit an EBR Application



## Recap

- Your EBR Rights:
- A failed system for species at risk
- Protected Areas: little progress

## Recap

- Your EBR Rights: [explore the Registry!](#)  
**Have your say!**
- A failed system for species at risk
- Protected Areas: little progress

## Recap

- Your EBR Rights: [explore the Registry!](#)  
**Have your say!**
- A failed system for species at risk
  - We need compliance strategy; transparency; focus on net benefits for species
- Protected Areas: little progress

## Recap

- Your EBR Rights: [explore the Registry!](#)  
**Have your say!**
- A failed system for species at risk
  - We need compliance strategy; transparency; focus on net benefits for species
- Protected Areas: little progress
  - We need focus on Southern Ontario and wetlands

**Thank You!**

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[www.eco.on.ca](http://www.eco.on.ca)

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# Victoria Bridge

Municipal Class EA

Environmental and Ecological Planning Advisory Committee



Shari Muscat, Environmental Planner

March 15, 2018

## Summary

- Municipal Class Environmental Assessment
- Existing Bridge and Road
- Existing Environmental Conditions
- Natural Heritage Features and Functions
- Species at Risk Assessment
- Significant Wildlife Habitat Assessment
- Tree Inventory
- Proposed Bridge Solution
- Impact Assessment
- Recommendations
- Conclusions
- Next Steps

Victoria Bridge  
Environmental and Ecological Planning Advisory Committee March 15, 2018

## Municipal Class Environmental Assessment

### Class Environmental Assessment

- Evaluated rehabilitation or replacement alternatives. Full range of alternatives evaluated along with their impacts on social, economic, natural, and cultural environment.

### Study Area

- The Study Area is located on Ridout Street South, and spans the South Branch of the Thames River, just south of Horton Street.

### Problem/Opportunity:

Constructed in 1926, Victoria Bridge is located on Ridout Street over the south branch of the Thames River in the City of London. Recent bridge inspections identified ongoing issues of deterioration which may reduce the structural capacity of the bridge. Given the age of the bridge, existing conditions, functional deck width, structural capacity, potential heritage value and other considerations, the Class EA study should identify a solution to address structural deficiencies and accommodate all users through bridge rehabilitation or replacement.



Victoria Bridge  
Environmental and Ecological Planning Advisory Committee March 15, 2018

## Existing Bridge and Road

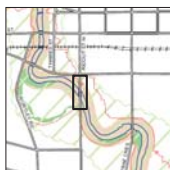


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## Existing Environmental Conditions

### City of London OP Map B1 and B2

- Conservation Authority Regulation Limit
- Riverine Erosion Hazard Limit for Confined Systems
- Significant Corridors
- Big Picture Meta-Cores and Meta-Corridors
- Woodlands adjacent to the study area.

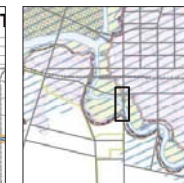
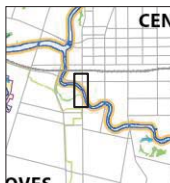


Map B1

Map B2

### The London Plan Map 5 and 6

- Significant Valleylands
- Conservation Authority Regulation Limit
- Highly Vulnerable Areas
- Riverine Erosion Hazard Limit



Map 5

Map 6

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## Natural Heritage Features and Functions

### Aquatic Ecosystems

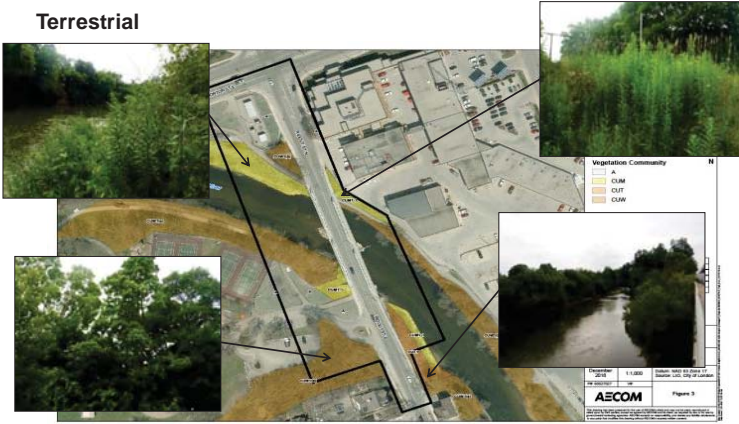


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## Natural Heritage Features and Functions

### Terrestrial



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## Species at Risk Assessment

- A review of background information revealed that seventy-nine (79) Species at Risk (SAR), protected under the ESA, may potentially occur within the study area.
- Of these, thirty-eight (38) species are listed as Endangered, twenty-one (21) species are listed as Threatened, and twenty (20) species are listed as Special Concern (SC).
- Upon completion of the SAR habitat screening, suitable habitat for twenty-six (26) terrestrial and aquatic species were identified within the subject lands. However, only two (2) of the species were observed; these include Barn Swallow (*Hirundo rustica*), and Monarch (*Danaus plexippus*). Suitable habitat conditions exist within the study area for an additional twenty-four (24) species, although they were not observed.

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## Species at Risk Assessment

### Federally Recognized Features & Species (Aquatic)

- Round Pigtoe (*Pleurobema sintoxia*) - Endangered
- Rayed Bean (*Villosa fabalis*) - Endangered

