

TORONTO STAFF REPORT

December 21, 2005

To: Planning and Transportation Committee and Policy and Finance Committee

From: Chief Planner and Executive Director, City Planning Division

Subject: Preventing Migratory Bird Deaths Resulting from Collision with Buildings

Purpose:

The purpose of this report is to respond to Council's motion requesting the preparation of migratory bird friendly policies and practices to be applied to new buildings, city-owned buildings, and existing buildings in order to reduce bird collision deaths by at least 50 per cent. In addition, Council directed that staff identify ways and means the City could: minimize migratory bird kills; assist in the rescue, rehabilitation and release of injured migratory birds; and participate in a public awareness campaign.

Financial Implications and Impact Statement:

The financial implications of this report will result from the implementation of "Lights Out Toronto", a public awareness campaign to promote migratory bird awareness in the City and the danger that buildings and lighting pose to the birds. These costs are estimated at \$25.0 thousand.

The Medical Officer of Health in consultation with the Chief Planner, will report back to the Budget Advisory Committee as part of the 2006 Operating Budget process on the details of such a public awareness campaign before the spring migratory season, including funding.

Recommendations:

It is recommended that:

- (1) Council advocate and encourage the turning off of unnecessary lighting during the spring and fall migratory bird seasons;
- (2) Council adopt the following bird-friendly policies and practices for buildings to help reduce bird collisions:

- (a) concerning new construction: that the needs of migratory birds be incorporated into the Site Plan Review process with respect to facilities for lighting, including floodlighting, and that guidelines be established for this purpose;
 - (b) concerning City buildings: that the City continues the lights out policy after business hours and during weekends currently practiced under the Energy Management Program and that staff are reminded of this policy at the beginning of each migratory season; and
 - (c) concerning existing buildings: that the area bounded by Bloor Street to the waterfront and University Avenue to Jarvis Street be targeted for a program to encourage property owners, managers and tenants to voluntarily participate in a 'lights out' policy during the spring and fall migratory seasons;
- (3) Council institute an annual campaign to be known as "Lights Out Toronto" in order to promote public awareness of migratory birds in the City and the danger buildings and lighting pose to them;
 - (4) staff consult with concerned stakeholders including the Fatal Light Awareness Program, Toronto Wildlife Centre, Earth Rangers, Toronto Field Naturalists, the Toronto Ornithological Club, Toronto Animal Services, the Canadian Wildlife Service, Toronto Hydro and Building Owners and Managers Association, in order to:
 - (a) provide advice on creating an awareness-raising campaign on the issues of migratory bird deaths;
 - (b) identify best practices for the rescue, rehabilitation and release of injured migratory birds; and
 - (c) develop guidelines for the lighting of new buildings that can be incorporated into the Site Plan Review process that will help reduce bird collisions;
 - (5) the Medical Officer of Health, in consultation with the Chief Planner, report to the Budget Advisory Committee on the specifics, of a "Lights Out Toronto" bi-annual awareness raising campaign, before the spring migratory season; and
 - (6) the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.

Background:

At its meeting in April 12, 13, and 14, 2005, City Council adopted the following Motion:

"NOW THEREFORE BE IT RESOLVED THAT City staff report back to both the Policy and Finance Committee and the Planning and Transportation Committee on ways

the City of Toronto could reduce bird collision deaths by at least 50 percent and thus, save the lives of 5,000 migratory birds per year as they pass through our City;

AND BE IT FURTHER RESOLVED THAT the report include a set of bird-friendly policies and/or conditions that could be incorporated into the planning and site plan approvals process for the construction of any new buildings in the City of Toronto;

AND BE IT FURTHER RESOLVED THAT the report include a set of bird-friendly policies and/or practices that the City could implement internally to ensure that all City-owned buildings minimize the number of migratory bird kills;

AND BE IT FURTHER RESOLVED THAT the report include a set of bird-friendly policies and/or practices that the City could encourage and/or require existing building owners to adopt in order to minimize the number of migratory bird kills;

AND BE IT FURTHER RESOLVED THAT staff be directed to work with other agencies and partners (such as Toronto Hydro, the Fatal Light Awareness Program (FLAP), the Better Building Partnership and the cities of Chicago and New York) in order to identify other ways and means of minimizing the number of migratory bird kills (e.g., shielding street lights) in the City of Toronto;

AND BE IT FURTHER RESOLVED THAT the report identify how the City of Toronto could assist in the rescue, rehabilitation and release of migratory birds injured in these office tower collisions in the City of Toronto;

AND BE IT FURTHER RESOLVED THAT the report identify ways and means the City of Toronto could participate in a public education campaign that will reduce bird collisions and kills within the City of Toronto.