### Provincially Recognized Features & Species

Common Name	Scientific Name	Candidate Habitat	Confirmed Habitat
Barn Swallow	<i>Hirundo rustica</i>		X
Chimney Swift	<i>Chaetura pelagica</i>	X	
Monarch	<i>Danaus plexippus</i>		X
Little Brown Myotis	<i>Myotis lucifugus</i>	X	
Eastern Small-footed Myotis	<i>Myotis labii</i>	X	
Northern Myotis	<i>Myotis septentrionalis</i>	X	
Tri-colored Bat	<i>Peimyotis subflavus</i>	X	
Eastern Musk Turtle	<i>Stemotherus caboratus</i>	X	
Northern Map Turtle	<i>Graptemys geographica</i>	X	
Queensnake	<i>Rhiginia sapidivittata</i>	X	
Snapping Turtle	<i>Chelydra serpentina</i>	X	
Spiny Softshell	<i>Apatone spiniferus</i>	X	
Eastern Sand Darter	<i>Ammocrypta pallidula</i>	X	
Northern Madtom	<i>Noturus stigmosus</i>	X	
Round Pigtoe	<i>Pleurobema sintoxia</i>	X	
Rayed Bean	<i>Villosa fabalis</i>	X	
Round Hickorynut	<i>Obovata subrotunda</i>	X	
Silver Shiner	<i>Notropis photogenis</i>	X	
Black Redhorse	<i>Moxostoma duquesnei</i>	X	
Wavy-rayed Lampmussel	<i>Lampisilis fasciola</i>	X	
Spotted Sucker	<i>Minytrema melanops</i>	X	
Kidneyshell	<i>Ptychobranchus fasciolaris</i>	X	
Northern Riffleshell	<i>Epioblasma tonulosa rangiana</i>	X	
Rainbow Mussel	<i>Villosa iris</i>	X	
Salamander Mussel	<i>Simpsonia ambigua</i>	X	
Snuffbox	<i>Epioblasma triquetra</i>	X	

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## Significant Wildlife Habitat Assessment

During the background screening exercise a total of twenty-two (22) candidate Significant Wildlife habitats were identified:

- Seasonal Concentration Areas – nine (9) Candidate Habitats
- Rare Vegetation Communities or Specialized Habitats for Wildlife – nine (9) Candidate Habitats
- Habitats of Species of Conservation Concern – three (3) Candidate Habitats
- Animal Movement Corridors – one (1) Candidate Habitat

Of the twenty-two (22) candidate habitats identified, twenty (20) were ruled out, leaving two (2) candidate habitats as present within the study area.

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## Significant Wildlife Habitat Assessment

### Candidate Significant Wildlife Habitat

Two (2) candidate SWH remain as species specific surveys were not completed in order to confirm habitat.

- Bat Maternity Colonies
- Turtle Nesting Areas – Candidate turtle nesting habitat was observed within the vicinity of the bridge

### Confirmed Significant Wildlife Habitat

Special Concern and Rare Wildlife Species – One species of Special Concern (Monarch) was observed within the study area during 2017 field investigations.

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## Tree Inventory

- A tree inventory was completed in accordance with the City of London Tree Protection By-law (2016) and using accepted arboricultural techniques as outlined in the Tree and Landscape Appraiser's Guide for Plant Appraisal, 9th Edition, (2000).
- The tree inventory and assessment was completed for the trees in naturalized and parkland areas, adjacent to Victoria Bridge on Ridout Street (North and South), which could be affected by the works.
- A total of 97 trees greater than 10 cm DBH were inventoried and assessed within the Victoria Bridge study area. Additionally, 407 trees less than 10 cm DBH were tallied within the study area and within 6 m of the study area.
- Of the trees surveyed (greater than 10 cm DBH), 87 are likely to be removed as a result of the construction activities. The remaining 10 are to be retained and should have the appropriate tree protection measures practiced and enforced during all construction activities.

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## Tree Inventory



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## Proposed Bridge Solution

### Assessment of Alternatives

- Alternative A: Bridge Rehabilitation with Improved Accommodation for Pedestrians/Cyclists;
- Alternative B: Bridge Rehabilitation for Active Transportation & New Bridge Downstream (West);
- **Alternative C: Remove Existing Bridge & Build New Bridge on Existing Alignment;**
- Alternative D: Remove Existing Bridge & Build New Bridge on New Alignment Downstream (West);
- Alternative E: Minimal Rehabilitation of Existing Bridge. Eliminate at the end of Projected Service Life and Build New Bridge In existing location.

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## Proposed Bridge Solution

### Assessment of Alternatives

- All alternatives will require the construction of two new piers or abutments along river banks and the removal of the centre pier. The impacts are considered to be minor and can be mitigated through the implementation of best management practices.
- Works within UTRCA regulated limits will require permitting under Ontario Regulation 157/06
- No impacts to significant woodlands or significant vegetation communities are anticipated.
- Each of alternatives has the potential to impact riparian vegetation, natural stream morphology and erosion of river bank.
- All alternatives have the potential to affect SAR habitat within the vicinity of the Bridge.

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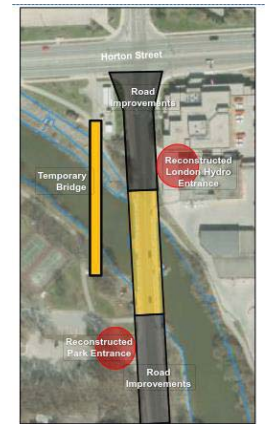
## Proposed Bridge Solution

### Access across the river

- Temporary bridge across Thames River will be provided for pedestrians and cyclists. The bridge will also carry temporary services.

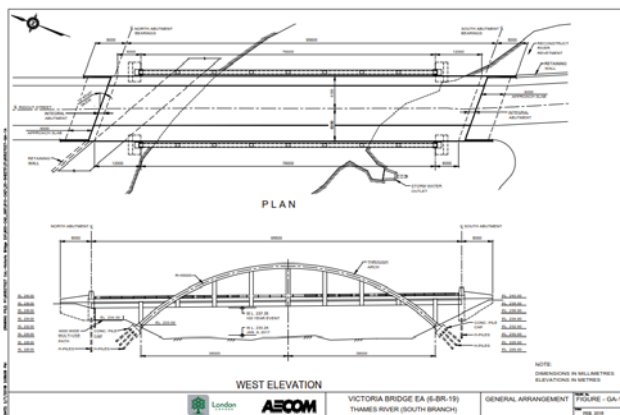


Temporary bridge example



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## Proposed Bridge Solution



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## Impact Assessment

### Short Term Impacts

- Sediment and Erosion
- Dust
- Damage and disturbance to natural features
- Disturbance to wildlife and wildlife habitat
- Disturbance of fish and mussel species and their habitat
- Temporary dewatering impacts

### Long Term Impacts

- Loss or permanent disturbance to vegetation
- Disturbance to fish and mussel habitat
- Disturbance to terrestrial and aquatic SAR species habitat

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## Recommendations

- A detailed Tree Inventory and Preservation Plan should be conducted once the final design is completed;
- An Erosion and Sediment Control Plan should be prepared during Detailed Design;
- Any in water-works will require a plan to relocate fish and mussels encountered within the construction footprint for the preferred alternative. This should be prepared during detailed design;
- Wherever possible, habitat for Species at Risk should be compensated for and/or enhanced;
- A detailed invasive species control program should be developed for upstream and downstream areas adjacent to the bridge;
- A detailed restoration plan utilizing native plantings and native seed mixes following City specifications should be developed and followed; and
- The loss of habitat for barn swallow needs to be compensated for as part of the final design.