AND BE IT FURTHER RESOLVED THAT City staff be requested to consult with the property managers and owners of the affected properties in the downtown area prior to the implementation of any recommended bird-friendly policies.”

This report responds to the requests contained in this motion.

Comments:

Birds naturally exist in urban areas and some species have become particularly adept at living in cities. These “resident birds” include, among other species, pigeons, gulls, house sparrows and European starlings that live in the city year round. During the two annual migration periods of the year, the resident bird population experiences a significant influx of migratory birds. These are birds observing their annual cycle of migration north in the spring to their summer breeding grounds and south in the fall to warmer regions where they spend the winter. Most migratory bird species have been unable to adapt to living in cities and during their biannual flyovers are confused by the combination of glass and lighting of buildings often colliding with them in

significant numbers. Collisions with these structures, or “bird strikes”, and the ways in which the City of Toronto can help reduce these deaths is the subject of this report.

Policy and Legislative Context

As migration routes cover vast areas throughout the Americas and often cross several international borders, migratory birds are a Federal matter. The *Migratory Birds Convention Act (1994)* provides protection and management direction for migratory bird species and their nests in Canada and the United States. It amended the 1916 Convention between the United Kingdom and the United States for the protection of migratory birds in Canada and the United States. This federal legislation identifies: a listing of migratory bird families, principles by which they are to

be managed, seasons in which they can be harvested, and, outlines means with which they can be protected. In Canada, the *Migratory Birds Convention Act (1994)* is administered by the Canadian Wildlife Service of Environment Canada and a permit to handle any migratory bird species is required by the Canadian Wildlife Service. In the United States, this legislation is administered by the US Fish and Wildlife Service. Generally, priority to protect species at risk, with the exception of migratory birds, is given to provinces and territories, but when provincial/territorial legislative tools have no provision for a given species, the federal government may step in. In addition, the *Fish and Wildlife Conservation Act (1997)* protects from hunting or trapping of birds belonging to a species that is not designated a game bird.

While migratory birds are not directly within the mandate of the Ministry of Natural Resources of the Province of Ontario, the Province will initiate actions and/or support the actions of other jurisdictions to ensure information on species biology and population trends are available to properly manage and protect all species as required.

Currently, the City of Toronto has no policies directly applying to migratory birds. However, the Natural Heritage Study, 2001, contains the following recommendation: “a system should be developed to determine the values of natural areas for migratory species, for example as stopover areas.” This is being addressed in part by the Parks Division’s Toronto Bird Flyways Project that will implement a series of ecological enhancements and improvements at three key sites across the City in order to facilitate migratory and resident bird habitat and associated birding activity. The purpose of this project is to improve the quality and availability of suitable avian habitat in Toronto parkland, while offering visitors improved educational and recreational experiences related to bird life. In addition, other needs of migratory species will be considered in the City Planning Phase II Natural Heritage Study that is currently underway.

In order to demonstrate community leadership in environmental issues, City Council adopted a standardized “lights out” Policy at its regular meeting held on September 22, 23, 24 and 25, 2003. This was part of a larger “Energy Management Program” for City facilities, which created a policy whereby all City buildings, where feasible, will turn off lights when business has concluded. This policy is intended to identify the City as a leader in energy reduction. Its goals are to reduce energy, improve air quality and reduce emissions, reduce the high incidence of bird deaths downtown in highly lit areas and position the City to challenge the commercial sector to do the same. Staff reported back to Council on the implementation of the Energy Management

Program in May 2005 and found that in most facilities there were no major problems in complying with the “lights out” section of the policy.