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## Conclusions

### Permits and Approvals

- Potential habitat for 26 terrestrial and aquatic SAR species has been identified within the study area. Further consultation at the Detailed Design Stage is required to determine next steps on further species specific field investigations and permitting.
- Within the study area, the Thames River provides suitable conditions for several aquatic SAR, this will require further consultation with Federal and Provincial Agencies to determine permitting requirements.
  - Consultation with MNRF will be required to confirm ESA permit requirements, as well as to determine the requirement for the completion of any species specific surveys;
  - An IGF shall be prepared to determine next steps in consultation with the MNRF at Detailed Design;
  - Due to the presence of aquatic Species at Risk Act (SARA) species within the Thames River, further consultation with DFO is required to determine permitting needs.
- Permit from the UTRCA will be required under Ontario Regulation 157/06

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## Conclusions

### Timing Restrictions

- The Thames River within the vicinity of the proposed works is classified as warmwater. The restricted activity timing window for the spring spawning period is from March 15th to June 30th.
- Removal of vegetation within the study areas can occur between the months of September to April, which is outside of the typical breeding bird period (April 1st to August 31st) within southern Ontario to avoid contravening the Migratory Birds Convention Act.
- Should construction take place during the barn swallow nesting period of May 1 – August 31, barn swallow need to be excluded from any part of the structure by undertaking the following prior to the active season:
  - Removing barn swallow nests that may be impacted; and
  - Installing tarps and/or netting to prevent barn swallow from accessing the structure.

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## Next Steps

- Finalize Environmental Study Report (ESR).
- 30 Day Public Review of Report (May – June 2018).
- Detailed Design: 2019 to 2020.
- Tendering and contract award: Fall 2021.
- Construction: 2022.

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# GREEN STANDARDS FOR LIGHT POLLUTION & BIRD-FRIENDLY DEVELOPMENT

By – law recommendations for the City of  
London

Prepared by the Ecological and Environmental Advisory Committee (EEPAC), the  
Advisory Committee on the Environment (ACE), & the Animal Welfare Advisory  
Committee (AWAC)

- Fourth Draft -  
March 2018

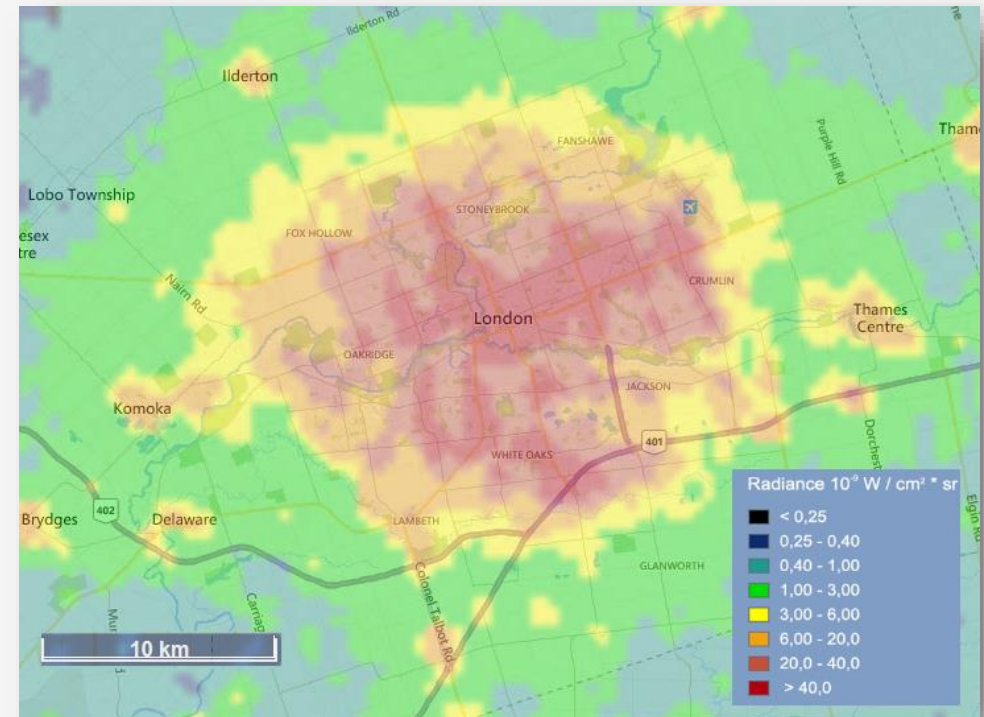




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Light pollution in London, Ontario. From [www.lightpollutionmap.info](http://www.lightpollutionmap.info)





# 1. DEFINITIONS

Definitions were derived from pre-existing standard documents of other municipalities within Ontario<sup>1-5</sup>. For the purpose of this document, terms shall be defined as follows:

- **Architectural lighting** – outdoor lighting to illuminate landscaping features (e.g. trees, stones, or water), building facades, etc. (excepting signage)
- **Automatic timing device** - any device which controls light fixtures to automatically turn on and off at designated times
- **City** – the City of London, Ontario
- **Council** - the elected municipal council of the City
- **Curfew** - a time defined by the City when outdoor lighting must be reduced or switched off
- **Cut-off shielding** - a luminaire having a light distribution in which zero lux intensity occurs at or above and angle of 90° nadir
- **Decorative lighting** - see *vanity lighting* (below)
- **Diode** - a device allowing one-directional flow of current
- **Direct light** - light directly emitted from the installed light fixture or off of its internal reflector or luminaire
- **Emergency conditions** - lighting that is only switched on during an emergency, exit paths during an emergency situation, or security lighting used solely during alarms
- **Glare** - undue brightness from a light source. Light emitted from fixtures which diminish a bystander's ability to see and/or causes discomfort
- **Grandfathered** - existing light fixtures which may be exempt from these recommendations (Section 6)
- **Hardscape** - permanent human-made elements of an outdoor landscape design
- **Horizontal illuminance** - Amount of light energy landing on a horizontal surface (e.g. the ground)
- **IESNA** - Illuminating Engineering Society of North America or any successor organization
- **Indirect light** - light which is scattered or reflected off of other surfaces
- **Lamp** - any artificial source of light
- **LED (Light Emitting Diodes)** - a popular modern type of lamp
- **Light fixture** - a complete lamp assembly which includes lamp, housing, reflector, mounting bracket, and/or pole socket
- **Light pollution** - any adverse consequence of artificial light including, but not limited to, glare, light trespass, sky glow, energy waste, compromised safety and security, and impacts on the nocturnal environment
- **Light trespass** - any light which falls beyond the property it is intended to illuminate
- **Lumen** - a measurement unit that quantifies the amount of light produced by a lamp or emitted from a luminaire (distinct from 'watt', a measure of power consumption). Conversion to lux is possible
- **Luminaire** - see *Light fixture* (above)
- **Lux** – an international unit used to measure light intensity. Conversion to lumen is possible
- **Official Plan** - the City of London and Planning Area's Official Plan, revised periodically
- **Outdoor lighting** - any outdoor installed or portable luminaire used for flood lighting, general illumination, or advertisement
- **Outdoor recreational facilities** - an outdoor space or venue used for sporting events or entertainment purposes within the city
- **Over-illumination** - lighting of an area beyond that which human vision is able to differentiate
- **Owner** - the registered owner according to the land registry office or the person in the actual occupation of the land
- **Point illuminance** - Amount of light energy measured at a given point
- **Shielded luminaire** - refers to luminaires with an adjustable mounting device allowing aim in any direction and contains a shield, louver, or baffle to reduce direct view of lamp
- **Sky glow** - any brightening of the nighttime sky caused by light directed and/or reflected upwards and/or sideways that reduces the ability to view the night sky
- **Sufficient daylight** - adequate natural lighting such that exterior artificial lighting is not required (approximately 30 minutes after sunrise or 30 minutes prior to sunset)
- **Vanity lighting** - lighting for the purpose of drawing attention. For example, lighting to illuminate landscaping features (e.g. trees, stones, or water), building facades, etc. (excluding signage)
- **Ventilation grate** - street grates or grills which disperse air from structures under roadways and/or sidewalks to reduce heat gain in the summer and allow for passive heating in winter
- **Visual markers** - a physical design visible within a bird's optical wavelength to indicate a barrier is present



London, Ontario downtown at night. Photograph © Joanna Kurowski

# 2. PURPOSE & JUSTIFICATION

The City of London plans to become one of the greenest cities in Canada by reducing its impacts on the environment and its carbon footprint (direction 4, The London Plan)<sup>1</sup>. Specifically, The London Plan contains the goals of minimizing bird strikes on buildings and reducing negative environmental impacts of light pollution<sup>1</sup>. In Canada, it is estimated that 25 million birds die annually from collisions with buildings<sup>22</sup>. The purpose of this document is to provide guideline recommendations for by-law development to achieve these goals. Many specifications in this document are derived from pre-existing guidelines of other Ontario municipalities<sup>2-9</sup>, as well as from the Illuminating Engineering Society of North America (IESNA).

## 2.1 Environmental Impacts

Light pollution impacts the behaviour and survival of birds, mammals, amphibians, fish, and arthropods, and diminishes ecological health both locally and nationally<sup>10</sup>. Specific threats to wildlife include disruption of movement and migration<sup>11-14</sup>, changes in communication and reproductive behaviours (e.g. songbird call times)<sup>15</sup>, shifts in species diversity, altered interactions among species<sup>16,17</sup>, disruption of foraging behaviour, and increased mortality<sup>18-21</sup>.

## 2.2 Carbon Footprint and Cost

Goals of the current London Community Energy Action Plan<sup>23</sup> include an 80% reduction in greenhouse emissions by 2050 and energy cost savings. Policy and design standards to reduce wasted lighting energy are crucial if the City of London is to achieve these goals. Reducing wasted energy is an easy way for the City of London to reduce its carbon footprint; total wasted light energy in the United States is estimated between 80 and 225 kg of CO<sub>2</sub> annually<sup>24</sup>. The negative economic impacts of light pollution on health, wildlife, and astronomy are estimated at \$7 billion each year in the United States<sup>10</sup>.



# 3. GENERAL INFORMATION

## 3.1 Light Pollution

The City of London's Advisory Committee on the Environment (ACE), Environmental and Ecological Protection Advisory Committee (EEPAC), and Animal Welfare Advisory Committee (AWAC) (or 'we the committees') collectively recognize that it is beneficial to protect dark skies through responsible city lighting policies. We the committees recognize that other Ontario municipalities have outdoor lighting ordinances to reduce glare and light intrusion while promoting energy conservation and healthy neighbourhoods.