Bird Strikes and Buildings

Bird strikes are distinguished between daytime and nighttime strikes and the causes of each are different but related. Daytime strikes occur due to the fact that birds cannot perceive images reflected in plate glass as reflections, and thus will fly into windows that they think are trees or sky. The impact of striking a window in full flight often results in death.

While bird strikes occur throughout the year, they rise dramatically during the annual spring and fall migration seasons due to the fact that many species of migratory birds travel at night. The natural cues they use to find their way include a combination of light from the moon and stars and geomagnetic signals from the earth. Light from urbanized areas obscures the light from the moon and stars and it is suspected that red light, commonly used on towers and other tall structures, interferes with birds’ ability to track geomagnetic cues. This light emitted from urban areas disorients migrating birds and especially draws them into brightly lit downtown areas.

Disoriented birds will often fly around until they are exhausted and drop to the ground or they may strike a building or window and fall to the pavement below. If they survive the fall, they must contend with predators such as gulls that have learned that this is a ready source of food. If they are not eaten then they are “trapped” within the unfamiliar built environment. At this point they will often injure themselves by flying into plate glass at the ground level of buildings that have their lobbies brightly lit and the interiors decorated with large trees and or plants etc., where birds naturally seek shelter.

Poor weather, especially rain, overcast and/or foggy conditions, significantly exacerbate the disorientation migrating birds experience as they pass over urban areas as the natural cues birds use to migrate are further obscured by the inclement weather. During poor weather conditions, nighttime bird strikes are at their highest.

Daytime and nighttime strikes are related in that urban night lighting attracts and traps birds, which increases the density of migratory birds in urban areas. Thus, the number of daytime strikes increases as these trapped birds are unfamiliar with the built environment and are deceived by glass within the urban area.

While reducing both daytime and nighttime strikes is important, the focus of this report, as requested by Council, is nighttime bird strikes and ways and means the City of Toronto can minimize the way urban light draws birds into the downtown core at night.

With respect to new buildings, the proper design and orientation of exterior lighting can be beneficial in reducing nighttime bird strikes. Some measures would include orienting lights towards the ground and providing covers on the top of lights to avoid light shining skyward. Through the Site Plan Control approval process, Section 41.7(a)5 of the *Planning Act*, the City is able to require conditions respecting the facilities for lighting, including floodlighting, of buildings. It is proposed that guidelines be produced, in consultation with the stakeholder groups identified in this report, to be applied through Site Plan applications.

With respect to City owned buildings, Council has already demonstrated a leadership role by turning out the lights of City-operated buildings after hours and on weekends currently practiced under the Energy Management Program. In order to raise the awareness level of City staff regarding the danger buildings and lighting pose to migratory birds and remind staff of the Energy Management Program, notifications similar to the current Smog Alerts will be sent to all City of Toronto staff throughout each migratory season.

With respect to existing buildings, it is proposed to target an area in the downtown for a program to encourage property owners, managers and tenants to participate in a “lights out” program. This area is to be bounded by Bloor Street on the north to the lakefront on the south, and Jarvis Street on the east to University Avenue on the west. This target area contains the tallest buildings in the city and also tends to project the highest concentration of light into the night sky after hours. By initially working within this targeted area the City can focus and measure the success of its efforts in the rescue, rehabilitation and release of injured migratory birds. Building owners, managers and tenants in this area will be contacted and informed of the danger brightly-lit buildings pose to migratory birds. They will be encouraged to dim the lights in their buildings, offices and residences at night during each migratory season.

Regulatory Options

The *Municipal Act, 2001* does not include any specific power to pass by-laws to protect migrating birds from building lights. However, the City could pass a by-law under section 129 of the *Municipal Act, 2001* to require building owners to turn off their lights for a certain period of time in order to abate some of the nuisance effects of light pollution. The nuisance effects would include the negative effects on wildlife such as migrating birds.

Under the restrictions in subsection 129(2) of the *Municipal Act, 2001* the by-law could not impose a complete ban. The City cannot require light fixtures used in conjunction with a commercial, industrial, institutional, agricultural or recreational use to be turned off at any time the use is actually being conducted. The City is unable to require an illuminated outdoor advertising sign on the premises of a business to be turned off at any time the business is open to the public. In addition, the City is unable to require any emergency, security or public safety lighting to be turned off at any time the illumination of these lights is necessary for those purposes.