Light pollution has been defined as "excessive or obtrusive artificial light caused by bad lighting design"<sup>10</sup>. Proper lighting design and illumination standards can reduce light pollution by<sup>20</sup>:

- Preventing lighting in specific areas
- Limiting lighting duration
- Reducing light trespass
- Reducing light intensity

## 3.2 Bird-Friendly Design

Bird-friendly design is critical for city-wide progressive green development standards. Designs to reduce bird mortality may be similar to light pollution reduction strategies, with further inclusion of non-reflective glass and ventilation grates. In accordance with The City of London's Humane Urban Wildlife Conflict Policy, the City of London can take the following measures to reduce bird fatalities:

- Placement of bird-friendly exterior light fixtures in conjunction with glass design elements
- Adoption of a migratory bird policy<sup>8</sup>
- Provision of a comprehensive list of design-based development strategy options to architects, planners, urban designers, building owners and managers, tenants, and homeowners that can be applied to new or existing buildings
- A campaign that promotes awareness of the dangers the urban environment poses to migrating birds such as the City of Toronto's "Lights Out Toronto" event
- Bird-friendly ventilation grates with a porosity no greater than 2 cm<sup>2</sup> or covered with netting to prevent injured birds from falling through
- If transparent noise barriers must be used, they shall have visual markers for birds to perceive and avoid them
- Eliminate reflective glass and mirrors from exterior landscape and building design. Birds are unable to distinguish between reflected and real habitat, which results in increased collision mortality



The night sky in Toronto, Ontario during a power outage in 2003 (left) and on a night with power (right). Photograph © Todd Carlson

# 4. LIGHTING DESIGN CRITERIA

All general recommendations found in Section 4.1 are applicable to all newly installed lighting fixtures. Specific design details can be found in the following sections categorized by site usage type (residential, non-residential, special consideration sites). These recommendations and criteria are amalgamated from the design guideline recommendations of the Model Lighting Ordinance<sup>2</sup>, and various Ontario municipalities (e.g. Toronto, Burlington, and Richmond Hill).

## 4.1 Hours of Operation

Recommendations for luminance and timing of lighting are intended to reduce or eliminate unnecessary light pollution. The IESNA and other documents typically use a light curfew to achieve this. The city of London's curfew begins **at and ends at**

Facilities requiring a curfew adjustment (e.g. restaurants, bars, sports stadiums, hospitals) will be evaluated on a case-by-case basis. During curfew, outdoor lighting must adhere to Section 4.2, bullet 5 option A or B. All residential and non-residential areas, including illuminated signs, are subject to the curfew<sup>36</sup>. Some site uses may warrant a curfew extension (e.g. recreation or entertainment) (see Section 6, General Exemptions).

## 4.2 Universal Outdoor Light Fixture Requirements

The general recommendations laid out below apply to all properties and lots.

- All outdoor light fixture installations must use shielded or cut-off fixtures
- No installed light fixtures will emit light above 90° from a direct downward plane
- Light fixture mounts/poles must have a non-reflective finish to reduce glare
- Maximum lumen levels for different light fixture heights must conform to Table 4.2
- All outdoor installed lighting (unless stated otherwise in Section 4.5) must incorporate one of the following:

A. An automatic switch (or automatic timing device) to extinguish all outdoor lighting curfew. These switches can include photoelectric, astronomic, programmable, or building automation switches. The switch must include a backup power device (battery or other)

B. Occupancy sensors/timers/motion sensors

- Light trespass at the property line will not exceed 11.6 lumens / ft<sup>2</sup> for commercial/industrial property boundaries or 5.8 lumens / ft<sup>2</sup> for residential property boundaries. In the case of a mixed residential/commercial boundary, the value for the residential shall take precedence
- Adjustable, or swivel fixtures, are prohibited
- Pole heights cannot exceed: **Height = Distance from pole to property line x 4** and should not exceed height of adjacent structures. Large parking lots and parking garages with >10 parking spaces are exempt from this recommendation. If a non-residential zone light fixture must be installed higher due to safety considerations, cut-off shielding greater than 90° must be installed
- Glare onto adjacent properties, roadways, and pedestrian thoroughways is prohibited. This may require the use of additional shielding
- All light sources (a.k.a bulbs, diodes) must be directed in such a way so that the light source is not directly visible from adjacent properties
- Openings in buildings which will contribute to light spillage must be blocked or shielded to transmit less than 10% light during the overnight hours (11 PM - 6 AM )
- The use of lasers, search lights, strobe lights, twinkle lights, or chasing lights are prohibited unless used for emergency services

Table 4.2

Mounting Height		Maximum Single Light Fixture
Feet	Meters	Lumens
6	1.83	500 – 1000
8	2.44	600 – 1600
10	3.05	1000 – 2000
12	3.66	1600 – 2400



# 4. LIGHTING DESIGN CRITERIA

## 4.3 Residential

All residential zones (R1 through R11) must adhere to the requirements listed above. If the residential zone is combined with a non-residential zone, the property is strongly encouraged to meet both residential (Section 4.3) and non-residential (Section 4.4) guidelines. Residential guidelines are as follows:

- Maximum single fixture lumen allowance at a main entrance will not exceed 1,260 lumens.
- Maximum lumen allowance for each additional fixture (excluding main entrance, driveway/parking (Section 4.5.2), and motion sensed security lighting (Section 4.5.7), is 315 lumens / fixture.
- In residential buildings with 5 or more stories, shielded directional fixtures with motion-sensors for security are not to exceed 1,260 lumens each.

Additional design criteria for specific types of sites or property uses (including parking lots and security lighting, which may be utilized for residential properties) are included in Section 4.5.

## 4.4 Non-Residential

For all non-residential sites, Table 4.4 must be followed. Site total lumen allowance will be determined by number of parking spaces (if site has fewer than 10) or total square footage of hardscape. These site lumens may be divided among all light fixtures on the property, so long as they adhere to the universal guidelines noted above (Section 4.2) and any specific site guidelines below. Some specific types of site usage (e.g. sale lots or service stations) will have additional design considerations or may receive additional lumen allowance (Section 4.5).

Table 4.4

Light Zone Code	City of London Property Zone Code(s)			Lumen Allowance	
				Lumens / parking space (for sites <= 10 parking spaces)	Lumens / ft <sup>2</sup> of hardscape (sites > 10 parking spaces)
LZ-0	AG	ER	OS	350	0.5
	UR				
LZ-1	AG	DC	HER	490	1.25
	C				
	OC	RO	RRC		
	T	TGS			
LZ-2	AC	GI	OF	630	2.5
	ASA	HS	OR		
	BDC	LI	RSC		
	CC	NF	NSA		
	CF	CSA	OB		
	CR				
LZ-3	DA	RF	SS	840	5
	EX	RSA			
	HI	RT			

Values obtained from the IESNA. This table is intended for non-residential zones only.

LZ0 - "Recommended default zone for wilderness areas, parks, and preserved, and undeveloped rural areas."

LZ1 - "Recommended default zone for rural and low-density residential areas" (may include business parks).

LZ2 - "Recommended default zone for light commercial business districts and high density or mixed-use residential districts" (may include churches, schools, recreation facilities, light industrial zoning).

LZ3 - "Recommended default zone for large cities' business district" (may include business zone districts, commercial mixed-use, and heavy industrial zones).





# 4. LIGHTING DESIGN CRITERIA

## 4.5 Specific Use Design Considerations and Lumen Allowance Additions

The following sections have been provided for specific-use zones and may be applicable to residential or non-residential areas.

### 4.5.1 Entertainment Venues and Events

Entertainment venues and specific events are to be evaluated individually on a case by case basis.

### 4.5.2 Parking Lots and Garages

Lighting in parking lots and garages are primarily for the safety of pedestrians. Parking structure lighting should be modulated so that they transition to match, but not exceed, adjacent roadway lighting levels at exits/entrances. All parking lots must adhere to maximum lumens at property line as described in Section 4.2.

In general, all parking lots shall have an average horizontal illuminance of no more than 25 lux with a maximum point illuminance not to exceed 40 lux. In the individualized case that a parking lot requires enhanced security due to the threat of vandalism or personal safety, the average horizontal illuminance and maximum point illuminance may be no greater than 75 lux.

These recommendations apply to any and all residential, institutional, customer, employee, or general use parking lots.

### 4.5.3. Outdoor Sales Lots

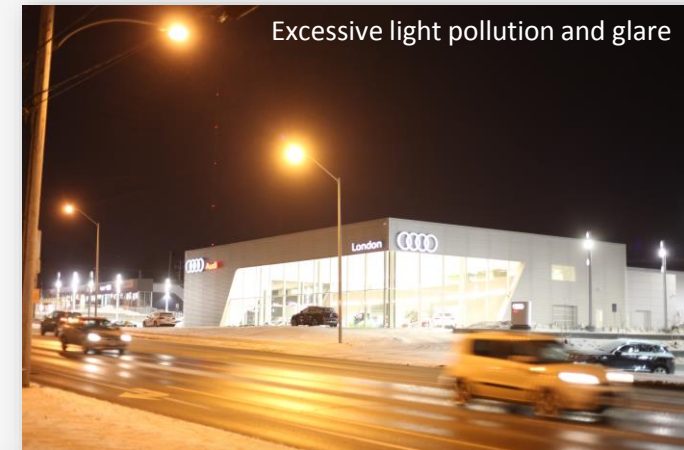
Sales lots are illuminated to draw attention to displayed products and/or for security purposes. The lighting requirements include a graduated illuminance level from the front row (between the roadway and the front row of merchandise) to the last row. In addition to the universal guidelines presented in Section 4.2, site maximum horizontal illuminance is not to exceed:

- 100 lux at the front row
- 50 lux at all other rows
- 20 lux at all pathways/drives on the property

In addition to the lumen allowance provided in Table 4.4, outdoor sales lots used exclusively for the sale of vehicles have an additional allowance of:

- LZ-1, additional 4 lumens / ft<sup>2</sup> hardscape
- LZ-2, additional 8 lumens / ft<sup>2</sup> hardscape
- LZ-3, additional 16 lumens / ft<sup>2</sup> hardscape

These recommendations apply to every outdoor sales lot to be illuminated and are to be incorporated into the light fixture design in accordance to the lumen allowance for non-residential areas.



Two commercial lots in London, Ontario with excessive light pollution and glare (top) and relatively low light pollution and low glare (below). Photographs © Ryan Fraser 2015

# 4. LIGHTING DESIGN CRITERIA

## 4.5.4 Service Stations and Gas Stations

The purpose of lighting a service/gas station is to ensure patron safety and to draw attention and interest to the business. Over-illumination of the property is prohibited, and the illumination limits for property boundaries (Section 4.2) must be maintained. Installed fixtures are to be limited to a canopy whenever possible. In addition to adherence to the universal guidelines presented in Section 4.2, site average horizontal illuminance is not to exceed:

- 100 lux for pump island/under canopy
- 30 lux for service areas
- 20 lux for pathways/drives

In addition to the allowance provided in Table 4.4, service stations/gas stations have additional allowed lumens:

- LZ-1, 4000 additional lumens / pump
- LZ-2, 8000 additional lumens / pump
- LZ-3, 16,000 additional lumens / pump

These values are additional design criteria which need to be implemented in conjunction with the lumen allowance provided for non-residential sites.

## 4.5.5 Sports Recreational Fields

Outdoor sports fields require lighting for clear illumination of players. Sports/recreational fields have been divided into 4 classes:

1. More than 5,000 attendance seats (e.g. universities, colleges, semi-pro players)
2. 1,500 – 5,000 attendance seats (e.g. small universities or colleges, high-attendance high schools)
3. 500 – 1,500 attendance seats (e.g. high schools, training clubs with spectator seats)
4. Less than 500 attendance seats (e.g. leagues, elementary schools, little league, social events)

Using this classification system, illumination levels and lighting equipment must adhere to the IESNA Recommended Practice for Sports and Recreational Area Lighting (RP-6, latest edition). Illuminance values, fixture positioning, pole height, and curfew timing mandated in the IESNA RP-6 shall take precedence over the requirements outlined in this document.

## 4.5.6 Architectural and Vanity Lighting

Architectural lighting is used to highlight and attract attention to architectural features, heritage features, and municipal landscaping, monuments, or fountains. No fixture will be installed to emit light above the horizontal plane (e.g. directly upwards). No light fixture will be aimed at reflective or polished surfaces such as glass, smooth stone, glazed tile, etc. The maximum total illuminance shall not exceed 100 lux. Architectural/vanity lighting must be extinguished at curfew, preferably by automatic switch (Section 4.2, bullet 5, option A).

Lumens from architectural light fixtures must be included in the site maximum lumen allowance for non-residential sites (Table 4.4).

## 4.5.7 Security Lighting

Lighting to ensure the safety of pedestrians shall be used as required. Light fixtures for this purpose shall:

- Reduce brightness contrast
- Ensure no light is directed 90° above the horizontal
- Employ motion sensors (Section 4.2, bullet 5, option B)

These guidelines shall apply to all pedestrian trafficked areas and will be included in the site/lot lumen allowance.