Rescue, Rehabilitation and Release Efforts

Council directed staff to identify how the City could assist in the rescue, rehabilitation and release of injured migratory birds. It is illegal to handle migratory birds without a permit from the Canadian Wildlife Service as a certain level of expertise is necessary for the safe handling of these animals. The following stakeholders have all been granted permits from the Canadian Wildlife Service to handle migratory birds. Each holds a unique and valuable perspective on the issues of rescue and rehabilitation of migratory birds and would bring a valuable contribution to the City’s efforts in reducing bird collisions.

Fatal Light Awareness Program - The Fatal Light Awareness Program (FLAP) was established in 1993 to safeguard migratory birds in the urban environment through education, research, rescue and rehabilitation. FLAP coordinates a team of volunteers to patrol downtown Toronto in search of fallen birds. The dead birds are collected and catalogued and the live ones are sent to Wingspread, FLAP's bird rehabilitation center northeast of the city, and the Toronto Wildlife Centre. FLAP has expressed interest in actively participating in the implementation of any future City migratory bird policies.

Toronto Wildlife Centre - Toronto Wildlife Centre (TWC) is located in Parc Downsview Park. TWC opened in 1993 and has grown into Canada's busiest wildlife centre and is funded entirely by donations. There are two veterinarians on staff and the rehabilitation facilities are capable of handling over five thousand sick, injured & orphaned wild animals annually. TWC has been accepting and rehabilitating injured migratory birds for over 12 years and has expressed interest in actively participating in the implementation of any future City migratory bird policies.

Earth Rangers - The Earth Rangers' Wildlife Centre and Hospital in Woodbridge provides rescue, rehabilitation, and release for sick, injured, and orphaned wild birds, mammals, reptiles and amphibians, with a focus on native species. The centre also provides public outreach and education, training for wildlife professionals, and research into wildlife medicine, rehabilitation and environmental health issues. Earth Rangers have expressed interest in actively participating in the implementation of any future City migratory bird policies.

Toronto Animal Services - Toronto Animal Services (TAS) seeks to promote and support a harmonious environment where humans and animals can co-exist free from conditions that adversely affect their health and safety. TAS provides emergency response to calls for wild animals and stray domestic animals that are injured, in distress or are imminently jeopardizing the safety of the public. The possibility of TAS providing resources for the purpose of transporting collected injured migratory birds during the migration seasons has been discussed with TAS. TAS will assist wherever possible, dependent upon available resources and competing priorities.

Consultation

Staff were directed to consult with local agencies and partners as well as the cities of Chicago and New York in order to identify ways and means of minimizing the number of migratory bird collisions. Discussions were held with several key local stakeholders, including the Fatal Light Awareness Program, Toronto Wildlife Centre, Earth Rangers, Toronto Animal Services, the Canadian Wildlife Service, and the Building Owners and Managers Association. The City's of Chicago and New York were contacted as well as the United States Fish and Wildlife Service. Information was provided by their respective staff on current practices and policies regarding migratory birds.

Chicago - the City of Chicago began working on the issue of migratory birds with the Regional Audubon Society in 1999 when the "Lights Out Chicago" program was initiated. In 2000 Mayor Daley signed the "Urban Conservation Treaty for Migratory Birds", which formalized the City's commitment to providing migrating birds passing through Chicago the best possible "visitor"

experience. Through a grant acquired from the US Fish and Wildlife Service the City of Chicago carried out the following initiatives:

- identified tree and shrub species used most frequently by birds, with the goal of using these in future open space plantings;
- created the “Birds of the Windy City” booklet, an educational guide to Chicago’s migratory bird species and ways individuals can participate in bettering the environment for birds;
- established Chicago’s fourth bird sanctuary on their lakefront; and
- expanded the “For the Birds” program, an educational program on stewardship for students, in partnership with Audubon.

In 2003, Mayor Daley made a formal Proclamation for a “Lights Out Chicago Days” recognizing the efforts made by building owners and managers. City of Chicago staff are presently working with local birders and land managers to develop a comprehensive “Bird Strategy” for Chicago, which will work in conjunction with the Mayor’s Green Building Initiative and the Mayor’s Nature and Wildlife Committee. As of August 2005, there is no formal Council position on migratory birds.

The City created and maintains the Birds Eye View website to inform the public about bird migration and bird viewing in Chicago. The City collaborated with the Bird Conservation Network to create and distribute 50,000 Chicago Region Birding Trail Guides, which includes maps, photographs and information on more than seventy birding sites in northeast Illinois and northwest Indiana. Chicago Park District also has produced a lakefront birding guide offering a range of bird watching opportunities. The City collaborated with local community groups to facilitate the creation of Chicago’s Nature and Wildlife Plan, which includes plans for creating and protecting bird habitat. In March 2005, the City hosted “Birds & Buildings: Creating a Safer Environment,” a conference that discussed designing and retrofitting bird-safe buildings.

New York - New York City Council has not taken a formal position on the issue of migratory birds. Since 2004, NYC Audubon (the NYC chapter of National Audubon Society) has been working with the Mayor’s Office on implementing a “Lights Out NYC” initiative that will turn out external lights of tall buildings and shield interior lights between midnight and 6 AM during the migratory seasons. This voluntary program came into effect in September 2005 and will continue to apply each year in September and October, and April and May, to correspond with the fall and spring migratory seasons. The Lights Out NYC program targets buildings taller than 40 stories, as well as lower glass buildings along the Hudson and East rivers, which birds use as navigational aids. Among the high-profile high-rises that have agreed to requests from the City of New York and Audubon are the Empire State Building, the Chrysler Building, Rockefeller Center, Citigroup Center, the Morgan Stanley Building and the World Financial Center.

NYC Audubon developed “Project Safe Flight” in 1997, which, in addition to raising public awareness of their daily bird rescue and collection patrols;

- educates the public on ways to reduce bird collisions; conducts research related to bird collisions in an urban environment;
- strives to include bird collisions in the environmental assessment process;
- collaborates with architects and engineers to develop new solutions to the glass-collision problem; and
- works to maintain the bird collision issue in the public eye.

NYC Audubon has developed a monitoring system that tracks bird deaths at specific, high-mortality sites and publishes a weekly update on their findings during the migratory seasons.

USFWS - The United States Fish and Wildlife Service, an agency of the Department of the Interior, recommends the following for the protection of migratory birds;

- turning off interior lights of buildings at night that would be visible out-of-doors during spring and fall bird migration seasons;
- avoiding vanity and other external lighting, turning such lighting off during the migration seasons especially during inclement weather;
- avoiding the use of solid or pulsating /and/or blinking white and red lighting (including incandescent, mercury and sodium vapour, neon, or other related lights); and
- where lighting must be used on the exterior of buildings, using minimum-intensity, minimum flashing (no more than 20 flashes per minute) white strobes.

The USFWS has officially supported the work of FLAP and intends to forward the Toronto City Council Notice of Motion on the Prevention of Needless Deaths of Thousands of Migratory Birds to all regional offices and field offices of the USFWS in order to stimulate similar protective actions throughout the United States.

Building Owners and Managers Association - The Building Owners and Managers Association (BOMA) is fully supportive of the efforts of the City in developing a voluntary 'lights out' policy and will provide whatever support necessary in addressing this issue. BOMA has indicated a willingness to work with the City in the development and implementation of any future City migratory bird policies.

Staff also met with and gathered input from the Fatal Light Awareness Program (FLAP), Toronto Wildlife Centre, Earth Rangers, and Toronto Animal Services (TAS). Together, these four key stakeholders along with BOMA each offer a particular 'piece of the puzzle' as to how to reduce migratory bird collisions and deaths. FLAP has expertise on the rescue of injured migratory birds, the Toronto Wildlife Centre and Earth Rangers offer rehabilitation facilities, TAS is equipped to handle and transport animals, and BOMA represents the owners and managers of the buildings within the area of the city presenting the greatest risk to migrating birds.