## 4.5.8 Other

- Vehicular and temporary emergency lighting required by Fire and Police departments, or other emergency services shall be exempt from the requirements of the By-law.
- Outdoor lighting utilizing fossil fuels, including torches, lanterns, and open flames.
- Lights used by contractors, providing the lights are located on the property where such work is taking place and only during hours where work is occurring.
- Specific instances where concern for public safety conflicts with the guidelines outlined in this document will be evaluated on a case-by-case basis.



# 5. EXEMPTIONS

## 5.1 Grandfathered Lighting

All existing light fixtures in place at the time of this policy shall be grandfathered. Grandfathered light fixtures which are determined to cause excessive glare or light trespass may be required to be shielded, redirected, or removed. Any modification, relocation, repair, or reinstallation of any grandfathered light fixture must meet the design criteria laid out in Section 4. Should a property undergo a use or zoning change, all light fixtures must be updated to meet the design criteria in Section 4. All new fixtures installed after the date of this policy must meet the design criteria in Section 4.

## 5.2 General Exemptions

These guidelines do not take precedence over highway and road lighting bylaws.

### 5.2.1 Recreational use - after 11 PM - limitation

Where an outdoor recreational use in an outdoor recreational facility continues after 11 PM, outdoor light fixtures required to be on in connection with that use are permitted, but only while that use continues.

### 5.2.2 Entertainment event - after 11 PM - limitation

Where a concert, play or other entertainment event in a park or on other land owned by the Corporation and used for public purposes takes place or continues after 11 PM, outdoor light fixtures required to be on in connection with that event are permitted, but only while the event takes place or continues.

### 5.2.3 Hospitals

All hospitals shall be exempt.

### 5.2.4 Seasonal lighting

Lighting such as Christmas and other holiday lighting shall be exempt.

## 5.2.5 Temporary Exemptions

Any person may submit a written request for temporary exemption from the recommendations by completing a written request form prepared by the City. The written request should include:

- Specific exemption request
- Type and use of exterior lighting involved
- Date(s) of the event
- Duration of the event
- Location of exterior lighting
- Size, wattage, and height of proposed lighting

The owner or lease of the land upon which the prohibited light(s) will be placed shall apply to the city for an exemption. Plans for the location and fixture specifications for the specified light(s) shall be submitted with the application.

An exemption may be granted in whole or in part with terms and conditions. Any breach by the applicant of any of the terms or conditions will render the exemption null and void.



Keith Urban at Rock the Park music festival, London Ontario.  
Photograph © Derek Ruttan 2015



# 6. BIRD-FRIENDLY DESIGN

Mortality rates of birds are increasing due to collisions with buildings, especially during the migratory season. Each year nearly 25 million birds die in Canada from building collisions alone, making reflected light from buildings one of the most deadly threats to birds. With new guidelines in place, a building that emits reflected light which injures or kills birds is now a violation of the provincial Environmental Protection Act (EPA) and the federal Species At Risk Act (SARA). Due to these legal offenses, it is important for buildings to follow bird-friendly design guidelines across Canada.

The following strategies outline recommendations for achieving green standards for bird-friendly development, and are derived from the City of Toronto Green Development Standard: Bird-Friendly Development Guidelines (2007), City of Toronto Green Development Standard Version 2.0 (2015) and City of Toronto Bird-Friendly Development Guidelines Best Practices Glass (2016). These documents work together to reduce the threat of death from buildings by making glass less dangerous to birds and by mitigating light pollution. Options for creating visual markers, treating glass, and muting reflection shall be applied to 85% of glass features and windows for the first 12 m above grade (dimensions relate to typical tree height). Dimensions for visual markers and muting reflection applications are subject to building design and site conditions.

## 6.1 Visual Markers

Visual markers are the most effective technique to reduce window strikes and shall be used on exterior surface glass, balcony railings, fly-through conditions and parallel glass within the first 12 m of the building. The distance between patterns or applications on glass must be a distance of 10 cm by 10 cm or less and at least 5 mm in diameter. Visual markers should have high contrast and be applied to low reflectance, exterior surface glass.



A window with visual marker stripes and a bird decal to prevent bird strikes  
Photograph from [www.smith.edu/news/preventing-bird-collisions-at-mcconnell/](http://www.smith.edu/news/preventing-bird-collisions-at-mcconnell/)





# 6. BIRD-FRIENDLY DESIGN

## 6.2 Glass treatments

Glass treatments shall be applied above 12 m to the height of or anticipated height of the surrounding tree canopy and vegetation at maturity in sites close to natural areas such as ravines or woodlots. Glass treatments must also be applied to glass adjacent to or in the vicinity of elevated landscapes such as podium gardens and green roofs. Glass treatment options must also be applied to windbreaks, solariums and greenhouses in order to create sufficient visual markers for birds.

**UV glass** can be effective since birds are able to see into the UV spectrum, making UV treated glass opaque to birds but translucent to humans. Such UV glass must be tested and approved by a third party for effectiveness as outlined in the 2014 Toronto Green Standard version 2.0.

**Patterned or 'fritted' glass** refers to glass which contains opaque or translucent images or abstract patterns. The images are created by using dots in a variety of sizes and densities which are most effective on the exterior surface of the glass. Only non-reflective glass should be used when combined with fritted patterns. Pattern design should follow the outlines in 6.1: Visual Markers.

**Film products** refers to external film applications or laminates which contain images or patterns and can be designed to enhance the architectural design of the building. **Decals** with no more than 5 to 10 cm of clear spaces between patterns can be used. Decals must be located on the exterior glass.

**Decorative Grilles and Louvres** refer to exterior grille features which if applied must be 10 cm by 10 cm or less.

**Fenestration Patterns** refer to multiple paned glass containing horizontal and vertical mullions. Panes must be no more than 28 cm with 10 cm or less the most effective visual marker.

**Art work** applied to the interior or exterior of windows can be used to provide sufficient visual markers while allowing for natural light.