To ensure all stakeholders in this issue are able to provide their perspective and input as to how best to deal with the issue of bird collisions, it is being recommended that these key stakeholders

continue to be consulted on migratory bird issues, including a public awareness raising campaign. In addition, it is being recommended that staff consult with stakeholders on identifying the best practices for the rescue, rehabilitation and release of migratory birds and input on the development of guidelines for the lighting of new buildings that can be incorporated into the Site Plan Review process. Along with the key stakeholders of FLAP, Toronto Wildlife Centre, Earth Rangers, TAS and the Building Owners and Managers Association, representatives from the Toronto Field Naturalists, the Toronto Ornithological Club, the Canadian Wildlife Service and Toronto Hydro would also be consulted.

Public Awareness Campaign

Chicago and New York City are the two other North American cities that have developed and implemented bird-friendly policies. Both of these cities have included a comprehensive public awareness campaign in their efforts to reduce the numbers of migratory bird deaths. In Toronto, anecdotal evidence strongly suggests that there is a general lack of public awareness of the danger that brightly-lit buildings pose to migratory birds. Also anecdotally, there is a high degree of public support for reducing the needless deaths of migratory birds. This was also the case in Chicago and New York and once the public awareness campaigns that these cities initiated informed their publics on the danger that brightly-lit buildings pose to migratory birds, a high degree of support and participation resulted due to the public concern for birds.

The City could initiate a similar, comprehensive “Lights Out Toronto” campaign. Staff have had preliminary discussions with representatives from the Canadian Wildlife Service on the issue of funding for such an awareness-raising campaign. Initial thinking has this including: an informative brochure to be mailed out to property-owners, managers and tenants within the targeted downtown area; a comprehensive guide to migratory birds that pass through the Toronto area, including photographs and illustrations that would inform the public on matters relating to migratory birds, and; an interactive website to provide an online resource for the public on migratory birds in the Toronto area. Other mediums are also possible, including advertisements in subway stations, bus and streetcar shelters and radio announcements. This campaign would run twice annually, during the spring and fall migratory seasons and would be in place for spring 2006.

Reduction of Bird Deaths

Council directed staff to report back on ways the City could reduce bird collision deaths by 50 percent and thus save the lives of 5,000 migratory birds per year. Currently the City does not monitor the numbers of dead migratory birds found in Toronto. However, the Fatal Light Awareness Program, Toronto Wildlife Centre and Toronto Animal Services all keep track of the numbers of dead, rescued, rehabilitated and released migratory birds they deal with each year. It is recommended that a report to Council be prepared, in consultation with these key stakeholders, on the results of monitoring migratory bird deaths in light of the bird-friendly policies and programs outlined in this report after the fall 2006 migratory season.

Conclusions:

Migratory birds have not adapted to the urban environment in the same way that resident birds have. Many species of migratory birds travel at night and brightly-lit buildings along their routes pose a serious threat. Birds become disoriented by the light and are drawn toward it, which often results in the death of these birds from collisions with buildings. By reducing urban light levels at night, the City could prevent many deaths of migratory birds.

It is recommended that Council adopt a position in favour of turning lights down or off during the spring and fall migratory seasons. A “Lights Out Toronto” campaign is also recommended developed in continued consultation with key stakeholders who will also help to develop guidelines for the exterior lighting of new developments. In addition, the City will continue to practice the ‘lights out’ policy on weekends and after hours for City-operated buildings. In order to focus and measure its efforts, a target area from Bloor Street to the waterfront and University Avenue to Jarvis Street will be identified for a voluntary lights out program. Building owners, managers and tenants will be contacted in this area and be informed of how they can help to reduce bird collisions and deaths by turning out their lights during the migratory seasons.

The key stakeholders that will continue to be consulted on these matters include the Fatal Light Awareness Program, Toronto Wildlife Centre, Earth Rangers, Toronto Animal Services and Building Owners and Managers Association. Other interested parties will also be consulted on a continuing basis including, the Toronto Field Naturalists, Toronto Ornithological Club, the Canadian Wildlife Service and Toronto Hydro. Together these groups offer valuable perspectives and skill sets that could be applied in the City’s rescue, rehabilitation and release efforts for migratory birds.

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