Photo: John Carley



Photo: FLAP Canada



Photo: MMC Architects



Photo: MMC Architects

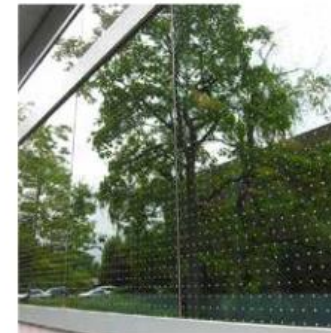


Photo: FLAP Canada



Photo: FLAP Canada



# 6. BIRD-FRIENDLY DESIGN

## 6.3 Muting Reflections Options

**Awnings and overhangs** to mute images at ground floor level.

**Sunshades** refer to applications to reduce direct sunlight, while allowing indirect light into rooms. This feature mutes reflection thus reducing window strikes.

## 6.4 External Lighting

**Decorative Lighting** should be eliminated wherever possible. For existing buildings, decorative lighting should be projected downward and turned off during migratory season (September – November, March – May)

**Advertising Lighting** must be lit from above to reduce the volume of light being projected unnecessarily into the night sky.

**Event and Festival Lighting** such as spotlights and search lights must be prohibited during bird migration season.

**Roof Top Lighting** that should be prohibited. Vanity lighting may be allowed only if the following conditions are met:

- Exterior light fixtures are installed to prevent unnecessary light spillage.
- Vanity lighting is turned off from 11 PM - 5 AM year-round without exception utilizing an automatic device.

Overrides afterhours may be provided by a manual or occupant sensing device with a limit of 30 minutes.

## 6.5 Interior Lighting

**Bird Friendly Operational Systems and Practices** refers to the use of operating and system practices by residents, tenants, building owners, and managers to help reduce migratory bird fatalities. The following strategies can be used:

- **Installation of interior task lighting** at work stations be the recommended light source during evening work hours, increasing energy efficiency, reducing light pollution, and migratory bird fatalities. Overhead lighting be turned off at night and focused lighting such as task lighting be used during bird migration season.
- **Provision of shielding from interior generated light** with less than 10 % transmittance overnight for all fenestrations (windows, doors, skylights, curtained walls), for example blinds and curtains.
- **Motion-Sensitive Lighting** to be installed and retrofitted in lobbies, walkways, corridors, and operating systems that automatically turn off lights during after work hours.
- **Internal Location of Greenery:** Building owners and managers must locate greenery away from clear glass and minimize lighting levels through motion sensing lighting in ground floor lobbies, walkways and corridors and retrofit glass in these areas wherever possible with bird friendly window applications in order to meet the Bird Friendly Green Standard (birds drawn into cityscapes by light pollution seek safety by flying towards greenery and are extremely dangerous in these areas.)



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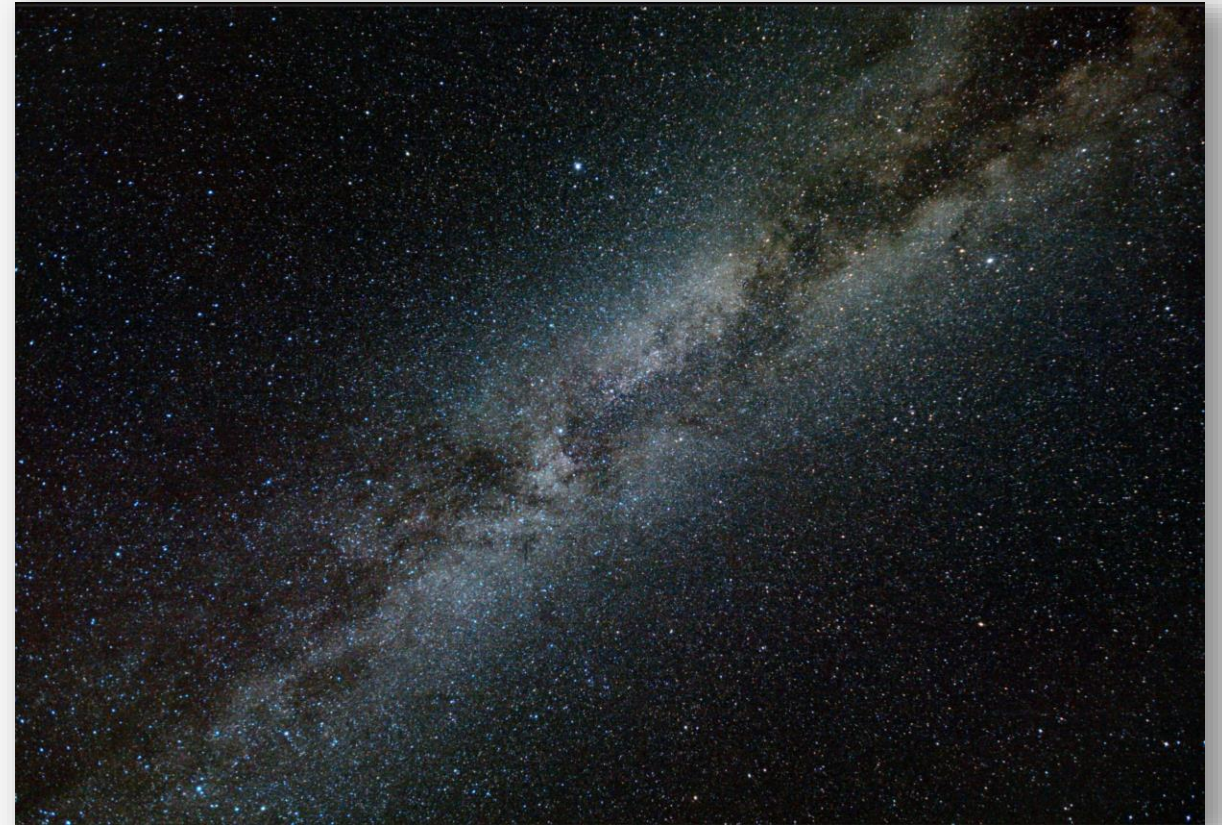
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The Summer Triangle and Milky Way, from Fingal, Ontario.  
Photograph © Ryan Fraser and Trevor McNaughton 2012